NEAR EAST UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
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DETERMINANTS OF PROFITABILITY FOR THE BANKING SECTOR AT BORSA ISTANBUL

CHAWAN AWL

MASTER'S THESIS

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MASTER'S THESIS

SUPERVISOR:
ASSOC. PROF. DR.TURGUT TÜRSOY

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ACCEPTANCE/APPROVAL

We as the jury members certify the ‘DETERMINANTS OF PROFITABILITY FOR THE BANKING SECTOR AT BORSA ISTANBUL Chawan Awl the defended on /2020 has been found satisfactory for the award degree of Master.

JURY MEMBERS

.....

ASSOC. PROF. DR. TURGUT TÜRSOY (Supervisor)

Near East University
Graduate school of Social Sciences
Department of Banking and Finance

.....

Assist. Prof. Dr.dervis kirikkaleli (Head of Jury)

European University of Lefka
Faculty of Economics and Administrative Sciences
Department of Banking and Finance

.....

Dr. Ahmed somour

Near East University
Graduate school of Social Sciences
Department of Banking and Finance

.....

Prof. Dr. Mustafa SAĞSAN
Graduate School of Social Sciences
Director

DECLARATION

I CHAWAN AWL hereby declare that this dissertation entitled 'DETERMINANTS OF PROFITABILITY FOR THE BANKING SECTOR AT BORSA ISTANBUL' has been prepared myself under the guidance and supervision of **ASSOC. PROF. DR.TURGUT TÜRSOY** in partial fulfilment of the Near East University, Graduate School of Social Sciences regulations and does not to the best of my knowledge breach and Law of Copyrights and has been tested for plagiarism and a copy of the result can be found in the Thesis.

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DEDICATION

I dedicate this thesis to my family for nursing me with affections and love and their dedicated partnership for success in my life.

ABSTRACT

DETERMINANTS OF PROFITABILITY FOR THE BANKING SECTOR AT BORSA ISTANBUL

One of the major priority of banks and other firms is to maximize their profitability. Achieving such profits enables them to maintain and sustain their financial position, increase their equity, and enhance their solvency and liquidity, thereby increasing their ability to face the risks and obligations they face. This study is designed as an explanatory research aiming to study bank-specific factors which have potential to determine profitability ratios for banks in Turkey. In addition to determine factors affecting profitability, this study also aims at shedding light on the situation of banks in Turkey and the indicators used in measuring their performance. The research sample included several banks operating in Turkey and listed on Borsa Istanbul. Those banks included that their annual financial data is available for the period 1999 to 2018. Therefore, the sample of this study is categorised as panel data, including a number of banks over a series of time.

On the basis of some ground theories that can explain the determinants of profitability, three models are specified for investigation. Those ground theories are the signalling theory, agency theory, relative efficiency hypothesis, and trade-off theory.

Using multiple linear regressions of pooled OLS, FE and RE to examine the influence of the selected firm-specific factors on the profitability, the results show that financial leverage, asset structure and asset quality could negatively determine the profitability of banks listed on BIST over the studied period whereas capital adequacy and dividend per share have positive impacts. These results are likely to provide valuable insights to managers of the banks in Turkey and assist them in planning for profit maximization. With regard to recommendation for future studies, someone may consider some macro factors along with firm specific factors to further explain the variations in profitability.

Key words: profitability determinants, banking sector, Borsa Istanbul

ÖZ

BORSA İSTANBUL'DA BANKACILIK SEKTÖRÜNE KARLILIĞIN BELİRLENMESİ

Bankaların ve diğer firmaların en büyük önceliğinden biri karlılıklarını en üst düzeye çıkarmaktır. Bu tür kazançlar elde etmeleri, finansal konumlarını korumalarına ve sürdürmelerine, özkaynaklarını artırmalarına ve ödeme gücü ve likiditelerini artırmalarına olanak tanıyarak, karşılaştıkları risk ve yükümlülüklerle yüzleşme yeteneklerini artırır. Bu çalışma, Türkiye'deki bankalar için karlılık oranlarını belirleme potansiyeline sahip bankaya özgü faktörleri araştırmayı amaçlayan açıklayıcı bir araştırma olarak tasarlanmıştır. Kârlılığı etkileyen faktörleri belirlemeye ek olarak, bu çalışma Türkiye'deki bankaların durumuna ve performanslarının ölçülmesinde kullanılan göstergelere de ışık tutmayı amaçlamaktadır. Araştırma örneklemi Türkiye'de faaliyet gösteren ve Borsa İstanbul'da listelenen çeşitli bankaları içermektedir. Bu bankalar, yıllık finansal verilerinin 1999-2018 dönemi için mevcut olduğunu içermiştir. Bu nedenle, bu çalışmanın örneği, bir dizi zaman içinde bir dizi banka dahil olmak üzere panel verileri olarak kategorize edilmiştir.

Kârlılığın belirleyicilerini açıklayabilecek bazı temel teoriler temelinde, araştırma için üç model belirlenmiştir. Bu temel teoriler sinyal teorisi, ajans teorisi, nispi verimlilik hipotezi ve değiş tokuş teorisidir. Seçilen firmaya özgü faktörlerin karlılık üzerindeki etkisini incelemek için toplanmış OLS, FE ve RE'nin birden fazla doğrusal regresyonu kullanılarak, sonuçlar finansal kaldıraç, varlık yapısı ve varlık kalitesinin BIST'te listelenen bankaların incelenen karlılığını olumsuz yönde belirleyebileceğini göstermektedir. sermaye yeterliliği ve hisse başına temettü tutarının olumlu etkileri bulunmaktadır. Bu sonuçların Türkiye'deki bankaların yöneticilerine değerli bilgiler vermesi ve kâr maksimizasyonu planlamasına yardımcı olması muhtemeldir. Gelecekteki çalışmalar için tavsiye ile ilgili olarak, birileri karlılıktaki varyasyonları daha fazla açıklamak için firmaya özgü faktörlerle birlikte bazı makro faktörleri düşünebilir.

Anahtar kelimeler: karlılık belirleyicileri, bankacılık sektörü, Borsa İstanbul

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ABBREVATIONS

ROA .....Return on assets

ROE .....Return on equity

EPS .....Earnings per share

NIM .....Net interest margin

GMM .....Generalized method of moments

BIST.....Borsaistanbul

ISE .....Istanbul stock exchange

IMF.....International monetary fund

IFRS.....International financial reporting standards

ISE.....Istanbul stock exchange

OLS .....Ordinary least square

RE .....Random effect

FE .....Fixed effect

CHAPTER 1

INTRODUCTION

In this chapter, an overall background is presented about the banking sector in general and banks in Turkey in particular. It shows that commercial banks commonly prioritize their profit maximization and therefore the factors that determine profitability are considered by the management of bank as well. Moreover, the problem statement of this study arouses around the increase of Turkish banks' branches whereas their profitability had declined over time. The key objective of our study is also shown to examine the factors determining profitability of Turkish banking sector. The hypotheses of this study are set in accordance with the selected internal factors that probably influence profitability of this sector. The contributions that the study possibly makes through a number of aspects are also presented in this chapter. Finally, the limitations are shown in the last section of the chapter.

1.1. General background

The achievement and maximization of profits is considered as one of the top goals of commercial banks, if it is not the primary objective. Obtaining such profits empowers the banks to sustain and maintain the financial position of them, enhance their equity size, and increase their solvency and liquidity ratios, thus increasing capability of the banks to bear the risks and obligations that might occur in the business. Contrary to the losses which cause the deterioration of the financial situations of banks, the destruction of

their owners' equity and exposure to financial adversity and default, that may eventually bring about liquidation.

However, profit maximization in commercial banks is constrained by many considerations. Since banks have to manage different aspects of finance its sources and investments such as maintaining sufficient liquidity, seeking safe use of funds, guaranteeing depositors' rights, and avoiding the different types of risks, their ability of the commercial bank to maximize profits are limited accordingly (Sufian andHabibullah, 2009; Alshatti, 2015). On the other hand, in order for the bank to make the appropriate profits that increase the value of the shareholders' wealth, it must use the funds obtained from various sources as efficiently as possible (Bodla andVerma, 2006). It should also maximize revenues and rationalize expenditures. To achieve this, they must seek to obtain a certain amount of deposits at the lowest possible cost. These deposits are then utilized in the form of credit facilities, financial investments that generate the maximum profit possible within an acceptable liquidity and relatively low risk, aiming to maximize net profit. Consequently, this will increase the fair value of stock of the bank (Barth, Beaver and Landsman, 1996).

Profitability is the association between the earnings of the projects and the investments they have contributed to. It is the objective that bank administrations aspire to achieve as a measure of judging their efficiency and effectiveness in using their resources (Olweny and Shipho, 2011). They represent the net outcome of a great number of decisions and policies. Therefore, it is an indicator of the performance of the management of the commercial banks (Pasiouras and Kosmidou, 2007).

The relationship between profits, on the one hand, and assets or equity on the other hand is direct. The main objective of capital formation and asset acquisition is to achieve an adequate volume of business operations, ultimately with satisfactory profits, when compared with similar institutions in the sector rate, or with popular rates in financial markets (Balasubramaniam, 2012).

On the other hand, profitability not only contributes to the satisfaction of shareholders, but is also an indication for depositors, creditors, current shareholders and prospective bankers. Profitability indicators are important compounds for investors and the owners to establish a banking organization when taking risks and putting capital in a business.

This profitability in commercial banks may be influenced by many factors, whether related to the management of the bank or its financial conditions such as the size of equity and assets, liquidity rates, solvency, spread of the bank, number of branches, performance of banking services, interest and debit interest rates (Guru, Staunton and Balashanmugam, 2002; Islam, Sarker, Rahman, Sultana andProdhan,2017; Öhman and Yazdanfar, 2018; Batten and Vo, 2019). The relative importance of these factors varies in the degree and severity of their impact on profits. These factors need to be examined and determined to be important in influencing profits in order to develop appropriate policies to improve profitability, activate banking activity, maintain liquidity and cash flows.

The banking sector of Turkey is one of the most developed economic segments in the past couple decades. This sector has witnessed a rapid growth in the number of banks and number of their branches. The number of banks in Turkey increased from 48banks and 5,987 branches and offices at the end of 2004(Kafali, 2005) to 53 banks with 11,576 branches and offices at the end of 2018 (The European Banking Federation, 2018). These banks have employed 208,000 people, according to the data for 2018. The total assets of the Turkish banking sector reached $743.7 billion as of 2018. They have contributed to the economy by providing loan volume of $461.8 billion in 2018 (Hurriyet daily news, 2019). Net profit of banking sector in Turkey reached $9.405 billion. Moreover, domestic credit as a percentage to GDP which is provided to private sectors by banks dramatically rose from 17.3 in 2000 to 64.2 in 2018 (World Bank data, 2019).

The Turkish banking sector is considered as unique with regard to their long history of operating in a developing country and continues to provide their services under different economic conditions. Firm characteristics have

dramatically changed over that history of operation. These all influences firm performance of this sector. Therefore, the study to investigate the factors influencing banks profitability is important and useful to reveal the extent and degree of impact on banking performance. Moreover, understanding the determinants of profitability is vital in guiding banking policies and management because it could assist them to create the right climate to enhance their profitability to ensure their continuity and success in achieving their objectives.

1.2. Problem statement

The profitability index is one of the most important indicators of financial performance of commercial banks. Commercial banks always seek to maximize their profits. In order to achieve this, it is necessary to identify the firm-specific factors that might influence the profitability of banking sector.

The importance and role of the banking sector has been increasing in Turkey. The remarkable development in the number of banks and their branches operating in Turkey over the past few years is a clear evidence for that. Despite all these, it is noticeable that the profitability of Turkish banking sector has dropped over the past year (BRSA, 2019). Thus, the main problem statement of this study is raised from this perspective and it is worth investigating the factors that affect the financial performance indicators of the banking sector in Turkey. Moreover, the research problem of the study can be formulated in the question of; what are the most important variables and factors that influence the banks' profitability in Turkey?

Then, the following sub-questions are raised to answer the main research question in detail:

1. What is the nature of the association between total assets and the ratios of banks' profitability?
2. What is the nature of the relationship between the ratio of capital funds to risk weighted assets and the ratios of profitability?

3. What is the nature of the relationship between the ratio of total liabilities to total assets and the ratios of profitability?
4. What is the nature of the association between the ratio of total loans to total assets and the ratios of profitability?
5. What is the nature of the association between the loan loss provisions to net loans and profitability ratios?
6. What is the nature of the association between the ratio of customer deposits to total liabilities and the ratios of profitability?
7. What is the nature of the association between cash dividend per share and the ratios of profitability?

1.3. Research objectives

According to the problem statement, this research aims to attain a number of objectives, including:

1. Identify the elements influencing the profitability of banks which are operating in Turkey.
2. Shedding light on the situation of banks in Turkey and the indicators used in measuring their performance.
3. Identify the sources of fund of those banks and their uses.
4. Investigate the impact of fund sources and their methods of use on the performance of the banking sector.
5. Making recommendations that would preserve and improve the profits of banks.
6. Address the possible reasons that lead to loss or decrease banks profitability.

1.4. Research significance

This study can contribute to the literature through the following aspects:

1. It contributes through highlighting one of the significant issues related to factors influencing the banks' profitability ratios.
2. It attempts to identify factors will probably enhance banks profitability. This will provide a source of guarantee to investors, a trustworthiness of the official authorities, and an enhanced speculation environment.
3. It also contributes to providing useful information that helps decision makers in the Turkish Monetary Authority and other relevant parties to help to develop banking policies that support the profitability requirements of the Turkish banking system and to achieve growth and progress of this body.
4. This research will be of great interest to scholars and specialists in the field of banking. Moreover, it opens the path for future studies to investigate the external aspects influencing the banks' profitability.

1.5. Research hypotheses

According to the objectives and questions raised by this study, the following research hypotheses are set to be tested:

H 1: There is an association between the total assets and profitability, and this relationship is statistically significant.

H 2: There is an association between the ratio of capital funds to risk weighted assets and profitability, and this relationship is statistically significant.

H 3: There is an association between the ratio of total liabilities to total assets and profitability, and this relationship is statistically significant.

H 4: There is an association between the ratio of total loans to total assets and profitability, and this relationship is statistically significant.

H 5: There is an association between the ratio of loan loss provisions to net loans and profitability, and this relationship is statistically significant.

H 6: There is an association between the ratio of customer deposits to total liabilities and profitability, and this relationship is statistically significant.

H 7: There is an association between cash dividend per share and profitability, and this relationship is statistically significant.

1.6. Research limitations

There is missing and inconsistency of the data of banks, where the researcher to make models to unify the budgets of banks in order to access to statistical data can be used. This is because the banks:

1. Banks differ in the classification of financial statements published in the financial statements from one bank to another.
2. Different methods of banks in the classification of financial statements published in the financial statements from one fiscal year to another for one bank. In a way that some banks make adjustments to the classification of some items of financial statements from one fiscal year to another year.
3. Additionally, there were some missing data for some banks related to some financial year which made us to exclude those banks in our sample study.

1.7. Conclusion

This chapter presented a general background about the banking sector in general and banks in Turkey in particular. It showed that commercial banks commonly prioritize their profit maximization and therefore the factors that determine profitability are considered by the management of bank as well.

In addition to the general background on the topic, the problem statement of this study stimulated around the increase of Turkish banks' branches whereas their profitability had declined over time. Accordingly, the main goal

of this research was also shown to investigate the factors influencing the profitability of Turkish banking sector. The hypotheses of this study were set in accordance with the selected internal factors that probably influence profitability of this sector. The contributions that the study possibly makes through a number of aspects were also presented in this chapter. Finally, the limitations were shown in the last section of the chapter.

CHAPTER 2

THEORETICAL BACKGROUND

Banks are intermediary financial institutions that provide services to both depositors and borrowers (investors) in the community. They play a key role in the growth of economic activity by providing important banking services to the community, whether individuals, institutions or governments. Commercial banks have evolved with the development of economic activity, the spread of prosperity and economic prosperity, as well as the increasing need to use money in daily transactions.

The success of the bank's management in achieving its objectives is connected to its ability to provide the bank with a strong financial structure .Financial structure consists of the liabilities structure, which are considered as sources of finance, and the asset structure, which are seen as uses of funds .Accordingly, they are able to accommodate changes in its current and future liabilities and consequent losses if its assets cannot fulfil these obligations .In light of the political, financial and economic fluctuations in the Turkish territory, which cast a shadow over the economic and financial situation in Turkey, the success of the commercial banks departments in Turkey in achieving their objectives has been linked to their ability to reconcile the structure of liabilities (sources of financing) and the structure of assets (uses of funds). They are exposed to economic shocks that may threaten their profitability, liquidity and sustainability.

Banks in Turkey play a key role in the Turkish national economy, through their character in the procedure of financial intermediation between depositors and borrowers.

In this chapter we will discuss three main topics: The first section discusses the general framework of commercial banks –concepts and definitions, their importance and their functions. The second section deals with the structure of assets and liabilities in banks and their determinants. The third section discusses the sources and uses of funds for commercial banks operating in Turkey.

2.1. Banks and their services

2.1.1. Definition of banks

A bank is a financial organization that accepts deposits from the public and loans credit. The exercise of lending could be accomplished either straightforwardly or in a circulation method by the capital markets. As a result of their significant role in the financial security of an economy, banks are differently managed in several countries. Most economies have homogeneous a framework recognised as fragmentary save banking under which these forms of financial institutions hold liquidity resources correspondent to only a portion of their current liabilities. Although different guidelines planned to guarantee liquidity ratios, banks are yet commonly dependent upon least capital prerequisites on the basis of a world widepreparation of capital measures, which are known as the Basel Accords (Heid, 2007).

The concepts related to commercial banks are varied according to the perspectives from which they were viewed. In this sense, the bank is an intermediary between those who have surplus funds and those who need those funds. Commercial banks can also be defined by the functions they perform and the services they provide to their clients. Thus, they are financial intermediaries providing financial services to surplus and deficit units (Cornett and Saunders, 2003).

Others have defined bank as financial institutions dealing with money and securities, taking and giving, buying and selling, savings and investment,

which may be owened by private sector, government or both together at the same time (La Porta, Lopez-de-Silanes and Shleifer, 2002).

Commercial banks, also known as deposit banks, perform a basic task that is limited to other banking and financial institutions. This task is to accept current deposits, that is, demand deposits that can be withdrawn by checks by depositors at any time after they are deposited (Berger and Bouwman, 2015).

2.1.2. Objectives of banks

- Protecting cash for customers
- Provide customers with interest on deposits, securing against losing cash value because of inflation.
- Providing cash loans to companies, individuals and householders.
- Providing financial counsel and alike financial facilities, for example, insurance (Pettinger, 2017).

Protect deposits:

Banks are considered as a securitised place to deposit money. It is likely to be unfeasible and risky to keep all of your retained income sat home or at your business office. In medieval occasions, individuals would often ask banks to protect their money and resources. Therefore, individuals could in turn avoid the stress and worrying about their additional cash. Typically, the central bank of a related country guarantees the banks as a loan specialist after their compliance to the accepted regulations and policies have been investigated and approved. In this way, savers consider the banks to be sheltered spots to deposit their saved cash.

Interest on deposits:

In general, banks pay interest to customers on their deposits. Currently, this might be fairly low. However, the loan fee can be noteworthy for cautious records. In the time of growth, debt costs on deposits are important for synchronising the genuine estimation of the savers' funds. For example, in the evsent that growth is 4%, saving income will cause decline in the worth of

the estimation of investment funds at that point. Nonetheless, in the case if the bank bears a 6% debt cost, the estimation of the customers' investment funds is more likely to increase. For specific customers such as beneficiaries, premium instalments on their bank deposited funds can be an important source of income.

Banks are financial intermediary in which they invest the deposits in investments such as loans to different customers and this could bring bout profit to the bank. For instance, a bank has willing to pay 2% on bank deposits yet provides loans to businesses and companies at a higher rate, 6% for example. Consequently, the bank could generate profit through the difference between interest payable and interest receivable. Moreover, a bank basically needs to maintain adequate liquidity to fulfil the needs of customers in the case of cash withdraw requirement.

The process of loaning in banks is possible change unguaranteed individual early payment to guaranteed household loan, is also known as mortgages. Unguaranteed loan is associated with a higher financing cost due to the high level of risk. In addition, guaranteed household loan is at a lower interest rate, but for longer terms in which it can last fora 30-year period and beyond.

Individual loan is one of the most common types of loans that banks provide to normal persons. In such a case, the bank might provide a credit to be paid back over a short period of time, a couple of years. This credit might be unguaranteed and make not lien to a valuable property such as a house. This kind of debt could be borrowed by individuals for the purposes of purchasing personal assets like a car.

Another common type of bank credit is business loan which is provided by banks to companies and businesses. The purpose of this credit could be to start a business or to grow an existing company.

Moreover, mortgage loan is an exceptional kind of credit, where the bank pays an advance to purchase a house. Normally, the customer needs to pay a deposit on the house in advance, which is a percentage of the price .Legitimately, the bank claims the ownership of the house until the full

amount of the loan is paid back by the borrower through several instalments over a long period of time. Generally, financing costs on mortgage loans is moderately low since the credit is guaranteed by lien.

Finally, overdraft is also provided by banks as another kind of credit. Here, a bank can concede to an overdraft with the existing customers. As a result, customers could generate liquidity to pass some emergency situations. However, the amount of overdraft is generally limited by the regulations of the bank.

In addition to loan, banks can provide different facilities to customers, for example; guidance on financial matters, offering extraordinary ideas to clients, including organizing travel protection, rapid access to cash, and strategies to make worldwide payments. Increasingly, banks offer electronic exchange of cash through frameworks such as Payment Schemes Limited.

2.1.3. Importance of banks

The process of banking is widely assumes and proved as a significant job in the economy since it provides and circulates cash in the market among savers, investors and households. The significance of banks could be considered through the notion of the present life-blood of the economy. Albeit no wealth is made by Bank, however their fundamental exercises encourages the procedure of creation, trade and circulation of fortune. Along these lines they become the successful assistantsin the financial improvement and development. Saini and Sindhu (2014) define Banks as the overseers and dispersion of liquid capital that is the life-blood of business and contemporary exercises and the judiciousness of their organization depends on the monetary prosperity. Based on the important functions of Banks, we may effortlessly portray the significance of banks in the present global life (Kalpana and Rao, 2017), as follow:

Accumulations of Savings and Advancing Loans: the acceptance of deposit and propelling the credits is the essential capability of commercial banks. There are number of records that banks keep for their customers.

*Cash Transfer :*banks have stimulated the creation of instalments beginning with one place or people into the next through checks, trade bills and drafts, instead of cash. However, instalment check draft is increasingly protected and valuable. This office is an extraordinary assistance for traders and representatives. Actually, it upgrades the role of banks for business network.

Inspires savings: banks play out a priceless administration by empowering investment funds among the individuals. They initiate them to put something aside for gainful speculation for themselves and for national intrigue. These investment funds help in capital development.

Allocation Savings into Investment: banks transfer the reserve funds gathered from the individuals into speculation and along these lines increment the measure of viable capital, which helps the procedure of monetary development.

Overdraft Services: the banks enable the overdraft offices to their believed clients and hence help them in defeating of impermanent money related troubles.

Discount Bill of Exchange: the significance of banks could be considered by the office of trade bills limitation. Banks refund their trade bills of customers and assist them in the money related issues. Through limiting bill of trade, the banks are likely to obtain whole speculation they need.

Finance External and Internal Trade: banks help dealers and brokers in financing inside and outside exchange by limiting remote bill of trade, issuing of letter of credit and different certifications for their clients.

*Performance as an Agent :*the bank act as a specialist and help their clients in the buy and offers of offers, arrangement of storage spaces instalment of month to month and profits on stock.

*Issue of Traveler's Checks :*for the suitability and safety of cash for voyagers and vacationers, bank gives the office of explorer's checks. These checks empower the explorers and vacationers to meet their costs during their adventure, as these are acknowledged by issuing investors, cafés, and other

agents both at home and abroad. Almost certainly, this is additionally one of the extraordinary elements of banks and demonstrates the significance of banks for us in progressively exact ways.

General Utility Facilities: presence of commercial banks is fundamental for commitment to general thriving. Banks are the principle factors in raising the degree of monetary improvement of the world. Notwithstanding, banks likewise give numerous administrations of general utilities to the clients and the overall population.

2.1.4. Economic roles of banks

As we realize that key objectives of a commercial bank is to procure benefit through tolerating of deposits and propelling advances through numerous strategies. In spite of the fact that these capacities are the fundamental capability of commercial banks, nevertheless there are meaning fully greater capacities which improve the significance of today's banks (Disyatat, 2004).

- Receiving deposits, by opening various types of bank accounts such as saving deposits, time deposits and current deposits.
- Advancing of credits to people who need cash through various strategies and necessities.
- Arrangements of assistance and general utility facilities to the clients.
- Creating original investments in various associations and expanding the economy.
- Advance capital arrangement in the economy by preparing and accretion of reserve funds with the goal of speculations.
- Improvement of enterprises in the economy as specified by the prerequisites of the economy.
- A fair economic development is obtained in various segments through the bank reserves.
- Advancement in agricultural creation is made conceivable by giving several kinds of credits
- Banks assist in decreasing dependence in remote help by their endeavours in the activation of household investment funds

- Banks help in the usage of a powerful fiscal strategy as per the target to national bank.
- Commercial banks help in the creation and conveyance of cash through the deals and acquisition of protections.
- Commercial banks are the custodian and wholesaler of liquid capital of the economy, which is the initial need of all business and financial activities of an economy.

2.2. Assets and liabilities structure

The success of banks in achieving their objectives, like any other commercial enterprises, depends on the ability of its management to manage the assets of these banks and their use ,as well as their ability to develop financial resources of these banks, whether self-directed or external resources and directed these resources towards investments that enable them to enhance their profitability and maximize them.

With regard to the concept of financial structure, there are several definitions of the financial structure. It is defined in the literature to represent all forms and types of financing, whether ownership or borrowing, as well as short-term or long-term sources. Moreover, financial structure is also defined as the variety of sources from which an entity has received funds to finance its application. It includes all the elements that make up the liabilities side, whether long-term or short-term. The financial structure can be said to be a combination of long-term, medium-term and short-term funding sources.

The leverage is defined as the ratio of debt to private funds and called lift because it raises the profits of the institution with all its assets if they continue.

The term financial structure is linked to the left side of an organization's balance sheet, which means a detailed description of the sources of funding in terms of the percentage of each source element for the total.

2.2.1. Short-term funding sources:

These are those types of financing in which the term of the loan or financing is one year or less. It is usually for the purpose of investing in current assets and short-term financing consists of bank credit, commercial credit and commercial paper.

- *Bank credit:*

Commercial and industrial institutions are very dependent on banks for their activities. In many areas, such as facilitating payment, import and export operations, in addition to providing the necessary credit to finance its growth and development needs.

- *Commercial Credit:*

The business in general buys the supplies it needs in its operations and operational activities from other establishments. The value of such inputs is shown in the entity's records under Accounts or Accounts Payable. This type of financing is called commercial credit earned. This source accounts for the largest proportion of total short-term indebtedness.

- *Commercial* papers:

They are instruments written in line with the formal conditions recognised by the law representing money worth paying in a certain place and accept trading by commercial methods. Commercial papers have several characteristics that distinguish them from other commercial papers. It represents a cash right, accepts trading by trading methods, which are short-term securities and have traditionally been accepted as a loyalty instrument that replaces cash.

2.2.2. Medium-term sources of funding:

- *Direct medium-term loans:*

These loans are a type of loan that the entity is obliged upon obtaining to repay both the principal and the interest due on a certain date. In this case, the borrowing process is subject to the terms of the agreement between the

entity and the lender regarding the interest rate, maturity date and method of repayment. The borrowing period usually ranges from three to fifteen years.

- *Leasing:*

A contract whereby the lessee is obliged to pay certain amounts at agreed dates to the lessor of an asset for the first use of the services provided by the leased asset for a certain period.

2.2.3. Long-term sources of finance:

This is the complementary component of the financial structure. Private funds include:

- *Ordinary shares:*

A common stock represents a proprietary document with a nominal, book and market value. The face value is the value on the share document. The book value represents the value of shares. The market value of a stock is the price at which the stock trades. This means that ordinary equity holders are more likely to receive returns than bondholders and are associated with risk to owners.

- *Preferred Shares:*

The ones that are held according to the company's system that issues them. These are the shares that the bearer decides more than what is prescribed for ordinary shareholders, such as the priority in obtaining profits, even if the ordinary shareholders do not have any share of the profits to be distributed, and among its characteristics are the right to priority in obtaining profits at a specified percentage.

- *Retained earnings:*

The undistributed portion of dividends to shareholders during the previous financial year.

- *Long-term borrowing:*

Indebtedness represents what the institution should meet its value at a later date. Long-term borrowing takes two basic forms: long-term loans and bonds. Here are the main features of each:

- *Long-term loans:*

These are loans obtained by the institution from financial institutions such as banks and insurance companies, and the maturity date may reach thirty years. One of the most important characteristics of the loans is that the terms (interest rate, maturity, mortgages, etc.) are agreed upon by negotiation between the lender and the borrower.

- *Bonds:*

A debt document issued by the company or any other entity, which is an expenditure or contract between the investor or the savings (the lender) and the company (the borrower). A predetermined bond maturity usually lasts from 20 to 30 years.

2.3. Profitability of banks

The achievement of profits is one of the most important goals pursued by commercial banks, like other economic units. It is necessary for its survival and continuity, as it is considered the main requirement for shareholders, depositors, lenders, management and supervisory authorities. It is the goal that shareholders aspire to increase the value of their wealth. It is the source of confidence for both the bank's depositors and lenders. It is also the goal that the bank’s management aspires to be an important indicator to measure its efficiency in using the resources available to it. It is the subject of attention of the regulatory authorities because of the success of the bank and its ability to improve the adequacy of its capital (Kajola et al., 2018).

2.3.1. The concept of profitability

Profitability can be defined as the relationship between profits achieved by the firm and the investment activities which contributed to the profit generation. Profitability is a goal for the firm and an adequate measure of its efficiency (Petria et al., 2015).

Profitability is measured either by the use of the association between profits and sales, or by the use of the association between profits and investments that it contributed to achieving, knowing that what is meant by investments is the value of assets or equity (Kajola et al., 2018).Commercial banks effort to attain their goal of targeted profitability through making two major types of decisions which are investment decision and financial decision (Hzwry, 2018).

Investment decision it is the set of decisions regarding how commercial banks use the resources available to them to acquire several kinds of their assets. The effect of the investment decision on profitability is shown through the optimal distribution of the resources available to the institution on the various types of assets in a way that balances between the appropriate investment in each item of assets without an increase leading to the disruption of resources, and without a decrease leading to missed opportunities in order to enable commercial banks to achieve the best possible return with the minimum loss of liquidity.

Financing decision it is related to how to show the sources from which the funds needed for commercial banks will be obtained to finance investment in their assets. The impact of the financing decision is reflected on profitability by arranging sources of funds from deposits, rights of owners and debts in a way that enables the project to obtain the largest possible return. It can be considered that profitability is a strategic goal that enables banks to grow and continue, because losses and the inability to achieve profit will ultimately erode the rights of owners and thus liquidate.

2.3.2. Sources of profits for banks

Sources of profits consist of the benefits derived from loans and interest (capital gains) obtained from investments and the wages of different services, and we will address these sources in detail as follows:

2.3.2.1. Interest on loans

Loans and advances are among the most important elements of revenue for commercial banks. The process of granting banking is affected by the increased demand for them and the policy of promoting loans. The more demand for loans, the more the bank will be able to repay it, the higher its profits. The diversity of banking services for clients contributes to increasing the volume of loans. The size of bank revenues is estimated at the interest rates on lending which is affected in turn by a combination of some factors, as follows (Nabila, 2016):

The bank's default susceptibility: there is a strong relationship between interest rates and investable cash reserves. The higher these reserves, the lower the interest rate, and vice versa, assuming other things are constant.
The degree of default risks: where there is a clear inverse relationship between the degree of risk, the greater the risk to loans provided to clients and the interest rates on them, the higher the risk, the greater the interest rates imposed on loans in order to cover the expected losses due to that on the one hand and cover the collection expenses of loans on the one hand Other.
*Documentation :*the more guarantees that document the loans, the more the bank will tolerate the conditions it imposes on the loans, including the interest rate, and vice versa.
Forwards: there is a direct relationship between the maturity of the loans and the interest rate on them, the higher the maturity of the loans, the greater the interest rate charged on them.
*Borrower size and loan size :*the higher the size of the loan or the borrower, the lower the interest rate, because of the availability of financial resources for these borrowers to cover the size of their loans.

*Assumption cost :*there is an inverse relationship between the borrowing costs represented various costs, including expenses of identifying the customer's financial position and learning about his ability to pay, between the interest rates on them, the higher the costs, the higher the interest rates in order to cover those costs.

*Competition :*the more competition among commercial banks, the lower interest rates on loans.

2.3.2.2. Capital gains from investments

Banking policies for investing in commercial paper differ from those used to provide loans to individuals and institutions. Banks take stock investments as an alternative to money. Instead of banks maintaining large cash balances in their coffers to meet liquidity requirements, they depend on investing them in securities that achieve returns. This can be converted to cash quickly when required. Thus, investment is targeted for profitability and liquidity (Stowell, 2017).

2.3.2.3. Other banking services fees

Commercial banks provide many services to their clients, which receive different types of commissions on the services they provide, including (Nabila, 2016):

Trust and custody services: such as investing funds for the benefit of others, executing the deceased's wills, collecting rental properties for the benefit of others, and disbursing the funds concerned for the benefit of others.

Lending services: such as wages for inquiring about the credit, statements of property and real estate, mortgage wages, fees for renewing or extending loans, and fees for deducting securities.

*Issuing letters of guarantee :*this is what banks receive in exchange for issuing local and foreign letters for natural and regular persons.

Collecting public revenue: such as the phone, water and electricity, selling insurance documents to the interests of insurance facilities, and collecting government housing projects rents.

Transfer of money: in exchange for receiving its money in cash or transferring it from deposit accounts to customers.

Depositing and withdrawal services: such as the fees of the instrument, drawn in favour of the customer and deposited in the bank, but bank deposits do not achieve any revenue for the bank. This may not cover the costs incurred by the bank such as commercial deposits as a result of repeated deposits and withdrawals on them.

2.3.3. Measurements for banks' profitability

There are several criteria for measuring profitability (Albertazzi and Gambacorta, 2009), and we find that there are a number of criteria utilised to measure profitability:

- *Return on Assets (ROA)*

This criterion for measuring profitability is based on the relationship between profit from operations and the assets that contributed to its achievement. Revenue power or return on assets is defined as the ability of a particular investment to achieve a return as a result of its use. Or is the institution's ability to achieve profits as a result of using its assets in its primary activity and in a simpler way it is the ratio of operations profit to the Foundation's assets. Revenue is a better measure of profit than judgment to judge an organization's efficiency. Because the profit is an absolute number that does not refer to investments made. While voluntary power creates such a relationship, which facilitates comparisons with returns for other periods, as well as other institutions, it also helps in identifying the direction that the institution's performance takes. The voluntary strength is a measure of the organization's operational performance. Therefore, when calculating it, it is necessary to limit the assets actually participating in the normal operations of the corporation, and the net operating profit must be used. In other words, it

is limited to the profits that are generated as a result of operating these assets before taxes, expenses and other revenues.

- *Return on equity (ROE)*

It refers to the amount of return that owners receive as a result of investing their money in the facility and bearing it for risk. It is based on the concept of profit, as equity is the paid-up capital plus various legal and optional reserves as well as undistributed profits. These rights are equal to the total assets minus all liabilities, whether long or short term. As for the net income, it means the profit realized from the operations of the institution or any other sources after the tax is offered. That is, the net comprehensive profit, and there are those who see the necessity of having this proportion calculated before the tax, given that the tax is an element that the corporation has no control over.

The return on equity reflects the efficiency of the institution’s management in managing both sides of the budget or the skill in using the assets (operating efficiency), as well as the skill in installing the left side (financial efficiency) to achieve the best possible return for project singles. It is noted that the return on equity index measures every pound invested by common stock equity. This measure could controls for the influence of operating and financing activities. In the case when there is zero amount of debt in the company's capital structure, the ROE equals the ROA.

- *Earnings per share (EPS)*

Another commonly used measure of profitability is earnings per share, denoted as EPS. This ratio is considered as one of the best measures of the real price of a share because it demonstrations the portion of each shareholder in the profit after tax for the company. EPS is calculated by subtracting dividends of preference shares from the net income of the firm in a particular year, then dividing this number by the average number of outstanding shares in the same period of time.

EPS comes in two major methods, diluted earnings per share and basic earnings per share. These kinds are similar from some aspects and different from some other aspects. The diluted ratio of earnings per share also includes the number of tradable and convertible shares whereas the basic earnings per share do not. In general, the diluted method of earnings per share has greater accuracy and it is more commonly used. Although there is no general understanding about a good or bad method, it is obvious that the higher the value of earnings per share, the better is.

Returns are considered one of the most important elements for the continuation of companies. The possibility of achieving goals and the survival of companies depends on achieving returns. On the other hand, the continuous losses lead to the depletion of assets and amortization of equity, and then the creditors' control of the company. And when desiring the success and continuation of the company, he should be concerned with the issue of returns as a percentage of sales, from total assets and from equity, not just the amount of returns. The most important thing is to look at the stability, returns and regularity of returns. This is more acceptable than obtaining sudden profits for a certain period (Kumar and Venoor, 2018).

2.3.4. Factors affecting bank’s profitability

In order to achieve their goal of profit maximization, banks face many challenges in managing the factors whose influence on their profitability varies.These factors can beinternal to the banks themselves or external to the surrounding environment. Internal factors include assets size, structure and quality, leverage, financial structure and some other firm-specific characters whereas external factors include political, economic, legislative, and several other factors.In this research, we focus on the internal factors that are used in testing hypotheses and analysing results (Afolabi et al., 2019; Kadioglu et al., 2017; Molinari et al., 2017; Petria et al., 2015; Yusuf, 2018).

2.3.4.1. Bank size

The size of the bank is usually measured by the amount of assets the bank owns or the amount of ownership it owns. The larger the size of the bank measured by the assets leads to a decrease in the rate of return on the assets. This rate is large in small banks, compared to large banks. However, it is noted that the volume of deposits in large banks is greater than in small banks. This means that if the degree of leverage is high, it would lead to increase the rate of return on equity. The increase in the assets of commercial banks increases their ability to invest. It is always expected that an increase in the bank's assets will lead to an increase in its profitability. In the event that the size of the bank is measured by its ownership rights (paid-up capital, reserves, and profits not distributed), we find that the banks have large ownership rights, the funds available to them are greater, and their ability to invest these funds is wider, and the increase in property rights increases the confidence of the public dealing with them. This may be reflected in the size of customer deposits with it and thus increase in leverage, which in turn maximizes the rate of return on equity.

2.3.4.2. Capital adequacy

Capital adequacy indicators determine the financial institutions' solidity throughthe shocks to budget lines. The significance of the indicators of capital adequacy is that they take into consideration the initial financial risks facing financial institutions such as risk of exchange rate, credit risks and interest rate risks. Capital adequacy indicators go beyond calculating risk within budget lines to off balance sheet items such as dealing in derivatives. The benchmark used is aggregate capital ratios adjusted for risk. This indicator is measured by the ratio of the capital to the group of risk weighted assets. A decrease in this ratio means an increase in the exposure of budget lines to risks and the possibility of a capital adequacy to face these risks.

2.3.4.3. Leverage

It is the dependence of banks on external sources such as loans. This obliges the borrowing bank to pay a fixed financial cost. Leverage relates to

the use of debt to purchase assets. This is done to avoid using too much capital. The debt-to-asset ratio is the formula for calculating leverage. The greater the debt ratio, the greater the leverage is. If a bank is classified as having a high leverage, this means that the debt ratio is greater than ownership. When debts are used in such a way that the resulting return on investment is greater than the interest associated with it, the investor's position is in the proper. However, an excessive amount of leverage is always risky, given that it is possible to fail to use it.

2.3.4.4. Asset structure

Commercial banks direct most of their financial resources to invest in loans and securities, as they are considered the most important areas of investment for the commercial bank. It is by increasing the proportion of resources invested in these assets increases the profitability of the Commercial Bank. The income generated by it is the main source of the bank's revenue, particularly the income generated from the loan. The proportion of resources invested in income generating assets affects the profitability of banks, where profitability increases with increasing this percentage. The bank's decision to invest its resources in loans and financial investments is one of the decisions that depend on several factors, the most important of which is the bank's need for liquidity and the availability of good income-generating investment opportunities.

2.3.4.5. Asset quality

The degree of reliability of capital ratios generally depends on the degree of reliability of asset quality and quality indicators, and insolvency risks in financial institutions mostly come from the quality of assets and the difficulty of their liquidation. Hence, the importance of monitoring the instruments appears that indicate the quality of assets. Asset quality indicators must take into account credit risk involved in budgetary operations such as agencies, mortgages and derivative trading.

2.3.4.6. Financial structure

Deposits are generally considered the main source of commercial bank money. The idea of banks arose based on deposits as a basis for all banking activities. Accordingly, the idea of financial leverage in commercial banks is mainly and substantially based. The deposit system is based mainly on the public's confidence in the banking system, as it provides control systems that attract depositors from the risk of losing their money or being exposed to theft or fire and ensure that they get their money or a reward from them upon request or upon maturity. . Deposits are the only component of the bank's budget that clearly differentiates other types of businesses. Therefore, the ability of the bank's management and its employees to obtain current accounts from business organizations and individuals is an important measure of the extent of customer loyalty to the bank. Deposits represent the raw material for bank loans and investments that aim to achieve profitability.

2.3.4.7. Dividend policy

Earned profits are distributed to the owners of the bank in specific proportions. For the purpose of measuring the efficiency of achieving profits, a comparison has been made between the ratios distributed to the owners and the amounts they invested as equity. Dividend policy is a vital strategic financial decision for a firm and is dependent on a number of considerations in its determination. A number of grounded theories has potential to explain the behaviour of investors towards the dividend policy that a company follow. These theories diverged between supportive and neutral towards the effect of the dividend policy on the value of the company.

2.4. Ground theories

This research attempts to examine several potential determinants of profitability for banks listed in Turkey. There are some ground theories that can theoretically explain the determinants of profitability, including the

signaling theory, agency theory, relative efficiency hypothesis, and trade-off theory.

2.4.1. The Signaling Theory

This theory focuses on increasing the firm's opportunity to obtain capital financing from the market. This is based on the confidence gained by the enterprise from the publication of its financial statements, which appear in a manner that supports the reputation of the enterprise. This creates an impression of confidence among investors and a low level of sense of risk towards the financing of the operations. Moreover, the presence of strong incentives for successful firms to announce the results of their activities increases the competitive pressures between firms. Even firms that do not achieve good results are forced to announce the results of their activities because failure to disclose completely loses confidence in the investors.

Signaling theory claims that firm management increases capital of their firms aiming to delivertypical signals about the future expectations to befavourable (Connelly et al., 2011). So that it is indicated that a reduction in the ratios of financial leverage confirms that performance of the firm is healthiercompare to their competitors who are unable to improve their equity unless they further reduce their profits.

2.4.2. Agency theory

This theory depends on explaining the association between the managers of a business and its shareholders. It helps in identifying the finest private incentives in individuals that emerge as a result of successful business operation and activities. It contributes to reducing costs that might arise due to conflicts of interests between principals and agents (Hoffmann and Rodrigo, 2011). According to this theory, this conflict of interest involves cost which can in turn negatively affects profitability. The agency theory can be identifies as a hypothesis that contributes to the interpretation of relation between agents and principals in a business. The agency theory seeks to

resolve issues that could affect the objectives of a business. Moreover, it aims to solve those issues that could lead to increased level of risk.

The agency's theory is concerned with following the nature of the disputes arising because of the special desires or goals of the agent and the principal. These disputes may be caused by the client not knowing the actions or decisions of the agent. For example, if the CEO of the company sees that it is necessary to participate in commercial activities in various markets by increasing production dependent on raising the costs of production, in order to contribute to obtaining greater profits in the future, whereas shareholders want to grow the current capital rather than paying additional production costs.

2.4.3. Relative efficiency hypothesis

This theory tries to explain the profitability through looking at the size of the firms. Accordingly, it indicates that the larger firms, on the basis of their total assets, are more profitable in comparison with those who are smaller in size. The reason for this claim is that the larger firms tend to have better management and they are more efficient. This greater efficiency is considered rather than of any conspiracy (Clarke, 1986). Moreover, this influence of bank size restricts the perception that great banks can take benefits from economies of scale.

2.4.4. Trade-off theory

The trade-off theory can explain the relationship capital structure firm profitability. Additionally, it presents the idea that a firm selects amount of debt finance and amount of equity finance to invest in the firm through balancing the benefits and costs of debt (Ketyenya and Mwaura, 2017). Accordingly, a firm choose to finance its operations mainly through debt aiming to take advantage of the tax saving benefits of debt.

A significant purpose of the theory is to clarify that firms generally are financed partially with equity and partially with debt. The theory confirms that

there exists a benefit from debt financing which is the tax shield advantage of debt. However, there exists a cost of debt financing which are financial distress costs. The financial distress costs include bankruptcy costs and non-bankruptcy costs of debt. Non-bankruptcy costs are such as bondholder/stockholder infighting, suppliers demanding disadvantageous payment terms, staff leaving, and some other factors .The marginal benefit of more increases in debt reduces with the increase of debt, whereas the marginal cost rises. There fore, a firm that is optimizing its general value is more likely to emphasis on this trade-off when selecting the combination mix of debt and equity to use for the purpose of financing.

2.5. Empirical review

The empirical review of the study was illustrated by detecting differences and similarities of the studies across the various economies. We illustrate and compare several studies from both developing and developed countries.

There are some empirical studies conducted in developing countries examining the factors influencing profitability of banking sector in different countries. Ebenezeret al. (2017) investigates the impact of a number of bank-specific factors on the profitability of 16 commercial banks in Nigeria during the period 2010-2015. Using the annual financial statements, the study collects and analyses a balanced panel data. The results of this empirical investigation show that profitability of banks measured by ROA and ROE is affected by bank-specific factors including liquidity, capital adequacy and efficiency ratio. The authors suggest that banks in Nigeria could expand their profitability by decreasing operating cost, increasing liquidity and capital with conscious work to sustain operational transparency.

Moreover, Obamuyi (2013) investigates the performance of 20 banks in Nigeria 20 over the period 2006 to 2012. Using Fe and RE regression model for a panel data set, the results confirm that bank size, bank capital, interest income, expense management, and the economic condition can positively influence bank performance in Nigeria. The study recommends the

authorities of the banking system to more encourage banks to increase their capital and assets.

Garcia and Guerreiro(2016) examine the profitability of 27 banks in Portugal over the period 2002- 2011. This study uses the regression methods of ordinary least square and fixed effect to analyse the data. The authors measure profitability using the proxies of ROA, ROE and NIM. The results claim that the selected variables such as financial crisis and corporate governance significantly influence profitability.

Anbar and Alper (2011) examine the profitability of banks in Turkey during 2002-2010 using several bank-specific and macroeconomic factors. The study measures banks profitability according to the ratios of ROA and ROE. With regard to the bank-specific factors, the results of regression analysis state that banks size, non-interest income, loans under follow-up, credit portfolio size can significantly influence the profitability of banks in Turkey. Regarding the macroeconomic factors, real interest rate could also have impact on profitability. The study recommends the banks in Turkey to increase their total assets invested in their financial operations and decrease their credit to assets ratio in order to enhance their profitability.

Considering the commercial banks in Jordan, Khrawish (2011) accessed the profitability determinants for the period 2000-2010. Both internal and external factors are studies in this research. The results of data analysis in this study claim that bank size at total assets, the ratio of total equity to total assets and the ratio total liabilities to total assets could significantly affect the profitability ratio on Jordanian banks measured as return on assets. The results show that the impact of all these variables on ROA is positive.

Olweny and Shipho (2011) assessed the impacts of several bank-specific factors on the profitability. The sample of this study consists of 38 commercial banks in in Kenya and their financial data was collected over the period 2002- 2008. The results of multiple regression analysis suggest that capital size, operational cost, asset quality, employs revenue diversification strategies, the amount of liquid assets and the rate of nonperforming loans

are the key factors that could influence the profitability of commercial banks in Kenya.

Rahman et al. (2015) investigate the determinate of banks profitability for25 commercial banks in Bangladesh during 2006- 2013. Considering ROA, ROE and NIM as measures of profitability, the results claim capital strength, cost efficiency, loan intensity and off-balance sheet activities can significantly affect the three different measure of profitability.

Moreover, the factors affecting the profitability of banks have been empirically investigated previously by many studies, particularly in the developed countries.

Petria et al. (2015) investigate some potential determinants of profitability for banks in EU27 during the financial periods 2004-2011. This study considers two groups of factors that can drive bank profitability: external factors of industry-specific and macroeconomic variables and internal factors of bank-specific variables. The authors measure banks profitability on the basis of proxies such as the return on average equity (ROAE) and the return on average assets (ROAA). The results for the empirical results from this research confirm that there are several factors could determine the banks' profitability including liquidity and credit risk, the diversification of business, the market competition/ concentration, management efficiency and the economic growth. These factors can influence both used measures of profitability ;ROAE and ROAA. They additionally add that the impact of competition on bank profitability in EU27 is positive.

Similarly, Capraru and Ihnatov(2015) examine determinants of profitability bank in EU15 during 2001-2011. In addition to the proxies of ROAA and ROAE, this study uses net interest margin (NIM) to measure banks profitability .Using a dummy variable, the study examines the impact of the first and the major movement of expansion on EU15 bank profitability. Consistent with the study conducted by Petria et al. (2015), this study splits the factors affecting banks profitability into internal and external variables. The results of the study claim that credit risk, market concentration cost to income ratio, bank liquidity and banks size could influence the profitability of

banks in EU15. This study recommends the authorities to better control liquidity and credit risk with a competitive banking environment needs to be maintained.

Menicucci and Paolucci(2016) aim at examining the association between profitability of banks and some bank-specific factors in European banking sector. Using a regression analysis for an unbalanced panel data set for 35 largest banks in Europe, the study investigates the relationship for the period 2009-2013. The results of this study state banks size, deposit ratio, loan ratio, capital ratio, loan loss provisions are among the significant factors which could determine banks profitability in Europe. Since the performance of those European banks relies on efficiency, competitiveness and profitability, the study suggests banks regulatory authorities to sustain and intensify robustness and constancy of the banking sector.

Using data of commercial banks in seven countries in Latin American, Saona (2016) conducted an empirical study examining the bank-specific factors affecting profitability ratios. This study uses the generalized method of moments (GMM) to analyse the data collected for the period 1995-2012. The regression results suggest that factors such as capital ratio, asset diversification, revenue diversification, improvements in the legal and regulatory system and market concentration can affect profitability but with different type of effect.

At hanasoglou et al., (2005) examines the profitability of banks using bank-specific, industry-related and macroeconomic determinants. The study sample is an unbalanced panel data set which is taken from credit firms in South Eastern European over the period 1998-2002. Using FE and RE models, the results of this study emphasise that banks size could not influence banks profitability. However, some other bank-specific factors have significant influence.

The above literature review revealed the uniformity of some of the bank-specific variables such as bank size, capital adequacy, leverage, in determining the profitability of banks through different countries world wide.

Moreover, we observed that ROA and ROE were the most common criteria used by authors in the literature to measure profitability.

2.6. Conclusion

In this chapter, the theoretical literature is highlighted in the section 1 to 3. The concepts related to profitability and its sources were discussed in addition to the most important factors affecting it. From it we can say that profitability is the policy of reaching goals. In spite of the different types, we find that they flow into one concept, measuring the bank's effectiveness and efficiency. Likewise, profitability ratios are linked to the bank and everyone who has a relationship with the bank. It is the duty of bank to control all factors that could affect its profitability. Section 4 shows and discusses the ground theories about the factors affecting profitability. Section 5 was centred on the most important previous studies that are related to the subject of the study. And through which a review of the most important aspects of these studies represented in the aim of the study as well as mentioning the most important results reached. Finally, a literature gap was identified based on the review of the previous empirical studies.

CHAPTER 3

METHODOLOGY

The content of this chapter is divided to several sections. Section 3.1 defines the study sample and the method of data collection. Section 3.2 provides an overview on the sample study. Section 3.3 identifies the research variables and defines them and accordingly develops their proposed relationships with regard to the variables determining profitability easements. Section 3.4specifies the research models of the study. Lastly, the research method used to investigate the proposed relationships of the study is described and explains in section 3.5.

3.1. Sample and data

In order to achieve the objectives of this research in investigating the profitability determinants of banks in Turkey during the period 1999-2018 by using some statistical techniques, the study is based on the annual financial reports about banks in Turkey, published by the banks themselves, central bank of Turkey and Borsa Istanbul (BIST).

Using the Public Disclosure Platform for Borsa Istanbul (CEIC, 2019), we drew the sample of this study. This study firstly considered the entire banks listed on the stock market of Borsa Istanbul and then the research sample was drawn in regard with a number of criteria. First, banks that are not yet listed on Borsa Istanbul are excluded from our selected sample. Second, this study aims to investigate the determinates of profitability over a long time span of twenty years from 1999 to 2018, and for that reason only those banks are selected whose their financial data and information are available

over the selected period. Third, the central banks of Turkey is eliminated form our sample since the central banks plays more the role of governing the monetary system in the country and it controls and governs the financial rules and regulations for the other banks. The reason for selecting that period is to provide valuable and more reliable results about the factors determining of profitability by investigating a long period of time since previous studies cover relatively shorter periods (see for instance, Alshatti, 2016; Petria et al., 2015).

Out of 53 banks listed on Borsa Istanbul in 2019, the final research sample of this study consists of 19 banks including commercial banks and investment banks. As a result, a balanced longitudinal data is generated for this investigation, consistent with Anbar and Alper (2011) and Obamuyi (2013). Annual data was collected form DataStream database and Borsa Istanbul data store (CEIC).As a result, these selection criteria resulted in providing 380bank-year observations of the banks listed on BIST.

3.2. Turkey economy and financial market

3.2.1. An overview of the economy

The economy of Turkey is characterized by growth and development. Until 1920s, Turkey was nearly entirely an agricultural country. Under the guidance and supervision of the Turkish government, the number of factories increased from 118 in 1923 to more than a thousand in 1941. Currently, there are more than 30 thous and manufacturing companies in Turkey. Nevertheless, agriculture sector remained as one of the central economic activities, as it provides employment opportunities for 58 per cent of the total labour force in the country. Nonetheless, the size of agricultural production represents only approximately 20 per cent of the value of all services and goods produced in Turkey. The industry absorbs approximately 11 per cent of the total labour force in the country. However, the returns value of industrial production goes beyond that of agricultural production.

Moreover, Turkey has the means of communication, airports, railways and related public facilities. Similarly, the country controls steel, mining, and forestry, most of the banking and financial services, and nearly 400 thousand hectares of farmland. In the country, private sector holds the ownership of the largest percentage of farms, construction companies and small factories. Since 1963, the country has directed the growth of the national economy through adopting a series of successive five-year plans. The country targets to increase the role of the industrial private sector in the national economy.

After years of declining rates of foreign direct investment, in 2007 Turkey's share in the International Monetary Fund reached $ 21.9 billion, and it is expected that Turkey will achieve greater numbers in the following years. A series of major privatizations, stabilizing the owner of the start of discussions on Turkey's accession to the European Union, stable and strong growth, structural changes in the telecommunications, retail and banking sectors all contributed to the increase in foreign investment (IMF, 2017).

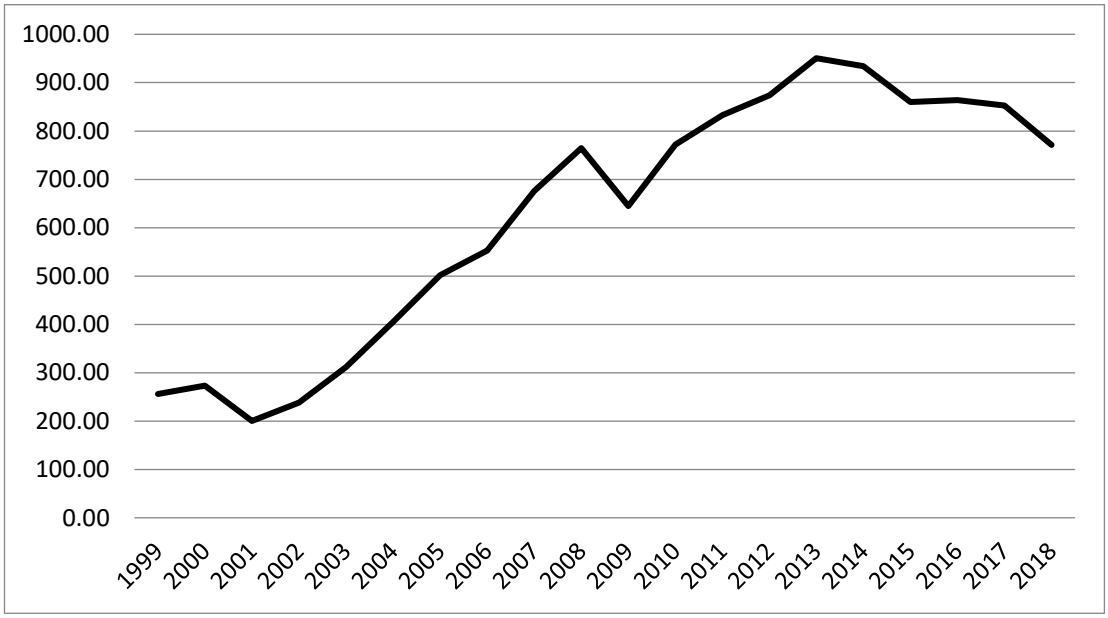

Figure 3.1: GDP (In billions of current US dollar)

Source: The world Bank (2019)

Figure 3.1 shows that Turkey economy has seen a dramatic growth over the past years from 1999 to 2014 before it starts to a gradual decrease. The figure presents GDP of Turkey in billions of current US dollar.

3.2.2. An overview of the financial market

Turkish stock market was originally founded in the name of the Ottoman Stock Exchange in 1866. It was reorganized into its current structure at the beginning of 1986. Currently, Istanbul Stock Exchange (ISE) is the only stock market in Turkey. During the 19th and early 20th centuries, Bank Street in Istanbul was the centre of the Ottoman Empire, where it was the main centre of the Ottoman Central Bank (it was established in the name of the Ottoman Bank in 1856, and later it was restructured to become an Ottoman Shahani Bank in 1863) and the Ottoman Stock Exchange (1866). Bank Street continued to be Istanbul's core financial area until the 1990s,by the time banks in Turkey started to settle their headquarters in the central business districts of Levant and Maslak. Istanbul Stock Exchange moved to its current building in it stiny neighbourhood in 1995. Moreover, Istanbul Gold Exchange was established in 1995. The capital market exchange, on which Turkish companies are listed, was worth $ 171,765,000,000 in 2016, according to the CEIC (2018). The ISE is today called Borsa Istanbul.

Since 2003, the rate of inflation has decreased to single digits, and the economy showed an average growth of 7.8 per cent between 2002 and 2005. The fiscal deficit (albeit in small amounts) is settled from the privatization of major industries. Exchange became under pressure that started in October 2008 after Turkish exchange authorities warned state banks against withdrawing loans from the greater institutions of financial sectors.

In recent years, chronic high rate of inflation has been taken into control and this has resulted in the introduction of a new currency, the “New Turkish Lira”, on January 1, 2005, to support economic reforms and erase scenes of the unstable economy. On January 1, 2009, the name "New Turkish Lira" was changed to "Turkish Lira", with the launch of new banknotes and currencies (Trading Economics, 2018).

On June 28, 2019, Qatar withdrew investments of $ 4.6 billion from the Istanbul Stock Exchange, in the first five months of this year, according to the

Turkish Central Depository of Securities. On the other hand, the Turkish banking authorities agreed today that Emirates Bank would acquire Turkish Deniz Bank for approximately $ 3.2 billion, which it had bought from Sber bank, the largest Russian bank.

In the middle of 1980s, ISE began to emerge in Turkey. In spite of all the developments in the country and the market, the listed companies worked under a remarkably different regulatory setting till early 2000s. Then, the stock market is united with the Istanbul Gold Exchange and the Turkish Derivatives Exchange. They, then, together formed Borsa Istanbul, which is denoted by BIST. The shares of this market are owned by the local government by 49 per cent. Borsa Istanbul is currently the lone exchange market throughout the country. Consequently, it characterizes the complete financial market size for Turkey. The financial industry in Turkey has rapidly grown with regard to asset size over the last decade, according to the Turkey financial services report (2019). Figure 3.2 presents assets size of financial sector in Turkey in billions of Turkish Lira.

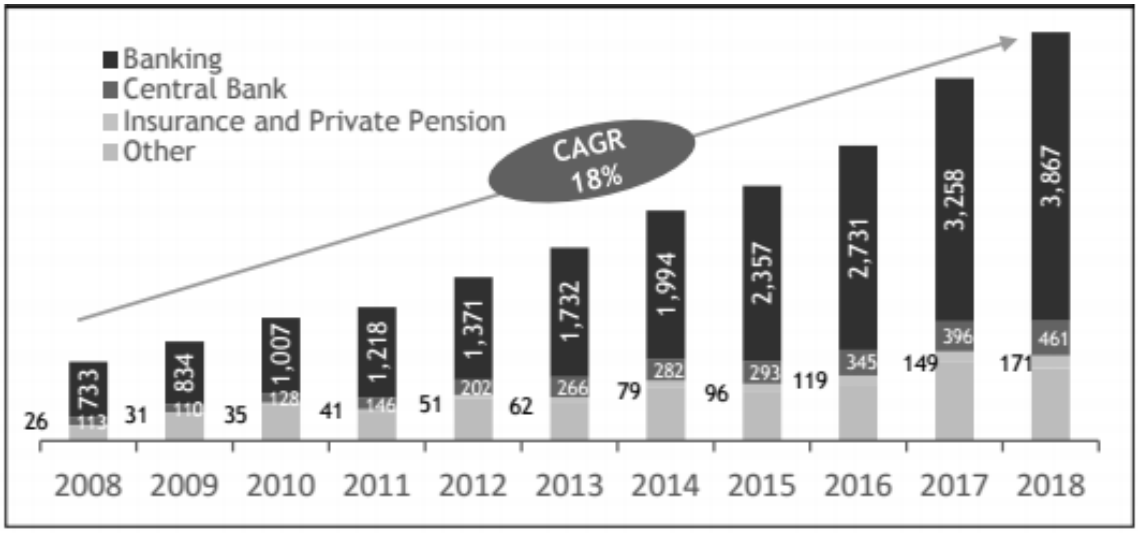

Figure 3.2: Asset size of Turkey's financial industry

Source: Turkey Financial Services (2019)

It seems that financial services in Turkey deliver significant opportunities to boost growth in Turkey. The regulatory changes and structural renewal applied by the government of Turkey over the past two decades brought about enhancement to financial sector which supported the country during global financial and economic crisis in 2009.These modification sled to development of investor confidence. As a result, it caused the investment in the country to increase in the financial sector by more than $50 billion over the past fifteen years. The Turkish financial industry is largely (around 70 per cent) is dominated by services of banking, as it is clearly observed from figure 3.2. Nevertheless, there are significant developments of insurance services and other financial activities over the same period alongside the banking services. Currently, there are fifty three (53) banks operating in Turkey with $550 billion in 2018 (see table 3.1 for more details).

3.2.3 Turkish banking sector

The Central Bank of the Republic of Turkey (TürkiyeCumhuriyetMerkezBankası) was established in 1930, as a private joint stock firm. The bank has the only right to issue banknotes. Moreover, it has there sponsibility to supply the monetary necessities of the commercial and agricultural bodies of the state. The total foreign exchange transfers are monopolized by the Central Bank of Turkey.

In the late of 1990s, there were 72 banks operating in Turkey. In late 2000 and early 2001, the increasing trade deficit and the growing weakness of the banking sector leaped the economy of the country into crisis. Furthermore, there was a depression followed by a pound float. This financial breakdown has reduced the number of banks in the country to only 31 banks, have of the size in late of 1990s. Presently, more than 34 per cent of the assets are concentrated in Ziraat Bank, YapiKredi Bank, Garanti Bank, Turkey IS Bank and AK Bank and Halk Bank. The five major government-owned banks were restructured in 2001. Political participation was reduced and lending policies changed. There are also branches in Turkey for many foreign banks. There

are a number of Arab commercial banks in Turkey, which engage in Islamic banking.

Turkish regulatory authority has made several main changes regarding financial rules and regulations over the past two decades(see figure 3.3). Such changes include the issuance of guideline on measurement and evaluation of banks' capital adequacy, banking Act, Law No. 5411, record profitability of the banking sector and compliance with the IMF and the IFRS. These changes could encourage studies to investigate related issues that might have been affected. Therefore, this study tries to examine the determinant factors affecting profitability of banks in Turkey over those two decades of large financial regulation changes which are argued to effect the growth in financial sector in general and the banking sector in particular.

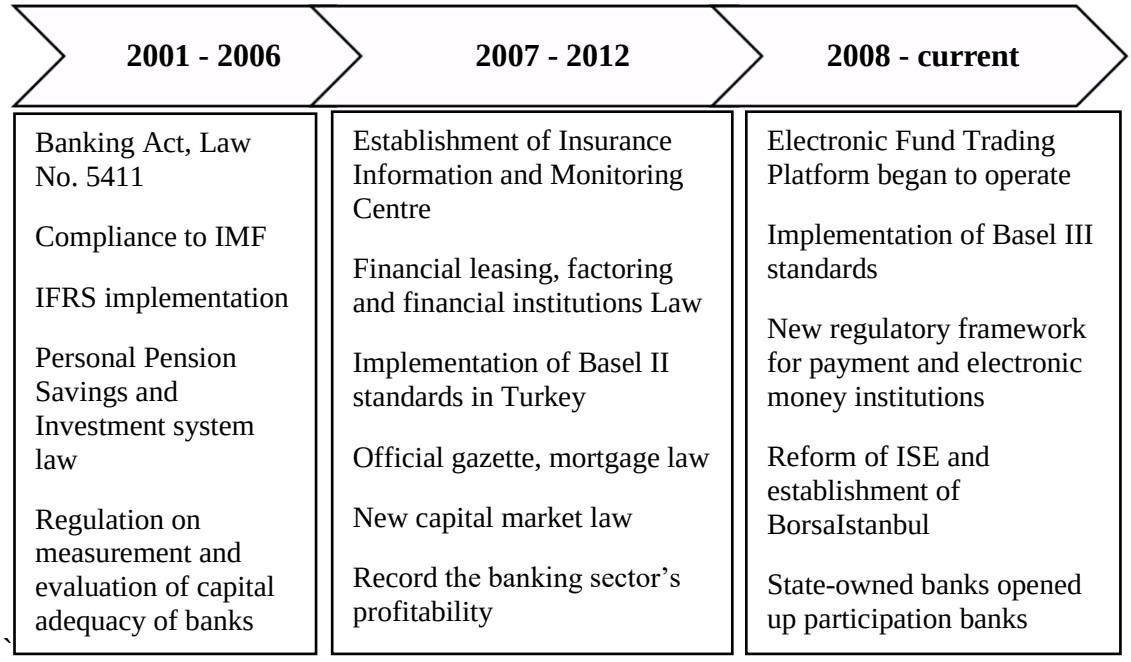

Figure 3.3: regulation changes in Turkish financial sector

Source: Rasul (2019)

Figure 3.4demonstratesthe domination percentages of banking sector by the different types of banks operating in Turkey. Banking sector can be divided over participation banks, development and investment banks and deposit

banks. As the information from figure 3.4 shows, deposit bank controls 65% of the whole banking sector services in Turkey.

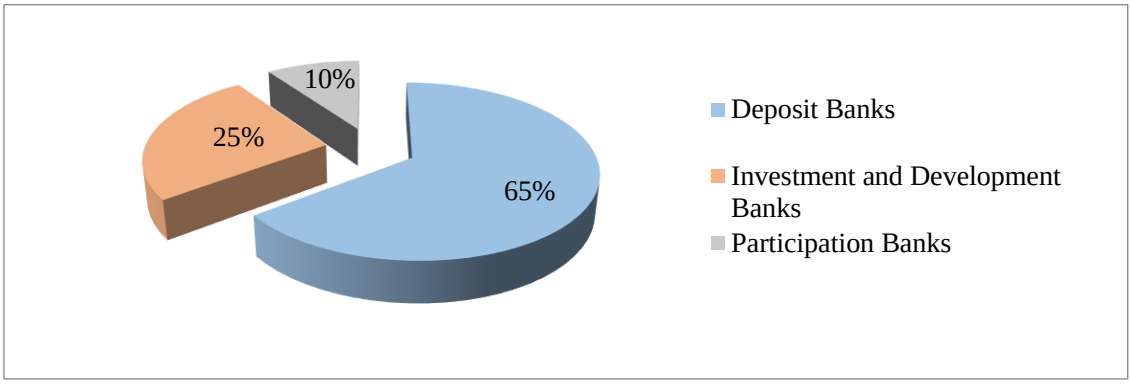

Figure 3.4:Turkish banking sector distribution

Source: Turkey Financial Services (2019)

Out of the 53 banks in Turkey, 21 of them considerably hold foreign investment by around 30 per cent. This factor can identify some aspects such as profitability very important to both management and shareholders. Since shareholders and investors of different financial experiences have a tendency to possess dissimilar standpoints with regard to financial policies and analysis. The largest banks operating in Turkey in accordance to their book value of total assets are the banks ofZirrat, Turkiye IS, Garanti, Ak and Halk. Together, these largest five banks capitali zearound 50% of the entire assets of the whole Turkish banking sector (see figure 3.5).

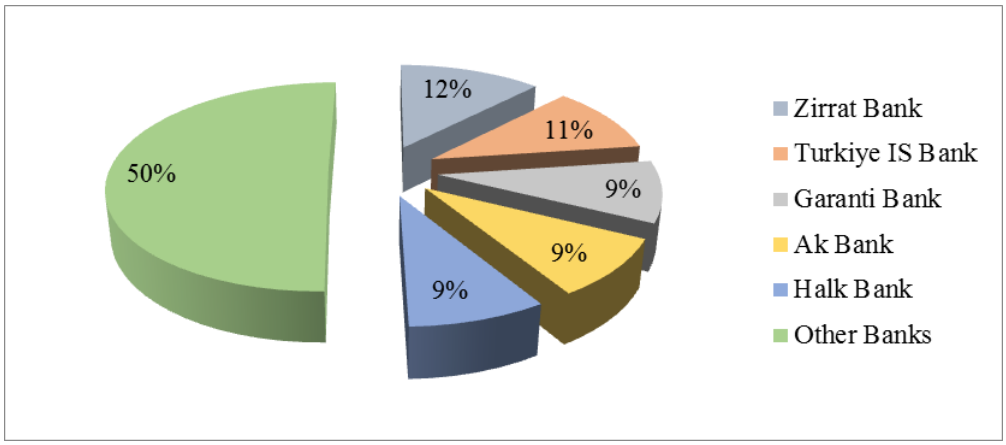

Figure 3.5: Total assets size of banking sector in Turkey

Source: Turkey Financial Services (2019)

TABLE 3.1: Banks operating in Turkey

No.	Bank Name	Bank Category	Rating	Total Assets	TA last growth
1	ADABANK A.S.	Banks under management of SDIF	4	55.43 mln	8.36%
2	AKBANK T.A.S	Private Commercial Banks	n/a	327.64 bln	3.67%
3	AKTIS YATIRIM BANKASI A.S	Private Investment Banks	2.8	13,516.74 mln	21.71%
4	ALBARAKA TURK KATILIM BANKASI A. S	Participation Banks	4.0	n/a	
5	ALTERNATIFBANK A.S	Foreign Commercial Banks	4.0	24,297.94 mln	25.67%
6	ANADOLUBANK A.S	Private Commercial Banks	5.0	14,263.00 mln	-5.61%
7	ARAP TURK BANKASI A.S	Foreign Commercial Banks	3.6	5,995.08 mln	18.39%
8	BANK MELLAT	Branches of Foreign Banks	3.9	991.75 mln	-2.06%
9	BANK OF CHINA TURKEY A.S (new)	Foreign Commercial Banks	3.0	1,291.80 mln	
10	BANKPOZITIF KREDI VE KALKINMA BANKASI A.S	Foreign Investment Banks	1.0	969.90 mln	-31.86%
11	BIRLESIK FON BANKASI A.S	Banks under management of SDIF	4.7	3,162.50 mln	20.32%
12	BURGAN BANK A.S	Foreign Commercial Banks	3.3	19,581.40 mln	16.51%
13	Central bank of the republic of turkey	Central banks	3.6	n/a	

14	CITIBANK A.S	Foreign Commercial Banks	3.0	10,057.33 mln	18.58%
15	DENIZBANK A.S	Foreign Commercial Banks	2.8	137.66 bln	13.72%
16	DEUTSCHE BANK A.S	Foreign Commercial Banks	2.8	2,662.33 mln	-12.48%
17	DILER YATIRIM BANKASI A.S	Private Investment Banks	5.0	160.50 mln	3.85%
18	FIBABANKA A.S	Private Commercial Banks	1.0	20,618.27 mln	2.50%
19	GSD YATIRIM BANKASI A.S	Private Investment Banks	n/a	298.13 mln	0.14%
20	HABIB BANK LIMITED	Branches of Foreign Banks	5.0	204.35 mln	12.49%
21	HSBS BANK A.S	Foreign Commercial Banks	5.0	32,811.34 mln	33.23%
22	ICBC TURKEY BANK A.S	Foreign Commercial Banks	n/a	15,519.19 mln	20.42%
23	ILLER BANKSI A.S	Public Investment Banks	n/a	32,220.92 mln	28.94%
24	ING BANK A.S	Foreign Commercial Banks	n/a	58,518.66 mln	10.66%
25	INTESA SANPAOLO S.P.A	Branches of Foreign Banks	n/a	12,044.54 mln	13.75%
26	ISTANBUL TAKAS VE SAKLAMA BANKASI A.S	Public Investment Banks	5.0	11,795.18 mln	11.65%
27	JP MORGAN CHASE BANK NATIONAL ASSOCIATION	Branches of Foreign Banks	4.0	528.81 mln	3.29%
28	KUVEYT TURK KATILIM BANKASI A.S	Participation Banks	4.2	n/a	

29	MERRILL LYNCH YATIRIM BANK A.S	Foreign Investment Banks	3.0	479.36 mln	14.59%
30	MUFG BANK TURKEY A.S	Foreign Commercial Banks	n/a	15,709.51 mln	61.43%
31	NUROL YATIRIM BANKASI A.S	Private Investment Banks	n/a	2,697.57 mln	58.64%
32	ODEA BANK A.S	Foreign Commercial Banks	2.5	31,400.62 mln	-5.15%
33	PASHA YATIRIM BANKASI A.S	Foreign Investment Banks	n/a	1,349.57 mln	50.48%
34	QNB FINANSBANK A.S	Foreign Commercial Banks	3.6	157.42 bln	25.07%
35	RABOBANK A.S	Foreign Commercial Banks	n/a	1,819.64 mln	28.30%
36	SEKERBANK T.A.S	Private Commercial Banks	3.6	31,321.32 mln	-0.08%
37	SOCIETE GENERALE S.A	Branches of Foreign Banks	n/a	761.67 mln	59.27%
38	STANDARD CHARTERED YATIRIM BANKASI TURK A.S	Foreign Investment Banks	n/a	90.80 mln	8.49%
39	T.C ZIRAAT BANKASI A.S	Public Commercial Banks	2.9	537.16 bln	23.69%
40	TURK EKONOMI BANKASI A.S	Private Commercial Banks	3.0	96,997.16 mln	13.11%
41	TURKISH BANK A.S	Private Commercial Banks	4.5	1,542.44 mln	-1.64%
42	TURKIYE FINANS KATILIM BANKASI A.S	Participation Banks	n/a	n/a	
43	TURKIYE GARANTI BANKASI A.S	Foreign Commercial Banks	3.5	359.48 bln	10.53%

44	TURKIYE HALK BANKASI	Public Commercial Banks	5.0	378.42 bln	23.93%
45	TURKIYE IHRACAT KREDI BANKASI	Public Investment Banks	4.7	139.43 bln	63.31%
46	TURKIYE IS BANKASI	Private Commercial Banks	3.2	416.39 bln	14.91%
47	TURKIYE KALKINMA BANKASI	Public Investment Banks	4.5	15,714.81 mln	74.94%
48	TURKIYE SINAI KALKINMA BANKASI	Private Investment Banks	4.0	38,298.11 mln	32.47%
49	TURKIYE VAKIFLAR BANKASI T.A.O	Public Commercial Banks	n/a	331.36 bln	22.46%
50	TURKLAND BANK A.S	Foreign Commercial Banks	3.0	3,624.39 mln	-25.66%
51	VAKIF KATILIM BANKASI A.S	Public Participation Banks	1.0	n/a	
52	YAPI VE KREDI BANKASI A.S	Private Commercial Banks	2.9	348.04 bln	16.87%
53	ZIRAAT KATILIM BANKASI A.S	Public Participation Banks	3.9	n/a	

3.3. Variable construction and Research model

3.3.1 Dependent variables

Profitability ratios are the dependent variable of this study. The profitability index is an essential goal for all banks and is essential for its survival and sustainability and an objective that investors aspire to. The index is of interest to creditors when dealing with the bank, and it is also an important tool for measuring management efficiency in using available resources. Garcia and Guerreiro (2016) define them as ratios that give indicators of the bank's ability to generate income from the resources available to it. The profitability index is the measure of a company's investment, operating, and financing management policies and decisions. It reflects the overall performance of the company, unifies the effect of most management decisions and it examines the firm’s capability to generate profits from sales, assets and equity (Li, 2007). Therefore, the profitability ratios are one of the most difficult directions for the bank as a concept and measurement, because there is no integrated method that determines when the bank is in a profitable position, as many investment opportunities include sacrificing the current profit in order to obtain greater profit in the future. For example, the new service requires high administrative costs, which initially creates a low profit, so the current profit becomes weak, but this may mean higher levels of profitability in the future. The most commonly use dratios of profitability in the literature are ROA and ROE.

- ***Return on assets (ROA):***

It is a financial indicator that reveals the bank’s ability to achieve profits by investing in its assets. It depends to a large extent on the amount of profits realized from these assets and is also called return on investment because it is a measure of the profitability of all the bank's short and long-term investments (Jabbar, 2014). It also reflects the efficiency and effectiveness of management in operating the assets and gives confidence in managing the funds and the integrity of investment and operational decisions

taken(Kosmidou, 2008). This indicator is calculated by dividing the net profit into total assets. ROA is calculated through the following equation:

$$\text{Return on Aseets} = \frac{Net\ Income}{Total\ Assets} * 100$$

- ***Return on Equity (ROE):***

This indicator receives a lot of interest from the bank's management, as it measures the extent to which the banks seek to achieve the rate of return on the funds invested by the owners, which is the criterion for maximizing their wealth. Moreover, it is a specific indicator of growth and development. On the other hand, this high percentage indicates the efficiency of the bank's management (Lombardo and Pagano, 2006; Obamuyi, 2013). At the same time, it indicates the high risk resulting from the increase in the leverage (the bank's degree of borrowing dependence), and its decline indicates the bank's conservative financing of loans, measured by applying the following formula:

$$\text{Return on Equity} = \frac{Net\ Income}{Total\ Equity} * 100$$

- ***Earnings per Share (EPS):***

EPS is a common measure used to analyse a firm's profitability and evaluate its performance, as it is employed to compare that with the firm itself over sequential periods of time. Furthermore, analysts utilise the ratio of earnings per share to compare the firm's profitability and performance with comparable firms operating in the same sector during the same fiscal period.

The earnings per share are calculated and displayed for companies whose shares are offered for public subscription and trading in the financial market or that are planning to offer shares for public subscription. Earnings per

share generally represent the average common share of a company's net profit from continuing activity after interest and taxes. Earnings per share is extracted by dividing the company's net profits from the continuing activity after subtracting all expenses, including interest, taxes, minority share of the profits, and preference shares from the profits by the number of ordinary shares issued and traded by the company (Kumar and Venoor, 2018). EPS is calculated through the following equation:

$$\text{Earnings per share} = \frac{Net\ Income - Preferred\ Dividends}{Common\ shares\ outstanding}$$

3.3.2 Independent variables

Through reviewing a number of literatures, it was observed that researchers identified several common determinants which could affect banks' profitability. There are internal factors that the bank can control them since they have potential to influence its profitability. Summarizing the outcomes from several empirical studies, bank specific financial ratios representing financial leverage, capital adequacy, cost efficiency, asset structure, asset quality, and bank size are commonly studied internal variables. There fore, this current study included the following bank-specific factors in order to capture the determinants of profitability of banks listed in Turkey:

- ***Bank size***

The size of the bank is usually measured by the amount of assets the bank owns or the amount of ownership it owns (Kumar andKaur, 2016). The larger the size of the bank measured by the assets leads to a decrease in the rate of return on the assets. This rate is large in small banks, compared to large banks, but it is noted that the volume of deposits in large banks is greater than small banks. This means that the degree of leverage is greater which can increase the rate of return on shareholders' equity. Then, that increasing

the size of the assets of commercial banks increases their ability to invest, it is always expected that increasing the assets of the bank will lead to an increase in their profitability, according to the relative efficiency hypothesis. In the case of measuring the size of the bank with its ownership rights (paid up capital, reserves, and profits not distributed), we find that the banks have significant ownership rights. The funds available to it are greater and its ability to invest these funds is wider, and increasing ownership rights increases the confidence of its customers, which may be reflected in the size of customer deposits with them and thus increase the leverage that in turn maximizes the rate of return on equity (Dogan, 2013; Petria et al., 2015).

- ***Capital adequacy***

The ratio of equity to total assets is commonly used in the literature to measure capital strength. This ratio is likely to have a negative relationship with the need for external fun and therefore it results in increase profitability of the banks (Gueyie et al., 2019). The concept of capital adequacy describes the association between the sources of funds in a bank and the risks associated to them. Capital adequacy is considered as one of the most vital tools used to identify the solvency of a bank and the ability to withstand possible losses or liquidation. Where the lower the probability of the bank's insolvency, the higher its financial solvency accordingly, and vice versa from that is true. The higher the probability of the bank's insolvency, the lower is its solvency (Posner, 2015).

- ***Leverage***

There are several common ratios used in the literature to present financial leverage including total liabilities to total debt ratio, long-term debt ratio, short-term debt ratio, equity multiplier. Following Abubakar (2015), this study uses total debt ratio which is calculated through total liabilities to total assets. This ratio is likely to have positive impact on profitability because banks avoid high taxation through high borrowing (Afolabi et al., 2019). In other

words, banks tend to rely on external fund particularly on debt to fund their sources in order to take advantage of tax shield. Thus, the higher the total debt ratio, the higher is the profitability of the banks.

- ***Asset structure***

This study investigates the impact of asset structure on the profitability of banks. We measure asset structure by total loans to total assets, following Umbarwati and Fachrurrozie (2018). Firm asset structure plays an important role in determining the financial structure of the company. The high value of tangible assets gives a signal for a high value of assets of the firm as price of filtering. Firms with large investment in tangible assets have a higher debt ratio than firms that do not use tangible assets. Moreover, firms with high level of tangible assets would have higher opportunity to borrow with lower rate of interest because the tangible assets are seen as guarantee for repay the debt.

- ***Asset Quality***

Total loans to total assets ratio is used in this study to present the asset quality, following Sunet al. (2017). The ratio of asset quality is likely to positively influence the profitability of the bank because loan isconsidered asone of the key source of banks' income. This is true unless a bank burdens an intolerable amount of risk. In general, the degree of reliability of capital ratios depends on the degree of reliability of asset quality and quality indicators. The insolvency risks in financial institutions mostly come from the quality of assets and the difficulty in liquidating them, hence the importance of monitoring indicators that indicate the quality of assets. Asset quality indicators must take into account credit risk involved in budgetary operations such as agencies, mortgages and derivative trading (Kadioglu et al., 2017).

- ***Financial structure***

To capture the influence of financial structure on profitability of banks, this study used the ratio of total deposits to total liabilities, consistent with Molinari et al. (2017).The issue of financing structure is one of the important topics in the field of financial management, which has gained importance through its impact and its link with the objectives of financial management related to maximizing profit and maximizing the wealth of owners, which is the goal that most companies seek to achieve. Any increase in the level of debt causes an increase in bankruptcy, financial problems, and agency costs. Thus, profitability and the value of the company decrease. Therefore, it is possible to determine an optimal capital structure through a balance between tax benefits, bankruptcy costs and financial crises.

Safe companies with tangible assets and tax savings have high target ratios to a certain extent. As for the companies that are exposed to risk, and their assets are intangible, their initial financing is from the right of ownership. There are a lot of profitable companies that prefer little debt. However, according to the expectations of the trade-off theory as companies with high profits, their borrowing capacity is high, and they have large tax savings, so the debt ratio should be high(KetyenyaandMwaura, 2017).

- ***Dividend policy***

Dividend payout ratio is also one of the factors studied in the literature to have influence on profitability (Sattar et al., 2017). Based on the agency theory dividend payout ratio can affect profitability since less cash available for managers would pressure them to invest in high profitable investment and projects. On the other hand, when there is excess cash in the firm, agents invest in low and negative net present value projects. Thus, profitability of those firms would decline. This all can be explicated through the agency theory which explains the conflict of interest between shareholders and managers (Yusuf, 2018).

TABLE 3.2: research variables and their measures

	Variables	Description	Measurement
Dependent variables	Return on assets	The extent of a bank recognises profits by well using of its assets.	Net income to total assets
	Return on equity	Measures the success of a business in realizing satisfactory return on capital invested.	Net income to capital employed
	Earnings per share	Measures the financial performance of a firm towards a single share	Net income to average outstanding shares
Independent variables	Bank size	Total assets as a proxy for bank size	Logarithm of book value of total assets
	Capital adequacy	Is a measure of the amount of bank core capital to the risk-weighted asset	Capital funds to risk weighted assets
	Leverage	The extent abank relies on debt more than equity in financing itsassets.	Total liabilities to total assets
	Asset structure	The relative magnitudes of balance sheet items	Total loansover total assets
	Asset quality	The credit risk associated with assets	The provision of loan loss to net loans
	Financial structure	The way a bank finances its operations by using sources of debt and equity.	Total depositsof customers to total liabilities
	Dividend policy	The distributed portion of profit to the owners	Cash dividend per share

Table 3.2 presents a summary of the variables used in this study. Their descriptions are also provided with the equation to calculate them.

Figure 3.6 illustrates the conceptual framework of this study. The explanatory variables are identified. The grey arrows show the direction of impact from those variables to the dependent variable which is profitability of banks in Turkey. Profitability is measured using three common ratios of ROA, ROE and EPS.

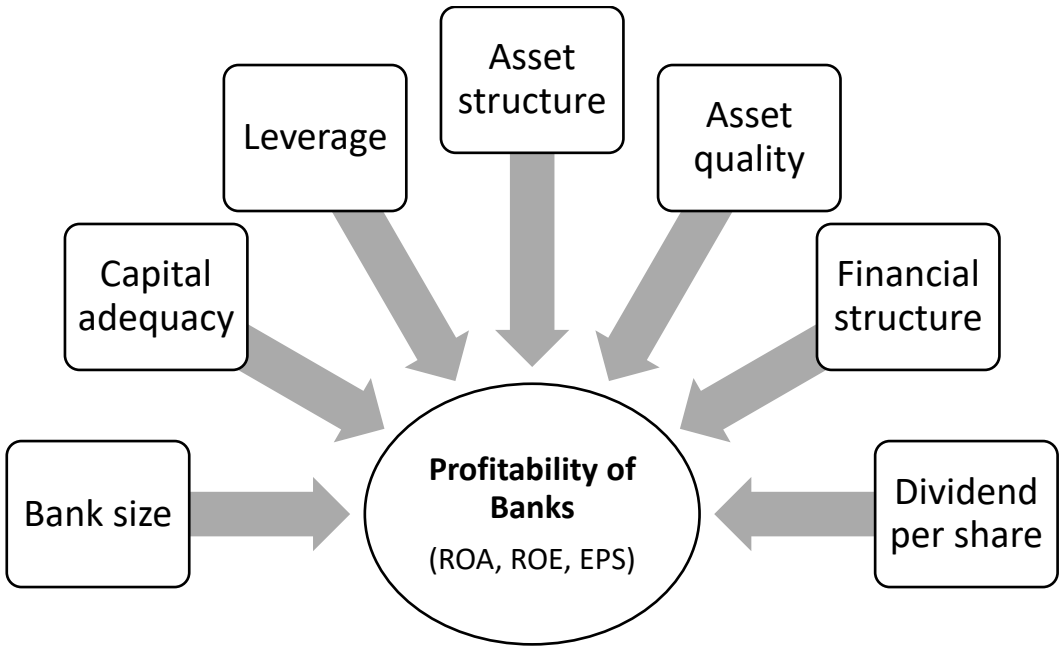

Figure 3.6: conceptual framewotk

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3.4. Research model

To examine the determinants of the profitability of the listed banks in Turkey, the above variables (table 3.2) included in this study, three of them were the dependent and the others were as independent variables. Based on the defined variables, we can build and specify our research model according to the following models:

$$\boldsymbol{PROF = f(Xs)} \qquad \textbf{(3.1)}$$

PROF is the profitability of the banks listed on Borsa Istanbul;we measure profitability by return on assets (ROA), return on equity (ROE) and earnings per share (EPS); these variables are seperately the function of a number of variables (denoted as Xs);Xs are several firm-specific variables including bank size, capital adequacy, leverage, asset structure, asset quality, financial structure and dividend payout ratio. Thus, equation 3.1 can be written as follow:

$$\boldsymbol{PROF = f(SIZ, CA, LEV, AS, AQ\ , FS, DIV)} \qquad \textbf{(3.2)}$$

SIZ is bank size measured by the logarithm of total assets, **CA** is capital adequacy measured by capital funds to risk weighted assets, **LEV** is financial leverage measured by the ratio of total liabilities to total assets, **AS** is asset structure measured by total loans to total assets ratio, **AQ** is asset quality measured by the ratio of loan loss provisions to net loans, **FS** is financial structure measured by customer deposits to total liabilities ratio, and **DIV** is dividend payout ratio to measure dividend policy of banks measured by cash dividend per share.

The model, then, can be presented in an econometrics form in order to control for the coefficients of each explanatory variables used in the study. In

doing so, we can also control for potential omitted variables in the model. The model is as follows:

$$PROF_{it} = \beta_0 + \beta_1 lnSIZ_{it} + \beta_2 CA_{it} + \beta_3 LEV_{it} + \beta_4 AS_{it} + \beta_5 AQ_{it} + \beta_6 FS_{it} + \beta_7 DIV_{it} + \varepsilon_{it} \quad \textbf{(3.3)}$$

$\beta_0$is the constant in the multivariate regression model;β_1-$\beta_7$are the coefficients of the explanatory variables which shows their level of impact on the dependent variable; itshows that our data is panel which represents different bank (i) at different point of time (t). εisthe stochastic error in the model.

We measure profitability by using three variables which are return on assets (ROA), return on equity (ROE) and earnings per share (EPS). Therefore, this study runes regression for the following three research models to examine the banks' profitability determinants:

$$ROA_{it} = \beta_0 + \beta_1 lnSIZ_{it} + \beta_2 CA_{it} + \beta_3 LEV_{it} + \beta_4 AS_{it} + \beta_5 AQ_{it} + \beta_6 FS_{it} + \beta_7 DIV_{it} + \varepsilon_{it} \quad \textbf{(3.4)}$$

$$ROE_{it} = \beta_0 + \beta_1 lnSIZ_{it} + \beta_2 CA_{it} + \beta_3 LEV_{it} + \beta_4 AS_{it} + \beta_5 AQ_{it} + \beta_6 FS_{it} + \beta_7 DIV_{it} + \varepsilon_{it} \quad \textbf{(3.5)}$$

$$EPS_{it} = \beta_0 + \beta_1 lnSIZ_{it} + \beta_2 CA_{it} + \beta_3 LEV_{it} + \beta_4 AS_{it} + \beta_5 AQ_{it} + \beta_6 FS_{it} + \beta_7 DIV_{it} + \varepsilon_{it} \quad \textbf{(3.6)}$$

Equation 3.4 examines the determinants of the profitability by using ROA whereas equation 3.5 examines the determinants of the banks' profitability by using ROE. Furthermore, equation 3.6 examines the determinants of the banks' profitability by using EPS. The three measure of ROA, ROE and EPS measure profitability of banks in Turkey from different perspectives.

3.5. Research design

This study uses an explanatory research design to investigate the variables that can determine profitability of banks listed on Borsa Istanbul.Explanatory approach of research is suitable to examine the relationships that involve a number of variables (Brymanand Bell, 2015). In addition, this technique could be employed for issues that have not been clearly defined (Saunders et al., 2009). With regard to data, panel research design is implemented and with a use of a number of practical variables simultaneously. Descriptive statistics are used to show the patterns in the variables. Correlation coefficient is utilised to show the associations between the pairs of the variables and to check for the multi collinearity issue.Multiple linear regressions of pooled ordinary least square (OLS), Random-Effect (RE) and Fixed-Effect (FE) are performed to examine the influence of the independent variables on the three dependent measures of profitability. Furthermore, related diagnostic tests will be used.

3.6. Conclusion

This chapter was divided to six sections. Section 3.1 defined the study sample and the method of data collection. Section 3.2 provided an overview on the sample study. Section 3.3 described the research variables and accordingly develops their proposed relationships with regard to the variables determining profitability easements. Section 3.4 specified the research models. Section 3.5 described and explained the research method used to examine the suggested relationships of the research.

CHAPTER 4

DATA ANALYSIS

This chapter presents the analysis of the sample data of this study according to different used tests in order to identify the nature and pattern of the data and variables separately, to examine the potential relationships among the employed variables and to recognize the directions of relationships and level of impacts form the selected bank-specific characteristics to the profitability ratios of those banks. Section 1 demonstrates an overview to the measures of bank profitability and several chosen explanatory variables at the level of bank via descriptive statistics and related diagram figures. Section 2 presents correlation coefficient to deliver an initial understanding about the bivariate association of the variables. Section 3 shows and discusses the results of used panel unit root test. Section4 illustrates the results of regression models and interpretations of those results regarding the determinant factors of banks profitability in Turkey during 1999-2018.

4.1. Descriptive statistics

It is worthy to check for the descriptive statistics which is used in our research to understand the nature and the pattern in them. Table 4.1 provides some information with regard to descriptive statistics such as mean value for the all used variables, standard deviations, range of the values by minimum and maximum, and the probability of normality test of Jarque-Bera. Mean values provide the average which is used to originate the central tendency of the data in the variables individually.

TABLE 4.1: descriptive statistics

Variables	Mean	Maximum	Minimum	Std. Dev.	Jarque-Bera p-value
ROA	2.653	12.480	-11.43	2.353	0.000
ROE	15.680	109.060	-181.12	23.667	0.000
EPS	0.353	2.4100	0.000	0.468	0.000
SIZ	17.164	20.027	12.477	1.687	0.000
CA	17.412	43.300	11.800	5.289	0.000
LEV	0.882	0.992	0.760	0.034	0.000
AS	0.624	0.986	0.252	0.137	0.000
AQ	0.013	0.132	-0.035	0.016	0.000
FS	0.600	0.929	0.000	0.231	0.000
DIV	7.066	95.420	0.000	13.403	0.000

The information presented in the above table provides information concerning descriptive statistics. It is clearly observed that the mean values of the three used measures of profitability are positive. Mean value of return on assets is 2.65 with a range between -11 and +12. Mean value of return on equity is 15.68 with a wide range of disperse and slightly high standard deviation. Moreover, the mean value of earnings per share is 0.35 with a relatively small standard deviation. As we can see the minimum value of EPS is 0 which can claim the fact that none of the banks of our sample study generated negative earnings per share during the studies period. These positive mean values of profitability measures could indicate that the profitability of banking sector in Turkey was, in general, positive.

The mean value of total assets is given in logarithm which is 17.16 with a law standard deviation 1.69. There are both small and large banks included in our sample, according to their total assets. The mean value of the ratio

capital funds to risk weighted assets (denote as CA) is 17.14, ranging between 11.8 and 43.3. According to the employed ratio of financial leverage, total liabilities to total assets, banks are highly levered with an average of 88.16% of their operations are financed through debt. There are banks in our sample that almost all of its assets are financed through debt, 99.2%. The minimum value of leverage in our sample observed is 0.76, meaning that 76 per cent of the assets come from debt. The mean values of asset structure and asset quality are 0.6 and 0.01 respectively. Asset structure also confirms that debt contributes highly in assets generating of the banks in Turkey. The mean value of asset quality states that the quality of loans seems to be high in general. Financial structure ratio provides the proportion of customer deposits in the total liability of a bank. The mean value of this ratio is 59.98 which gives a signal that 60% of the total liabilities of our sample bank is provided through the different types of deposits made by customers. However, there are banks with zero per cent of this ratio. Finally, the mean value of cash payout dividend per share is 7.07, ranging from 0 minimum to 95.4 maximum.

4.2. Correlation coefficients

The bivariate correlation measures the relation between each pair of the selected variables in this study. Using Pearson correlations coefficient, the relationships between the variables and their levels of significance are given in table 4.2. This test is performed for all the selected variables of our research including dependent and explanatory variables. The importance of this correlation analysis can be seen as to understand the relationship between the pairs of the variables and to test for multi collinearity issue among the explanatory variables. Correlation matrix is commonly used in the literature to examine the nature of the association between two variables. However, the direction of the impact cannot be identified by this analysis. The values of the correlation matrix tend to be between +1 for perfect positive association and -1 for perfect negative association.

TABLE 4.2: correlation coefficients between the variables

	ROA	ROE	EPS	SIZ	CA	LEV	AS	AQ	FS	DIV
ROA	**1.00**									
ROE	**0.76**	**1.00**								
	0.00									
EPS	**-0.05**	**0.06**	**1.00**							
	0.37	*0.25*								
SIZ	**-0.19**	**-0.05**	**0.58**	**1.00**						
	0.00	*0.29*	*0.00*							
CA	**0.49**	**0.15**	**-0.25**	**-0.44**	**1.00**					
	0.00	*0.00*	*0.00*	*0.00*						
LEV	**-0.24**	**-0.09**	**0.12**	**0.13**	**-0.27**	**1.00**				
	0.00	*0.08*	*0.02*	*0.01*	*0.00*					
AS	**-0.03**	**-0.06**	**0.05**	**0.13**	**0.01**	**0.07**	**1.00**			
	0.59	*0.25*	*0.37*	*0.01*	*0.80*	*0.18*				
AQ	**-0.42**	**-0.38**	**-0.13**	**-0.05**	**-0.09**	**0.02**	**-0.15**	**1.00**		
	0.00	*0.00*	*0.01*	*0.34*	*0.09*	*0.70*	*0.00*			
FS	**-0.47**	**-0.06**	**0.19**	**0.17**	**-0.48**	**0.25**	**-0.23**	**0.20**	**1.00**	
	0.00	*0.23*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*		
DIV	**0.06**	**0.09**	**0.37**	**0.30**	**-0.08**	**-0.26**	**-0.25**	**-0.03**	**0.15**	**1.00**
	0.21	*0.08*	*0.00*	*0.00*	*0.13*	*0.00*	*0.00*	*0.58*	*0.00*	

The results of correlation coefficients, bold values, are shown in table 4.2.The italic values show the probability of the associations. The results confirm that the relationships are moderate between the pairs of the variables. However, the association between return on assets and return on equity is strong and positive because the two measures provide the same information, but from different perspective.

The correlation of size with both return on assets and return on equity are negative, -0.19 and -0.05. These could indicate that smaller banks in size can be more profitable or highly profitable banks prefer to hold fewer assets

but invest in highly profitable investment and projects. However, bank size based on total assets is positively correlated to profitability measured by earnings per share 0.58.

The explanatory variables of leverage, asset structure, assets quality and financial structure tend to have negative correlations with the two measures of ROA and ROE, but with different level of associations. Dividend per share is weakly and positively correlated to all the three measures of profitability, 0.06, 0.09 and 0.37 respectively. Capital adequacy is also positively correlated to return on assets and return on equity, 0.49 and 0.15 respectively, whereas it is negatively correlated with earnings per share (EPS) -0.25.

The correlation between financial structure and asset quality, -0.48, is negative and statistically significant at the level of 1%. Nevertheless, financial structure is positively correlated with assets structure with 0.25 and it is also statistically significant at the 1% level of significance. Dividend per share is negatively correlated to capital adequacy, financial leverage, asset structure, and asset quality while it is positively correlated to financial structure.

4.3. Panel unit root test

Since the variables used in this study possess panel characteristic, we shall check for unit root of the variables we employ in this research. Having unit root condition in the mean of variable is commonly observable for financial panel data (Rasul, 2019). The condition of having unit root in data could bring about bias to the results of the study. Therefore, it is recommended to conduct some panel unit root tests before selecting and performing any regression models. Otherwise, the results are misled and biased. Non-stationary data can be converted into stationary data through methods such as differencing. Additionally, the tests of unit root can help with the selection of an appropriate regression method that suits the data.

Table 4.4: Panel unit root tests

	Levin, Lin & Chu t*	ADF - Fisher Chi-square	PP - Fisher Chi-square	Decision
ROA	-5.213	113.260	152.362	Reject H_0
	0.000	*0.000*	*0.000*	
ROE	-6.062	130.368	177.345	Reject H_0
	0.000	*0.000*	*0.000*	
EPS	-17.395	274.536	395.826	Reject H_0
	0.000	*0.000*	*0.000*	
SIZ	-3.638	51.962	194.772	Reject H_0
	0.000	*0.000*	*0.000*	
CA	-3.419	107.217	96.474	Reject H_0
	0.000	*0.000*	*0.000*	
LEV	-3.304	64.997	76.421	Reject H_0
	0.000	*0.000*	*0.000*	
AS	-2.777	63.713	95.766	Reject H_0
	0.000	*0.000*	*0.000*	
AQ	-10.050	154.242	150.583	Reject H_0
	0.000	*0.000*	*0.000*	
FS	-4.738	64.937	60.910	Reject H_0
	0.000	*0.000*	*0.000*	
DIV	-2.243	68.528	102.578	Reject H_0
	0.000	*0.000*	*0.000*	

Panel data is used in this study to investigate the determinants of profitability for banks listed on BIST in Turkey during 1999-2018. There are several methods used in the literature for panel unit root tests including Augmented Dickey and Fuller test, Phillips and Perron test, and Levin, Lin and Chu test. These three tests are performed in this study to confirm the results of unit root tests (look at table 4.4). The null hypotheses are set for the presence of unit root in panel data in all the three tests while the alternative hypothesis indicates that the variable is stationary. We accept the results of these tests at 95% of confidence interval.

The results of unit root tests are presented in table 4.4. The results of the three selected tests show that the probabilities of the tests are smaller than

0.05 for all the variables and in all the tests. Thus, we can reject the null hypotheses claiming that the panel variables have unit roots in favour for the alternative hypotheses. Therefore, we claim that the variables we use in this study are all stationary at their level, meaning that they are all I(0). We can perform regressions such as pooled Ordinary Least Square (OLS) and Random and Fixed effect to investigate the impacts of the selected explanatory variables on profitability ratios of Banks listed on BIST.

4.4. Regression analysis

In order to investigate the direction and level of impact form the explanatory variables to the dependent variables, we must run some regression models for the three study models we specified previously. Consequently, we can identify the factors that determine bank's profitability in Turkey. First, we perform pooled OLS regression. Second, we run FE and RE regression models for robustness. FE and RE models are considered to work better compare to polled ordinary least square because they can control for firm-specific effects which can be commonly found in non-experimental studies (Rasul, 2019).

4.4.1. Pooled OLS regression

Table 4.5 presents the results of pooled OLS in three models. In model 1, ROA is the dependent variable and ROE is the dependent in model 2 whereas EPS is the dependent variable in model 3.

Table 4.5: results of pooled OLS regression analysis

	Model 1 Dependent Variable: ROA			Model 2 Dependent Variable: ROE			Dependent Variable: EPS		
Variable	Coefficient	Std. Error	t* and probability	Coefficient	Std. Error	t* and probability	Coefficient	Std. Error	t* and probability
C	7.648	2.832	2.701***	47.673	34.741	1.372	-3.638	0.584	-6.230***
SIZ	-0.043	0.065	-0.664	-0.393	0.794	-0.495	0.134	0.013	10.047***
CA	0.135	0.022	6.226***	0.599	0.267	2.244**	0.004	0.004	0.93
LEV	-3.501	2.942	-1.19	-26.972	36.1	-0.747	1.58	0.607	2.603**
AS	-2.016	0.724	-2.785***	-14.42	8.881	-1.624	0.15	0.149	1.002
AQ	-52.766	5.986	-8.815***	-604.363	73.441	-8.229***	-3.203	1.235	-2.594**
FS	-2.81	0.479	-5.864***	7.211	5.879	1.227	0.179	0.099	1.816*
DIV	0.015	0.008	1.918**	0.099	0.097	1.024	0.009	0.002	5.495***
R-squared		0.451			0.184			0.41	
Adj. R-squared		0.441			0.169			0.399	
F-statistic		43.7***			11.97***			36.994***	
Durbin-Watson stat		1.603			1.841			0.329	
Observations		380			380			380	

The results of model 1 show that the impact on profitability measured by ROA from the independent variables of capital adequacy, asset structure, asset quality and financial structure are statistically significant at the level 1%. Additionally, the effect of dividend per share is statistically significant at 5% level of significance. However, the effects from size and leverage do not seem to be significant. The impacts from asset structure, asset quality and financial structure on ROA are negative while the impacts of capital adequacy and dividend per share seem to be positive.

Precisely, capital adequacy could positively influence ROA in a way that every percentage increase in capital adequacy can result an increase in ROA by 0.13%. Moreover, one percentage increase in dividend per share can lead to an increase in ROA by 0.015%. However, one percentage increase in each of asset structure and financial structure separately can bring about a reduction in ROA by 2% and 2.8%. In addition, asset quality can have a greater negative impact on ROA, according to its coefficient is -52.8.

The adjusted R-squared show in model 1 that the variables together can explain 44.1% of the variations in return on assets. The probability of F-statistics is smaller than 0.01, showing that the variables could fit in the model.

The outcomes of model 2 show that the effect on profitability measured by ROE from the independent variables of size, leverage, asset structure, financial structure and dividend per share are statistically insignificant at the level 5%. However, the effect of capital adequacy and asset quality are statistically significant at 5% level of significance. The impact from capital adequacy on ROE is positive while the impact of asset quality looks to be negative.

Precisely, capital adequacy could positively influence bank’s profitability measured by ROE in a way that every percentage increase in capital adequacy can result an increase in ROE by 0.6% and this result is statistically significant at the level 5%. Nonetheless, one percentage increase

in asset quality could bring about a reduction in ROE by 604% and it is statistically significant at the level 1%.

The adjusted R-squared in model 2 is 16.9%, relatively lower compare to the results in model 1, showing that the included variables in model 2 have power to jointly explain 16.9% of the variations in profitability of banks measured by return on equity. The probability of F-statistics is smaller than 0.01, showing the goodness of fit for model 2.

The results of model 3 show that the impact on profitability measured by EPS from the independent variables of size, leverage, asset quality, financial structure and dividend per share are statistically significant at the levels 1%, 5% and 10%. However, the effect of capital adequacy and asset structure are statistically insignificant even at 10% level of significance. The impact from bank size, financial leverage, financial structure and dividend per share on EPS are positive whereas the impact from asset quality is negative.

Banks size measured by total assets at book value could positively influence bank's profitability measured by EPS in a way that every percentage increase in total assets can result an increase in EPS by 0.13%. Likewise, one percentage increase in leverage ratio, dividend per share and financial structure separately can result an increase in EPS by 1.58%, 0.009% and 0.18% respectively. The impact of dividend per share is statistically significant at 1% level but the impact of financial structure is only significant at the level of 10%.Nevertheless, asset quality tends to negatively influence EPS. Precisely, one percentage increase in AQ brings about a decrease in EPS by 3.2% and it is statistically significant at 5% level.

The adjusted R-squared in model 3 is 39.9%, relatively higher compare to the outcomes in model 2, showing that the studied variables in model 3 have power to jointly explain 39.9% of the variations in profitability of banks measured by earnings per share. The probability of F-statistics is smaller than 0.01, showing the goodness of fit for the model.

4.4.2. FE and RE regression analyses

In order to select the appropriate regression analysis between fixed effect and random effect models, correlated random effect- Hausman test is performed. According to the null hypothesis of this test, random effect model is appropriate. Thus, if the probability of Chi-squared is greater than 0.05, we cannot reject this stated null hypothesis. Table 4.6 show the results of Hausman test for the three specified models of this study.

Table 4.6: Hausman test

	ROA is dependent	ROE is dependent	EPS is dependent
Chi-Sq. Statistic	28.24	19.85	27.99
Prob.	0.000	0.005	0.000

The results of Hausman test in table 4.6 confirm that we can reject the null hypothesis that random effect model is suitable in favour for the alternative proposition. In other words, fixed effect model is suitable for all the three specified models. The results of FE models are shown in table 4.7 and are interpreted afterwards.

Table 4.7: results of Fixed Effect regression analysis

	Dependent Variable: ROA			**Dependent Variable: ROE**			**Dependent Variable: EPS**		
Variable	Coefficient	Std. Error	t* and probability	Coefficient	Std. Error	t* and probability	Coefficient	Std. Error	t* and probability
C	12.543	3.522	3.561***	82.184	43.822	1.875*	-3.352	0.441	-7.599***
SIZ	-0.061	0.101	-0.606	1.591	1.262	1.261	0.151	0.013	11.881***
CA	0.127	0.023	5.587***	0.731	0.283	2.586**	0.003	0.003	1.058
LEV	-8.509	3.309	-2.571**	-89.856	41.171	-2.183**	0.934	0.414	2.254**
AS	-1.967	0.844	-2.331**	-30.076	10.497	-2.865***	0.192	0.106	1.815*
AQ	-55.121	6.179	-8.920***	-649.690	76.875	-8.451***	0.484	0.774	0.626
FS	-2.889	1.061	-2.722***	-2.093	13.203	-0.159	0.160	0.133	1.202
DIV	0.020	0.009	2.175**	0.170	0.112	1.515	0.002	0.001	2.132**
R-squared		0.498842			0.233			0.801	
Adj. R-squared		0.46345			0.179			0.787	
F-statistic		14.09***			4.316***			57.149***	
Durbin-Watson stat		1.71			1.868			0.646	
Observations		380			380			380	

Table 4.7 shows the results of Fixed Effect model of regression analysis in three models. In model 1, ROA is the dependent variable and ROE is the dependent in model 2 whereas EPS is the dependent variable in model 3.

The results of model 1 show that the impact on profitability measured by ROA from the explanatory variables of capital adequacy, asset quality and financial structure are statistically significant at the level 1%. Additionally, the effect of financial leverage, asset structure and dividend per share are statistically significant at 5% level of significance. However, the effect from size does not seem to be statistically significant. The impacts from leverage, asset structure, asset quality and financial structure on ROA are negative while the impacts of capital adequacy and dividend per share are positive.

With regard to the coefficients of the explanatory variables, capital adequacy could positively influence ROA in a way that every percentage increase in capital adequacy can result an increase in ROA by 0.127%. Furthermore, one percentage increase in dividend per share can lead to an increase in ROA by 0.020%. However, one percentage increase in each of asset structure and financial structure separately can bring about a reduction in ROA by 1.97% and 2.9%. In addition, asset quality and leverage can have greater negative impacts on ROA, as stated by the values of their coefficients, -55.12 and 8.51 respectively.

The adjusted R-squared show in model 1 that the variables jointly can explain 46.3% of the variations in profitability measured by ROA. The probability of F-statistics is smaller than 0.01, indicating the goodness of fit for the model.

The results of model 2 show that the impact on profitability measured by ROE from the explanatory variables of Capital adequacy, financial leverage, asset structure, asset quality are statistically significant at the levels 1% and 5%. However, the effect of total assets and financial structure and dividend per share are statistically insignificant at 5% level of significance. The impacts leverage ratio, asset structure, asset quality are negative whereas the impact from capital adequacy on ROE is positive.

Precisely, capital adequacy could positively influence bank's profitability measured by ROE in a way that every percentage increase in capital adequacy can lead to an increase in ROE by 0.73% and this result is statistically significant at the level 5%. Nonetheless, one percentage increase in total liabilities to total assets ratio, asset structure and asset quality separately could cause ROE to reduce by 2.18%, 2.87% and 8.45% respectively. The coefficient value of asset structure and asset quality are significant at 1% level of significance while the results of t-statistics show that the impact of leverage ratio on ROE is statistically significant only at the level of 5%.

The adjusted R-squared in model 2 is 17.9%, reasonably lower than the adjusted R-squared in model 1, showing that the included variables in model 2 have power to jointly explain 17.9% of the variations in profitability of banks measured by ROE. The probability of F-statistics is smaller than 0.01, showing the goodness of fit for the specified model.

The results of model 3 show that the impacts on profitability measured by EPS from the independent variables of total assets at book value, leverage ratio, asset quality and dividend per share are statistically significant at different levels of 1%, 5% and 10%. However, the effect of capital adequacy, asset quality and financial structure are statistically insignificant even at 10% level of significance. The results also demonstrate that effect of the independent variables, which are statistically significant, tend to be positive on EPS.

Banks size could positively influence bank's profitability measured by EPS in a way that every percentage increase in total assets leads toan increase in EPS by 0.15% with a low standard error 0.01. Likewise, one percentage increase in leverage ratio and dividend per share separately could increase EPS by 0.93% and 0.002% respectively, at the 5% level. The impact of asset structureis 0.19 and it is only statistically significant at 10%.

The adjusted R-squared in model 3 is 0.787, relatively higher compare to the outcomes of the same test in model1 and model 2, showing that the included variables in model 3 could jointly explain 78.7% of the variations in

profitability of banks measured by earnings per share. The probability of F-statistics is smaller than 0.01, showing the goodness of fit for the model.

4.5. Conclusion

In this chapter, data analysis and the interpretation of their results were shown. The aim of this chapter is to illustrate the analysis of the sample data of this study according to different used tests to identify the nature and pattern of the data and variables separately, to examine the possibleassociation among the employed variables and to recognize the directions of relationships and level of impacts form the selected bank-specific characteristics to the profitability ratios of those banks. The chapter is divided into five sections. Section 1 demonstrates an overview to the measures of bank profitability and several chosen explanatory variables at the level of bank via descriptive statistics. Section 2 presents correlation coefficient to deliver an initial understanding about the bivariate association of the variables. Section 3 shows and discusses the results of employed panel unit root tests. Section 4 illustrates the results of regression analyses and interpretations of those results regarding the determinant factors of banks profitability in Turkey during 1999-2018.

CHAPTER 5

CONCLUSION

The purposes of this chapter are several. First aim is to discuss the results of data analysis in chapter 4 and compare the results to previous empirical literature. Second purpose is to briefly present the previous chapters of the thesis. Finally, it aims at presenting implication policy, suggestion and some recommendation for future studies.

5.1. Discussion of the results

The empirical results of this study suggest that there are several bank-specific variables that could determine the profitability if banking sector in Turkey. We conclude our results based on the results of fixed effect regression analysis because this technique of data analysis is more accurate based on the control for cross-section aspect in panel data and it is widely recommended and used in the literature.

We found that bank size measured as total assets at book value has positive and significant impact on EPS only, but no significant impact on ROA and ROE. These results are consistent with the findings of Athanasoglou et al. (2005) but contrary with Obamuyi (2013) and Anbar and Alper (2011).

The results of regression analysis show that capital adequacy has a positive impact on both return on assets and return on equity. Ebenezer et al. (2017) found similar results in the case of Nigeria when capital adequacy had a positive and significant impact on bank profitability. Rahman et al. (2015) claim similar results in Bangladesh. Similarly, dividend per share has a

positive and significant impact on the two measures of profitability; return on assets and earnings per share. This is supported by the argument that managers are forced to payout dividend to the shareholders in order to minimise cash available in the banks, because excess cash may mislead managers to invest in low profitable and negative net present value projects and investments.

The results show that the impact of leverage is not uniform on the different measures of profitability. Leverage has a negative and significant impact on ROA and ROE, indicating that the higher the ratio of total liabilities to total assets, the lower the profitability of banks in Turkey is. Contrary to our result, Khrawish (2011) found that the ratio total liabilities to total assets could positively affect ROA in Jordan.

The results of asset structure and asset quality tend to be negative and significant on return on assets and return on equity. This means high ratio of total loans to total assets and high ratio loan loss provisions to net loans are associated with low profitability of banks and vice versa. Anbar and Alper (2011) also found that loan to asset ratio can have negative impact on profitability because banks also need to invest in other activities for the purpose of risk diversification. However, Olweny and Shipho (2011)found contrary results in Kenya. With regard to asset structure ratio, Menicucci and Paolucci (2016) found similar result that higher loan loss provisions result in lower profitability levels. This suggests that banks with high provisions of loan losses have lent high level of doubtful loans which can result in decreasing profitability.

Additionally, the results of our study claim that financial structure measures as ratio customer deposits to total liabilities have a negative effect on profitability of banks in Turkey. These findings are contrary to the results found by Menicucci and Paolucci (2016)

5.2. Summary of the thesis

Chapter 1 presented a general background about the banking sector in general and banks in Turkey in particular. It showed that commercial banks commonly prioritize their profit maximization and therefore the factors that determine profitability are considered by the management of bank as well.In addition to the general background on the topic, the problem statement of this study stimulated around the increase of Turkish banks' branches whereas their profitability had declined over time. Accordingly, the main objective of this study was also shown to investigate the factors affecting profitability of Turkish banking sector. The hypotheses of this study were set in accordance with the selected internal factors that probably influence profitability of this sector. The contributions that the study possibly makes through a number of aspects were also presented in this chapter. Finally, the limitations were shown in the last section of the chapter.

In chapter 2, the theoretical literature is highlighted in the sections 1 to 3. The concepts related to profitability and its sources were discussed in addition to the most important factors affecting it. From it we can say that profitability is the policy of reaching goals. In spite of the different types, we find that they flow into one concept, measuring the bank's effectiveness and efficiency. Likewise, profitability ratios are linked to the bank and everyone who has a relationship with the bank. It is the duty of bank to control all factors that could affect its profitability. Section 4 shows and discusses the ground theories about the factors affecting profitability. Section 5 was centred on the most important previous studies that are similar to the purposes of thisreserach. And through which a review of the most important aspects of these studies represented in the aim of the study as well as mentioning the most important results reached. Finally, a literature gap was identified based on the review of the previous empirical studies.

Chapter 3is methodology and was divided to six sections. Section 3.1 defined the study sample and the method of data collection. Section 3.2 provided an overview on the sample study. Section 3.3 described the

research variables and accordingly develops their proposed relationships with regard to the variables determining profitability easements. Section 3.4 specified the research models. Section 3.5 described and explained the research method used to investigate the proposed relationships of the study.

In chapter 4, data analysis and the interpretation of their results were shown. The aim of this chapter is to illustrate the analysis of the sample data of this study according to different used tests in to identify the nature and pattern of the data and variables separately, to examine the possible associations among the employed variables and to recognize the directions of relationships and level of impacts form the selected bank-specific characteristics to the profitability ratios of those banks. The chapter is divided into five sections. Section 1 demonstrates an overview to the measures of bank profitability and several chosen explanatory variables at the level of bank via descriptive statistics. Section 2 presents correlation coefficient to deliver an initial understanding about the bivariate association of the variables. Section 3 shows and discusses the results of employed panel unit root tests. Section 4 illustrates the results of regression analyses and interpretations of those results regarding the determinant factors of banks profitability in Turkey during 1999-2018.

5.3. Policy implication and suggestions

According to the results of this empirical study, profitable banks in Turkey were those that strive to improve their capital adequacy, payout high and more regular dividend to common shareholders, reduce level of leverage, asset structure, asset quality and financial structure. However, the impact of the studied factors is not uniform with regard to different proxies of profitability.

In general, we can claim the following implications and make some suggestions:

1. Regulatory authorities of banking sector in Turkey need to encourage banks to increase capital funds to risk weighted assetsin order ot increase their profitability.
2. Directors of the banks' board need to support high dividend payment policy since more frequent and potentially high dividend payout to shareholders is associated with high profitability of banks.
3. Banks listed on BIST are highly levered. Managers of those banks needs to minimise the ratio of financial leverage in their banks to further improve profitability.
4. Loan rating procedure needed to be appreciated as an important task to avoid low quality loans and further improve profitability.
5. It is necessary to work to decrease total loans to total assets ratio as of this ratio has a negative relationship with profitability.

5.4. Limitations and recommendations

There ismissing and inconsistency of the data of banks, where the researcher to make models to unify the budgets of banks in order to access to statistical data can be used. This is because of some reasons. First, banks differ in the classification of financial statements published in the financial statements from one bank to another. Second, different methods of banks in the classification of financial statements published in the financial statements from one fiscal year to another for one bank. Some banks make adjustments to the classification of some items of financial statements from one fiscal year to another year. Lastly, there were some missing data for some banks related to some financial year which made us to exclude those banks in our sample study.

Future studies can examine profitability determinants over different period of time include other banks in their research sample. Moreover, it is stated in the literature that macro factors can also determine profitability ratios. Therefore, future studies may consider some macro factors along with firm specific factors to further explain the variations in profitability. Additionally, someone can also consider the whole financial sector including insurance

firms, real estate and others to expand the generalizability of the results around this issue.

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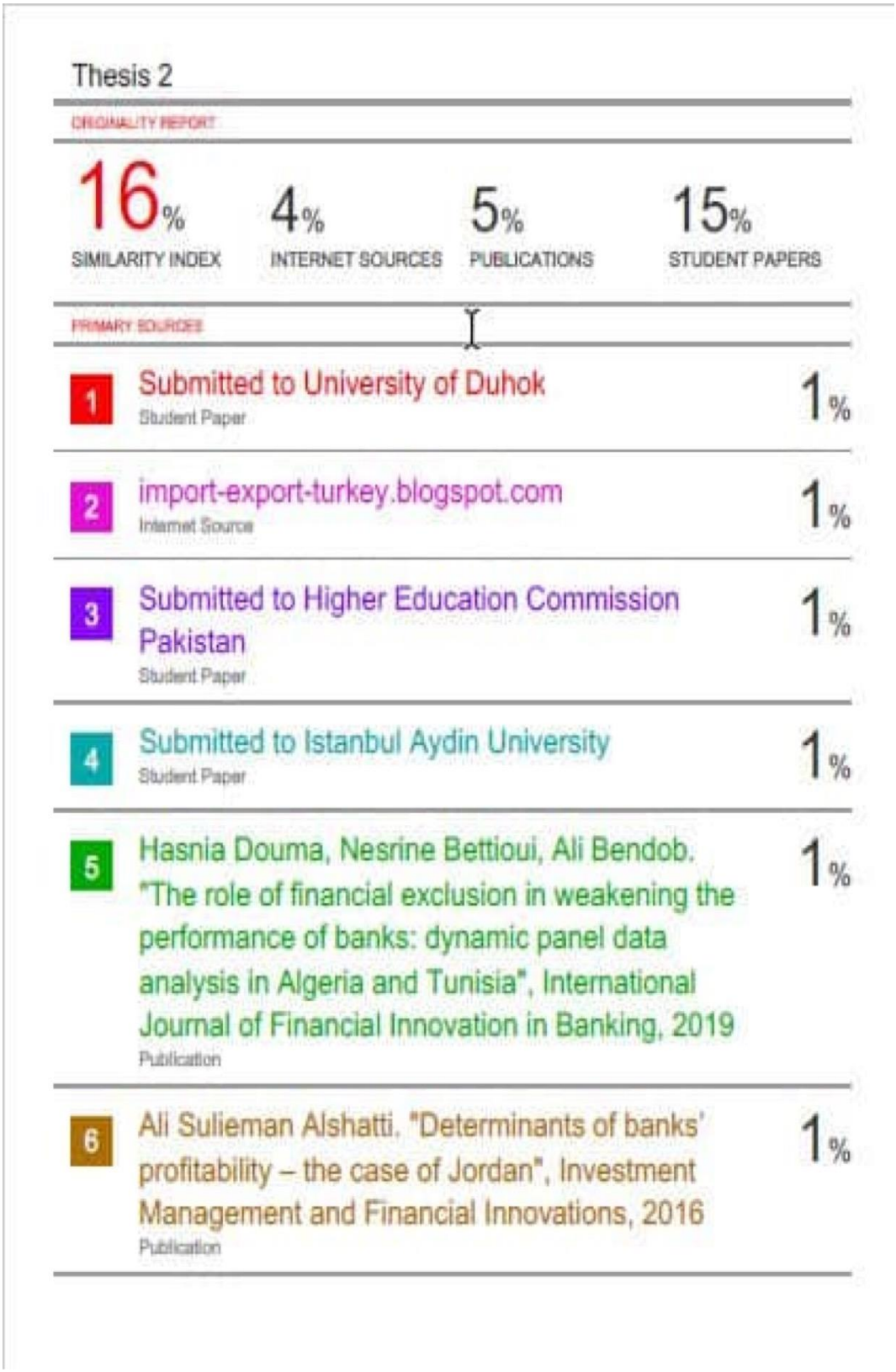

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