

DOKUZ EYLUL UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
DEPARTMENT OF BUSINESS ADMINISTRATION
BUSINESS ADMINISTRATION PROGRAM
DOCTORAL THESIS
Doctor of Philosophy (PhD)

**THE IMPACTS OF ADOPTING INTERNATIONAL
FINANCIAL REPORTING STANDARDS ON
COMPANIES: EVIDENCE FROM BORSA ISTANBUL**

ÜNAL ŞERİFLER

Supervisor
Prof. Dr. Banu Esra ASLANERTİK

İZMİR, 2016

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DECLARATION

I hereby declare that this doctoral thesis titled as “The Impacts of Adopting International Financial Reporting Standards on Companies: Evidence From Borsa Istanbul” has been written by myself in accordance with the academic rules and ethical conduct. I also declare that all materials benefited in this thesis consist of the mentioned resources in the reference list. I verify all these with my honor.



Date

.../.../.....

Ünal ŞERİFLER

Signature

THE IMPACTS OF ADOPTING INTERNATIONAL FINANCIAL REPORTING STANDARDS ON COMPANIES: EVIDENCE FROM BORSA ISTANBUL

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ABSTRACT

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Doctor of Philosophy (PhD)

**The Impacts of Adopting International Financial Reporting Standards on Companies:
Evidence From Borsa Istanbul**

Ünal ŞERİFLER

Dokuz Eylul University

Graduate School of Social Sciences

Department of Business Administration

Business Administration Program

This study examines the impacts of adopting International Financial Reporting Standards (IFRS) and the prior and superseded International Accounting Standards (IAS) on firm value in Borsa Istanbul. In this context, impacts of IFRS adoption on stock beta, cost of debt and cost of equity capital are investigated respectively and WACC of listed companies in BIST is tested whether IFRS adoption has any impact on firm value. This study is motivated by the aims of IFRS which are transparency, higher disclosure level and comparability of financial information may be expected to have some impacts on listed companies.

First, the study empirically examines whether IFRS adoption has impacted stock beta and secondly, whether cost of equity capital as determined by CAPM has declined after the IFRS adoption. Thirdly, this study examines the changes in cost of debt of listed companies in BIST and finally this study examines the impacts on IFRS adoption on firm value by testing the Weighted Average Cost of Capital of listed companies in BIST.

This study finds significantly lower stock beta after IFRS adoption for listed companies in BIST. Furthermore, this study finds evidence of significantly lower cost of equity capital in post IFRS period compared to local GAAP period in BIST and significantly lower cost of debt in first adoption period between the years 2005 and 2007. This provides evidence for the valuation impact of IFRS adoption. In this context, this study examined the impact of IFRS adoption on WACC and finds significantly lower WACC for the listed companies in BIST.

Keywords: IFRS Adoption, Cost of Equity Capital, Cost of Debt, Stock Beta, Weighted Average Cost of Capital



ÖZET

Doktora Tezi

**The Impacts of Adopting International Financial Reporting Standards on Companies:
Evidence From Borsa İstanbul**

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Dokuz Eylül Üniversitesi

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Bu çalışma Uluslararası Muhasebe Standartları (IAS) ve Uluslararası Finansal Raporlama Standartları'nın (IFRS), Borsa İstanbul'da işlem gören şirketlerin değerine pozitif bir etkisi olup olmadığını incelemiştir. Bu kapsamda öncelikle şirketlerin hisse senedi betaları, borçlanma maliyetleri ve sermaye maliyetlerindeki değişiklikler incelenmiş ve daha sonra IFRS'in temel amaçlarından olan dipnot detayı artırılmış olan finansal bilginin şeffaflığı ve karşılaştırılabilirliği ışığında şirket değerine pozitif etkilerinin olup olmadığı araştırılmıştır.

Çalışmada ilk olarak IFRS uygulamasına geçişin hisse betalarına etkisi incelenmiş daha sonra Sermaye Varlıkları Fiyatlama Modeli (CAPM) kullanılarak hesaplanan sermaye maliyeti ve şirketlerin borçlanma maliyetlerinin IFRS uygulamasının ardından değişip değişmediği incelenmiştir. Çalışmada son olarak Borsa İstanbul'da işlem gören firmaların Ağırlıklı Ortalama Sermaye Maliyeti (AOSM) metodu ile hesaplanan sermaye maliyeti IFRS adaptasyonu sonrasındaki değişimi incelenerek, IFRS'e geçişin şirket değeri üzerinde ne derece etkisinin olduğu test edilmiştir.

Çalışmada, IFRS'e geçişin hisse senedi betalarını anlamlı olarak düşürdüğü ve dolayısıyla hisse volatilitesi üzerinde olumlu etkileri olduğu görülmüştür. Aynı şekilde, yeni raporlama sisteminin CAPM methodu ile hesaplanan sermaye maliyetlerini de anlamlı düzeyde düşürdüğü tespit edilmiştir. Şirketlerin borçlanma maliyetleri incelendiğinde, IFRS sonrası ilk dönemde şirketlerde borçlanma maliyetleri anlamlı olarak düşüş gösterirken devam eden periyottaki düşüş istatistiksel olarak anlamlı görünmemektedir. Son olarak IFRS uygulamasına geçişin şirketlerin ağırlıklı ortalama sermaye maliyetlerini anlamlı olarak düşürdüğü görülmektedir. Buna göre yeni raporlama sisteminin, İndirgenmiş Nakit Akımları yöntemi kullanılarak yapılan şirket değerlendirme tahminleri üzerinde, şirketlerin Ağırlıklı Ortalama Sermaye Maliyetleri'ni (AOSM) düşürerek pozitif etkisi olduğu sonucuna varılmıştır.

Anahtar Kelimeler: UFRS, Sermaye Maliyeti, Borçlanma Maliyeti, Hisse Senedi Betası, Ağırlıklı Ortalama Sermaye Maliyeti

THE IMPACTS OF ADOPTING INTERNATIONAL FINANCIAL REPORTING STANDARDS ON COMPANIES: EVIDENCE FROM BORSA ISTANBUL

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LIST OF ABBREVIATIONS

AICPA	American Institute of Certified Public Accountants
APT	Arbitrage Pricing Theory
CAPM	Capital Asset Pricing Model
CCL	Commercial Code Law
CMB	Capital Markets Board
DCF	Discounted Cash Flow
EEC	European Economic Committee
EU	European Union
FASB	Financial Accounting Standards Board
FCFE	Free Cash Flow to Equity
FCFF	Free Cash Flow to Firm
GAAP	Generally Accepted Accounting Principles
IAS	International Accounting Standards
IASB	International Accounting Standards Board
IASC	International Accounting Standards Committee
IFAC	International Financial Accountants Confederation
IFRS	International Financial Reporting Standards
IFRIC	International Financial Reporting Interpretations Committee
IOSCO	International Organization of Securities Commission
NCC	Napoleon Commercial Code
OECD	The Organization for Economic Co-operation and Development
SIC	The Standing Interpretations Committee
SME	Small and Medium Sized Enterprise
TMUDESK	Turkish Accounting and Auditing Standards Board
WACC	Weighted Average Cost of Capital

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Appendix 1. Different Philosophies in Accounting

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INTRODUCTION

Accounting plays an important role in economic environment. As a branch of economics, it provides information about a firm and its transactions to facilitate resource allocation decisions by users of that information. It is rather a one of key fragments of entire information system of business organization.

However, accounting has never worked and does not work currently as an independent system and is always considered as a conservative system which is not open any global development (Walinska, 2010: 22). The main reason of this perception is that accounting had been always affected by other financial developments such as banking and capital market developments. However, beginning of the global integration in the 20th and 21st century after trade volume and transaction amounts between countries increased makes the financial information much important and the accounting and its reporting function became more important than before.

After the new accounting system became mandatory in BIST, impacts of IFRS on companies are increasingly investigated in recent years. In this line, this dissertation aims to investigate the impact of IFRS adoption on firm value by examining the changes on stock beta, cost of equity capital, cost of debt and WACC, respectively. Being an emerging and dynamic market of BIST, the findings of the study will have implications not only for the policy-makers but also the companies itself, practitioners and researchers.

This dissertation is organized as follows. Chapter One describes the development of accounting environment, international accounting harmonization and setting process of IAS / IFRS. An overview of value and valuation concepts and also the valuation methodologies is presented in Chapter Two. Chapter Three develops the hypotheses, discusses the research design, presents the empirical results and states the results.

CHAPTER ONE

HISTORY OF ACCOUNTING AND ITS EVOLUTION PROCESS

Accounting was firstly defined as a term in Summa which was accepted as the first source about accounting (McCarthy et. al., 2008:147). In Summa, accounting is defined as a double booking system in which cash flow transactions are recorded by the memo, journal and ledger. In parallel with the financial developments, its definition expanded through new functions. Hence, accounting was firstly considered as a system to produce the financial information in Luca Pacioli's book which focused on the booking function of accounting (Smith, L.M., Luca Pacioli: The Father of Accounting, <http://www.uta.edu/> 20.02.2013)

In today, accounting is considered as a product of the economic environment, specific historical periods as well as directly restricts economic background determines the main features of this period, accounting and the basic trend (Moussa, 2010:90). It can be also defined as a system which a company uses to measure its financial performance by noting and classifying all the transactions like sales, purchases, assets, and liabilities in a manner that adheres to certain accepted standard formats. It summarizes all business activities during an accounting period in monetary terms & report financial outcomes in terms of performance, status of assets, liabilities & flow of cash.

American Accounting Association defines accounting as the process of identifying, measuring and communicating economic information to permit informed judgments and decisions by the users of the information (<http://aaahq.org/>, 21.01.2013). Moreover, American Institute of Certified Public Accountants (hereafter "AICPA") defines the accounting as "the art of recording, classifying and summarizing in a significant manner and in terms of money, transactions and events which are in part at least of a financial character and interpreting the result thereof. (<http://www.aicpa.org>, 21.01.2013)

1.1 ACCOUNTING DEVELOPMENT AND ITS INTEGRATION PROCESS IN EUROPE

Development process of accounting in Europe can be explained in two approaches (Wiley, 2011).

- Commercial Code Law (Continental Europe Approach)
- Anglo Saxon Approach

These systems have different characteristics in terms of taxation system, legal system and provider of capital (Appendix 1. Different Philosophies in Accounting).

Commercial Code Law (hereafter, CCL) approach started in 1673 in France (Chiapello, 2007: 266). In CCL, companies prepared their financial statements according to fair value approach and reported them to the public authority. The authority could oversight the companies by analyzing their financial statements if any bankruptcy risk occurred for a company. Upgrading this approach in 1807, Napoleon Commercial Code (hereafter, NCC) was started to be applied in France. This legislation is accepted as the beginning of improvement of accounting as in both integrated with other disciplines and individually.

According to NCC, all companies, ignoring their sizes, had to perform daily booking and prepare inventory list annually. By this way, government could have a chance to monitor each company in economy and economy as a whole.

Table 1 below shows the start of the accounting regulations in the EU countries.

Table 1. Accounting Regulations in the EU Countries

Country	Trade Law (Companies Law)	Start of Accounting Regulations	Start of Audit Regulations
Austria	1717 – Allgemeines Handelsgesetzbuch	1768 - Hofdekret	1899 – Amendments to Allgemeines Handelsgesetzbuch
Belgium	1807 – Code de Commerce	1807 – Code de Commerce	1873 – Document parlementaires de Belgique

Denmark	1788 - Noeringsloven	1912 - Bogforingsloven	1909 – Lov om statsautoriserede Revisorloven
Finland	1895 – Laki Osakeyhioista	1895 – Laki Osakeyhioista	1914 – Laivalmistelukunnan edhatus ostukseki Osakeyhtioista
France	1673 – Ordonnance de Commerce	1807 – Code de Commerce	1867 – Code de Commerce
Greece	1920 – Company Law	1952 – Code of Books and Records	1955 – Institute of Sworn-in Accountants
Ireland	1921 – Companies Act	1921 – Companies Act	1963 – Companies Act
Italy	1882 – Commercial Code (Civil Code)	1882 – Commercial Code (Civil Code)	1865 – Rivista di Amministrazione e Contabilita
Luxemburg	1807 – Code de Commerce	1807 – Code de Commerce	1915 – Code de Commerce
Germany	1794 – Preussisches Allgemeines Rech	1794 – Preussisches Allgemeines Rech	1887 – Beeidete Buchrevisoren (Lubeck, Hamburg, Bremen)
Netherlands	1811 – Code de Commerce	1838 – Code de Commerce	1910 – Code de Commerce (Chmbers of Commerce)
Portugal	1755 – Junta de Commercio	1756 – Aula de Comercio	1930 – Comora dos Revisores Oficiais de Contas
Spain	1829 – Codice de Comercio	1829 – Codice de Comercio	1943 – Instituto de Censores Jurados de Cuentos
Sweeden	1848 – Companies Act	1855 – Accounting Act	1912 – Stockholm Chamber of Commerce
G. Britain	1844 – Joint Stock Companies Act	1844 – Joint Stock Companies Act	1844 – Joint Stock Companies Act
Source: European Accounting Review, 1993, European Accounting Guide, 1995.			

Beside the NCC, an Anglo Saxon approach is started to be used in England and some other countries in the developing process of accounting.

Anglo Saxon approach, on the contrary to CCL and NCC, mainly focuses on relations between investors and companies so that importance of reporting to investors becomes more important than reporting to government within the frame of this approach.

The first move toward international accounting professionalism was in 1904 when the International Congress of Accountants took place in St. Louis as a “forum for the exchange of thoughts and experiences” (Mueller, 1979:2). This seminar is the first area that the accounting role in local and international economic environment was discussed (Mueller, 1979:2). In this Congress, harmonization of accounting in all around the world is aimed and a working group was created to determine the accounting system, reporting rules and principles of each country and differences in accounting among countries (Jaruga et. al., 2002: 11).

1.2 STANDARDISATION AND HARMONISATION OF ACCOUNTING

Differences in accounting approaches prevented the standardization in accounting in all around the world. Thus, harmonization and standardization concepts were started to be argued to set unique financial environment.

The terms “harmonization” and “standardization” are used in most instances to describe the solution to solve the differences that pertain in national financial reporting standards. Despite they are often used in the same meaning, they refer to different points actually. Standardization is a process in which all countries should adopt the method of one country. In contrary, harmonization is understood as a reconciliation of different points of view (Fritz and Lamme, 2003:33).

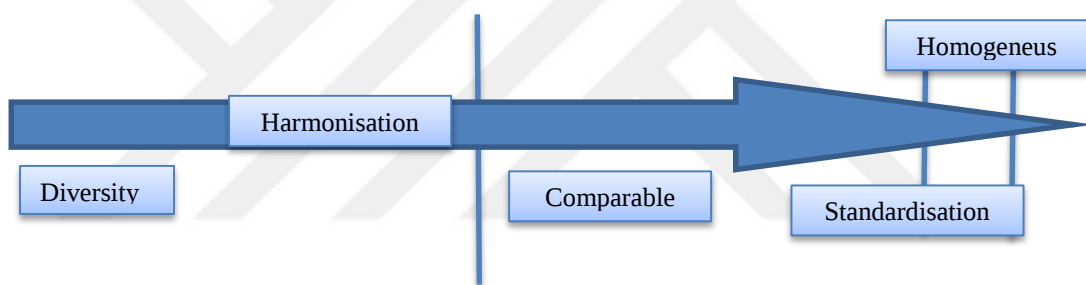
Accounting harmonization can be defined as a continuous process of ensuring that the Generally Accepted Accounting Principles (GAAP) are formulated, aligned and updated to international best practices (GAAPs in other countries) with suitable modifications and fine tuning considering the domestic conditions (Mogul, 2003: 681).

In this context, harmonization of financial reporting can be defined as the process by which differences in financial reporting practices among countries are reduced (Doupnik, 1987:25).

Hence, international accounting harmonization can be defined as “the process of bringing international Accounting Standards into some sort of agreement so that the financial statements from different countries are prepared according to a common set of principles of measurement and disclosure” (Haskins et al., 1996:29).

On the other hand, standardization is described as a process by which all participants agree to follow the same or very similar Accounting Practices. The end result is a state of uniformity (Roberts et al., 1998:177). The Figure 1 in below shows the relationship between standardization and harmonization concepts.

Figure 1. Harmonization and Standardization Concepts



Source: Fritz and Christina, 2003, p.34

Harmonization and standardization were both required in parallel with some economic and financial motivations in capital markets. These motivations can be summarized in five main motivations (Catalina et. al., 2008:1245; Jallao et. al., 2007:149). These motivations are;

- Comparable and reliable reporting requirement in the parallel of economic and financial integration in all around the world.
- Increasing the number of multinational and international companies and their international investments
- Being more important of international institutions such as World Bank after world trade increase
- Aiming to have more market ratio by countries while increasing the trade volume and economic integration and becoming more important of financial information

- The emergence and development of multinational concerns, the growth of international financial markets and changing investor behavior have

In this development process of accounting, both the local and international organizations have been working to reduce the differences in accounting standards among nations and are trying to eliminate all unnecessary differences (McComb, 1982:38). Projects in the U.S.A and Europe are the key steps in accounting harmonization process globally. Projects in Turkey are performed in parallel with Europe Union.

In the first phase of accounting harmonization in all around the world, International Financial Accountants Confederation (hereafter, IFAC) was founded in 1977 to organize the operations in parallel with both local accounting institutions and international institutions.

1.2.1 International Financial Accountants Confederation (IFAC)

Being first international organization, IFAC was organized in 1977 with headquarters in New York. It is a private body whose membership consists of national professional organizations that represent accountants (IFAC, <http://www.ifac.org/about-ifac/organization-overview/history>, 06.06.2012).

IFAC's role in the accounting standards is to assist their promulgation and to encourage their development. Its responsibilities include the development and promulgation of International Standards of Auditing and the Code of Ethics, education guidelines, studies and statements for the public sector and of assistance to those accountants in business or involved with IT.

The confederation has 63 founder members from 51 different countries and 167 members in all around the world (<https://www.ifac.org>, 08.08.2014).

1.2.2 IFRS Studies in the U.S.A

Accounting developments were structured by both private and public sector in the U.S.A. The Securities Law and Securities Exchange Law which were published in 1933 and 1934 were the first steps in setting a regular financial market in the U.S.A. According to these legislations, the board has an oversight authority on the financial markets. However, the effects of these laws and amendments were limited and accounting development had acceleration after Financial Accounting Standards Board (hereafter, FASB) and International Organization of Securities Commission (hereafter, IOSCO) were founded in the U.S.A. These boards have still key roles in accounting area in the USA.

1.2.2.1 Financial Accounting Standards Board (FASB)

FASB which was founded in 1973 operates as a privately held company and is responsible publishing the new standards and developing and restructuring the current standards in the USA. These standards are named as US GAAP and officially recognized by the Securities and Exchange Commission and the Institute of Certified Public Accountants (FASB, 2002 b). These standards have to be applied by both American companies and foreign companies that are quoted in American Stock Exchange.

1.2.2.2 International Organization of Securities Commission (IOSCO)

IOSCO is an important actor of accounting development process not only in the U.S.A but also in all around the world. The International Organization of Securities Commissions (IOSCO) is a confederation of securities market regulators in countries. The commission was founded in 1983 by aiming to organize both the North and South America Financial Markets and it had 11 members from the North and South America at first. However, some other countries such as France, England, Korea and Indonesia also became a member of IOSCO later. Today it has 117 members from all around the world. There are also 12 associate members and 75 affiliate members that involve the projects of IOSCO (IOSCO, <http://www.iosco.org/lists/>, 03.07.2012). The commission has an affect nearly %95 of world security markets and accepted as one

of the 12 key organization which aims to set a strong financial system in all around the world. (Appendix 2. Financial Standards That Enhances the Financial Quality)

IOSCO has not a legal authority on countries to apply its decisions and arrangements. Its issues are just advices for applying (Ulusan, 2005:18).

IOSCO has three committees which are Technical Committee, Executive Committee and Emerging Markets Committee, respectively. These committees work parallel with IASC and IASB for reporting globalization. In this process, IOSCO accepted accounting standards in 2000.

These committees gave support the reporting standardization by publishing a comprehensive principle guide about security markets and security reporting. IOSCO has been active in encouraging and promoting the improvement and quality of IAS for years.

An important event was also the cooperation between the IASC and the IOSCO in 1988 in order to allow a company to list its securities in any foreign market according to one specific type of reporting financial statements conforming to IASs (Cairns, 1997:333). The co-operation between the IASC and IOSCO has been eminently important for the widespread acceptance of IAS.

The commission also built an IFRS database in which all countries can use the data, comment about standards, and share the standards that are already in use and planned to be published.

1.2.3 IFRS Studies in Europe

Development of accounting harmonization in Europe can be divided into three phases;

1. Napoleon's Laws Phase from 1807 (Code de Commerce)
2. European Economic Community ("Europe Union") Directives Phase from 1978 (Directive IV and VII)
3. US GAAP and IAS Phase (EU Commission publication)

Napoleon's Law in 1807, as mentioned before, is the first phase of the international accounting harmonization in European Union. Companies adopted this law were obliged to present the balance sheet and profit and loss accounts.

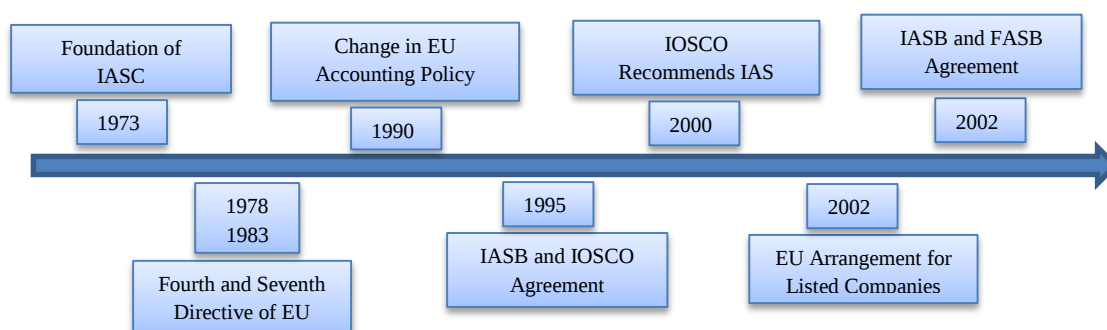
French, Belgium and Netherlands are the first countries that are adopting to this law. After the Germany and Sweden adoption, vast majority of continental European countries also adopted the French Law.

European Economic Community Directives are the second phase on the way towards the internationalization of accounting systems across Europe followed the foundation of the European Community (EC) as based on the 1957 signed Treaty Establishing the European Community (EEC) (Haller, 2002: 155). After its foundation, 4th and 7th directives were issued by ECC, respectively. Especially in the late 1990s, when the European Union (EU) was bent on creating an internal capital market, an alternative accounting system to local GAAPs increased.

Founding of IASC, European Directives and Restructuring of IASC as IASB are the other key steps in third phase of setting a common financial accounting system in the European Union. At first, IASC was founded in 1973 and started to develop accounting standards. In 2001, the committee was renamed as IASB after the IASC was restructured.

Figure 2 in below shows the main events and agreements in the accounting harmonization process in European Union and also all around the world.

Figure 2. Main Events in Harmonization Process in EU



Source: Fritz and Christina, 2003, p.48

1.2.3.1 International Accounting Standards Committee (IASC)

IASC which was founded in 1973 is the first attempt to set accounting standards internationally. Australia, Canada, France, Japan, Mexico, the Netherlands and the United Kingdom with Ireland, the United States and West Germany are the main brains behind the founding of the IASC (<http://www.iasplus.com/en/resources/ifrsf/history/resource25>). IASC is an independent accounting body which has close relationship with International Federation of Accountants (IFAC) dating back in 1983 (Norbes and Parker, 2004). A member of International Federation of Accountants is also accepted as an IASC member since 1982. Today IAS has 110 member countries (IGAAP; 2013:7).

Main responsibilities and objectives of IASC are summarized in the 2nd paragraph of its articles of association (IASC, 1992);

- a) To develop a standard set which aims to increase the public interest, quality, transparency and comparability of financial reports
- b) To encourage the all countries for applying these standards
- c) To converge the local accounting standards and international accounting standards

The committee consisted of 5 major components that are;

- a) IASC Board
- b) Consultative Group
- c) Advisory Council
- d) Standing Interpretations Committee
- e) Steering Committees

Board is represented by 13 member countries' delegates and the members of IOSCO, FASB and EC. IFAC had an observer status on the meetings (Sacho and Oberhoster, 2008:122).

IASC Board monitors the whole economy and when a new standard is needed, standard setting committee prepared a draft of the standard. After that, this draft was sent to IASC member countries. After the each country commented about the draft,

the board finalized the new standard and if the three of four of the members voted positively, the new standard was applied.

Consultative Group acted as an advisory body representing a wide range of international organizations with an interest in accounting.

Standing Interpretations Committee (hereafter, “SIC”) operates on developed and invited public comment on interpretations of IASC Standards and subjected to final approval by the IASC Board.

Advisory Council acted as an oversight body despite its name. It had the same mission with the Board of Trustees in the new form of IASB.

Steering Committees were expert task forces for individual agenda projects.

IASC's progress can be categorized into three phases, (1) 1973 - 1988, development of a common body of standards; (2) 1989 - 1995, the comparability / improvements project; and (3) 1995 - 2001, the core standard project (Epstein and Mirza; 1997).

IASC published 41 accounting standards and 33 interpretations from 1973 to 2001. While the standards aimed to set a unique accounting area, interpretations aimed to make clearance about some standards that could not be understood clearly.

Table 2. Standards Published by IASC

IAS	1	Presentation
IAS	2	Inventory
IAS	7	Cash Flow Statements
IAS	8	Accounting Policies, Changes in Accounting Estimates and Errors
IAS	10	Events After the Balance Sheet Date
IAS	11	Construction Contracts
IAS	12	Accounting for Taxes on Income
IAS	14	Segment Reporting
IAS	16	Property, Plant and Equipment
IAS	17	Accounting for Leases
IAS	18	Revenue
IAS	19	Employee Benefits
IAS	20	Accounting for Government grants and disclosure of government assistance

IAS	21	The Effects of Changes in Foreign Exchange Rates
IAS	22	Business Combination
IAS	23	Borrowing Costs
IAS	24	Related Party Disclosures
IAS	26	Accounting and Reporting by Retirement Benefit Plans
IAS	27	Consolidated Financial Statements and Accounting for Investments in Subsidiaries
IAS	28	Accounting for Investments in Associates
IAS	29	Financial Reporting in hyperinflationary economies
IAS	30	Disclosures in the Financial Statements of Banks
IAS	31	Financial Reporting of Interests in Joint Ventures
IAS	32	Financial Instruments: Disclosure and Presentation
IAS	33	Earnings Per Share
IAS	34	Interim Reporting
IAS	35	Discontinuing Operations
IAS	36	Impairment of Assets
IAS	37	Provisions, Contingent Liabilities and the Contingent Assets
IAS	38	Intangible Assets
IAS	39	Financial Instruments: Recognition and Measurement
IAS	40	Investment Property
IAS	41	Agriculture

Source: <http://www.iasb.org>

Although the standards setting were a success story of IASC, harmonization objective was not achieved since the board did not have a legal authority on countries to make them adopt and apply the standards.

According to IASC's Member Responsibility Agreement, member countries perform to integrate their local standards to international standardization in best endeavor. However, "best endeavors" was interpreted differently in different countries, and most country delegations did not include a representative of the national standard setter even if there were one in the country. The sponsoring accounting body (or bodies) might have had only a limited degree of influence, if any, on their country's accounting practice.

From its foundation to 2000, IASC operated under IFAC's wings. However, they separated from each other after IASC was reorganized and became IASB in 2001.

1.2.3.2 International Accounting Standards Board (IASB)

IASB was founded in 2001 by changing both the former structure and legal entity of IASC.

The IASB differs from the IASC Board, its predecessor body, in several key areas:

- Unlike the IASC Board, IASB is governed more professionally by a group of trustees of diverse geographic and functional backgrounds who are independent of the accounting profession.
- IASB Board usually meets each month while IASC Board only met four times a year. This affects the efficiency of studies.
- IASB Board members have appointed based on technical skill and background experience while IASC Board members were individuals who are representatives of specific national accountancy bodies or other organizations. (IFRS Practical Implementation Guide and Workbook, Wiley Second Edition; 2008:4)

The board operates as a standard setting body of IASCF. On the contrary to IASCF, IASB has an independent structure and centered in London in England.

IASB accepted all standards that IASC published before. In 2002, SIC is changed as International Financial Reporting Interpretations Committee (hereafter, IFRIC) whereas its responsibilities are still going on without any change.

IASB's responsibilities are summarized as follow (<http://www.ifrs.org/The-organisation/Pages/IFRS-Foundation-and-the-IASB.aspx>)

- a) Publishing new reporting standards to increase the transparency, quality and understandability of financial statements
- b) Converging the local accounting standards of countries and international accounting and financial reporting standards
- c) Publishing the new standards and developing current standards
- d) Approving the comments of IFRIC about new standards
- e) Monitoring and analyzing of new standards whether a conflict occurs between local standards of countries

After restructuring of IASC, its management structure was also changed. Table 3 in below shows the old and new structure forms comparatively and also IASB's new structure in detail.

Table 3. IASC and IASCF Structure Comparison

International Accounting Standards Committee (IASC)		International Accounting Standards Committee Foundation (IASCF)
Advisory Council	➡	The Trustees
Consultative Group	➡	SAC
IASC Board	➡	IASB
SIC	➡	IFRIC
Steering Committees	➡	Working Groups
		IASCF Monitoring Board

Source: <http://www.iasplus.com>

Trustees of IASC Foundation is responsible for appointing members of the IASB, the IFRS Interpretations Committee and the IFRS Advisory Council; establishing and amending the operating procedures, consultative arrangements and due process for the IASB, the Interpretations Committee and the Advisory Council; reviewing annually the strategy of the IASB and assessing its effectiveness in order to ensure the financing of the IFRS Foundation and approve annually its budget (<http://www.ifrs.org>, 08.03.2012).

The Board is responsible for setting and publishing new standards. 15 experts with an appropriate mix of recent practical experience in setting accounting standards, in preparing, auditing, or using financial reports, and in accounting education.

The board meets monthly and discusses new projects to develop or to set standards. The IFRS Advisory Council provides a forum for the IASB to consult a wide range of interested parties affected by the IASB's work, with the objective of advising the Board on agenda decisions and priorities in the Board's work, informing the Board of the views of the organizations and individuals on the Council on major standard-setting projects, giving other advice to the Board or to the Trustees (<http://www.iasplus.com/en/resources/ifrs-advisory-council>, 05.08.2013). The IFRS Advisory Council normally meets four times a year for two days each meeting.

Its aim is to review on a timely basis widespread accounting issues that have arisen within the context of current International Financial Reporting Standards (IFRSs). The committee works for consensus on the appropriate accounting treatment (IFRIC Interpretations) and providing authoritative guidance on those issues. The Interpretations Committee comprises 14 voting members drawn from a variety of countries and professional backgrounds. They are appointed by the Trustees of the IFRS Foundation and are selected for their ability to maintain an awareness of current issues as they arise and the technical ability to resolve them. (<http://www.ifrs.org/>, 09.11.2011)

The IASCF Monitoring Board is established in 2009. The Board aims (<http://www.ifrs.org/>, 09.11.2011);

- To monitor and reinforce the public interest oversight function of the IASCF, while preserving the independence of the IASB and
- To cooperate the promotion of the sustainable development of International Financial Reporting Standards as a high-quality set of global accounting standards.

The board is a group of capital markets authorities that are responsible for setting the form and content of financial reporting in their jurisdictions, have a responsibility to protect and advance the public interest and are strongly committed to support the development of high quality international accounting standards. The board is not a legal entity.

Members of monitoring board are Emerging Markets Committee of the International Organization of Securities Commissions (IOSCO), European Commission, IOSCO Technical Committee, Financial Services Agency of Japan, United States Securities and Exchange Commission.

In recent years, FASB and IASB have a convergence project to set unique international accounting and financial reporting standards.

The announcement of IASB and FASB to work together in order to design a single set of global accounting rules was made in 2002 after they jointly issued a memorandum known as Norwalk Agreements by which the two boards pledged convergence of their accounting standards and coordination of their work program (Godfrey and Chalmers 2007). Today, SEC does not allow the financial statements in

which IAS is applied and it requires the reconciliation to U.S.-GAAP. However, an acceptance of IAS on that market without reconciliation will motivate the companies as well as regulators of other countries for further consideration of the usage of IAS.

1.2.3.3 European Union and European Commission

European Union was founded in 1957 by Rome Agreement. The initial step on the way towards the internationalization of accounting systems across Europe followed the foundation of the European Community (EC) as based on the 1957 signed Treaty Establishing the European Community (EEC) (Haller, 2002: 155).

The EU aims to set a common market and common legislation among the union members. Within the context of setting a common financial market, one of its aims is to set unique accounting and reporting legislation.

The Union made the initial arrangements via directives. Table 4 in below shows the directives that arrange the financial and legal issues in the European Union.

Table 4. EU Company Law Directives

<i>Directives</i>		<i>No.</i>	<i>Date</i>	<i>Issues</i>
<i>First Directive</i>	<i>Council</i>	68/151/EEC	1968	Registration of Companies and Mandatory Publication of Specified Company Documents
<i>Second Directive</i>	<i>Council</i>	77/91/EEC	1976	Safeguards in Respect to Formation of Public Companies
<i>Third Directive</i>	<i>Council</i>	78/855/EEC	1978	Mergers Between Two Public Companies in Member States
<i>Fourth Directive</i>	<i>Council</i>	78/660/EEC	1978	Annual Accounts Of Individual Companies Complemented by The Seventh Directive
<i>Sixth Directive</i>	<i>Council</i>	82/891/EEC	1982	Concerning The Division Of Public Limited Liability Companies
<i>Seventh Directive</i>	<i>Council</i>	83/349/EEC	1983	Consolidated Accounts
<i>Eighth Directive</i>	<i>Council</i>	84/253/EEC	1984	Qualifications Of Persons Responsible For Carrying Out The Statutory Audits Of Accounting Documents

<i>Eleventh Directive</i>	<i>Council</i>	89/666/EEC	1989	Disclosure Requirements of Branches
<i>Thirteenth Council Directive</i>			1989	Regulation of Public Takeover Bids

Source: Pagell and Halperin, 1999, p.60

As Table 4 shows, the instruments to gain this harmonization were the Fourth (Council of the EC, 1978) and Seventh (Council of the EC, 1983) EC Directives which the Member States were obliged to put into practice within the scope of national law.

According to 4th directive, annual accounts which provide a true financial view, reporting structure, reporting scope, valuation principles of assets and liabilities and controlling issues were aimed at harmonizing.

The Seventh Directive on consolidated accounts determines the identification of groups, scope of group accounts and obligation to prepare, audit and publish group financial statements as well as consolidation-related methods (Haller, 2002:155).

Table 5 in below shows the implementation dates of fourth and seventh directives into national law of member states.

Table 5. Adoption Process of EU Companies to 4th and 7th Directives

Member State	Fourth Directive	Seventh Directive	Member State	Fourth Directive	Seventh Directive
Austria	1996	1996	Italy	1991	1991
Belgium	1984	1990	Luxembourg	1984	1988
Denmark	1981	1990	Netherlands	1983	1989
Finland	1992	1992	Portugal	1989	1991
France	1983	1985	Spain	1989	1991
Germany	1985	1985	Sweden	1995	1995
Greece	1986	1986	UK	1981	1989
Ireland	1986	1992			

Since these directives were lack of some technical strength and technical updates and also member countries could not import them in their local markets (Çelik, 2008:6).

European Union was founded by European Economic Community members by Maastricht Agreement in 1995. The new structure has three boards which are European Parliament, European Union Council and European Commission, respectively. While the European Parliament and European Union Council operate in legislation operation, European Commission operates in financial issues in Union.

European Commission made its first attempt to harmonize the accounting among member states by supporting both the IASC and IOSCO projects (Prather-Kinsey et al. 2008:4).

Awareness within the EU of the need to make progress towards achieving international comparability resulted in the approval of Regulation 1606/2002, which provides for the mandatory application of International Financial Reporting Standards (IFRS) by business groups listed on European stock markets as of January 2005.

In 2005, in accordance with plan, the vast majority of the some 8,000 listed companies in an enlarged EU switched from their national GAAP to IFRS in their consolidated financial statements (Deloitte Turkey, 2008:20). Despite not being an EU member, some European Economic Area countries such as Izland, Liechtenstein and Norway also made some regulations to make their companies adopt IAS / IFRS and SIC / IFRIC.

IAS adoption by the European Union is one of the biggest events in the history of financial reporting. This could make IAS the most widely accepted financial accounting standard in the world (Stergios et al., 2011:2).

After EU members started to adopt IFRS, IFAC members also adopted IFRS by converging their local standards into IFRS.

Countries adopted IFRS in different adoption types. Some countries adopted and set full IFRS in their local accounting system while some countries mandate it for only public companies. In Turkey, IFRS are mandatory only for public companies since 2005. The standards have been fully translated and have been used since 2008 in Borsa Istanbul.

1.2.4 IFRS Studies for the Small and Medium Sized Enterprises

Member states of European Union have been applying IFRS since 2005. However, these standards were only mandatory for quoted companies in stock exchanges. It means that, the standards do not have a wide effect especially on SMEs whose stocks are not exchanged in financial markets.

Regarding the aim of harmonization and standardization of accounting and financial reporting, SMEs are needed to be considered.

IFRS for SMEs were specifically designed in order to meet the needs of entities with no public accountability. Not “publicly accountable” entities represent more than 95% of all companies globally.

Within 5 years after full set of IFRS was published, the Board issued a pronouncement of a different kind in 2009: a 230-page, self-contained standard on IFRS for Small and Medium-Sized Entities (SMEs). Its aim is to simplify the IASB’s standards for use by SMEs (Zeff, 2012: 831).

This standard provides an adoption of the “full” International Financial Reporting Standards (IFRS), which were designed with publicly traded entities in mind, for the environment of private firms. However, SME definition is different for each institution and each country. In IFRS for SMEs, SME is defined as not having an obligation to publish their financial statements to public (http://www.ifrs.com/overview/IFRS_SMES/IFRS_SMES_FAQ.html#q3, 06.06.2013). In other words, SMEs are defined as reporting their financial statements for general purpose to financial information users.

1.2.5 The Role of Other International Institutions

IASC, the former of IASB, IOSCO, IFAC and EU are the main actors in accounting harmonization and standardization in the world.

Besides these institutions, some other mechanisms such as United Nation (hereafter, UN) and The Organization for Economic Co-operation and Development (hereafter, OECD) have also involved in the harmonization and standardization of accounting process.

This co-ordination shows that not only private bodies (like IASB and FASB) but also international public bodies and institutions (like UN, OECD and EU Commission) are interested in the development of accounting area.

The role of the OECD is more than a catalyst which means that it is looking at the Accounting practices of member countries in order to encourage greater harmonization and comparability of financial statements (Nobes et al., 1997).

1.2.6 IFRS Studies in Turkey

Financial bodies and institutions in Turkey also make some legal amendments in their legislations to adopt harmonization globally in years.

Trade Legislation which was published in 1850 is the first accounting amendment in Turkey (Simga-Mugan, 1995:22). It was prepared parallel to the France Legislation and used in the years between 1850 and 1925.

In 1926, second Turkish Trade Law was published. Despite the French Legislation effect on previous amendment, second accounting law was based on German Trade and Company Laws (Elitaş and Üç, 2008:3; Alp and Üstündağ, 2009:6). As a result of, a systematical accounting approach and accounting balance chart is organized by considering German Accounting system in Turkey and all institutions used this system at first.

Turkey's accounting system is affected by American and Anglo – Saxon approach in 1950s. In the years between 1950 and 1980, there were some conflicts in 6762 numbered Turkish Trade Law and Tax Law since tax based accounting and tax

based reporting were used widely since the companies adopted the tax law in principle instead 6762 numbered Turkish Trade Law. However, this system was not enough for comprehensive financial presentation because companies became more international or multinational after 1980s therefore a new accounting system was needed.

After Borsa Istanbul was established, capital market operations increased and financial information and financial reporting became more important. During the membership process for Europe Union, CMB issued a reporting arrangement, Serial X No.25 in 2003 by considering the EU IAS / IFRS amendments. This communique consisted of 727 entries and covered all international accounting standards and international financial reporting standards that were also accepted in EU. According to this communique of CMB, beginning from 2005 companies quoted in capital markets had to prepare their financial statements according to Seri X No.25.

1.2.6.1 Studies of Undersecretariat of Treasury and Insurance Auditing Board

Insurance and reinsurance companies in Turkey used Uniform Chart of Accounts from 01.01.1994 to 31.12.2005 (Usta, 2007:33).

According to Undersecretariat of Treasury Insurance Authority communiques which were published in 31.12.2004 and 25687 numbered and 17.09.2005 and numbered 25939, IAS and IFRS became mandatory for the companies that operate in insurance and reinsurance industry from 01.01.2008 and financial reports are prepared and published according to 18.04.2008 and 26851 numbered communique which arranges the usage of IAS in financial reports in insurance and reinsurance companies (www.tsrsb.org.tr/maliyet+ve+muhasebe/sigortacılık+hesap+planı, 21.04.2013).

1.2.6.2 Banking Regulation and Supervision Agency Studies (BRSA)

Banking Regulation and Supervision Agency Projects (hereafter, BRSA) was established in 23th June 1999 and started to operate in 31st August 2000. It has an institutional profile and also has a financial self-administration.

BRSA issued Accounting Practices Regulation in 2002 with 19 communiqué. These communiqués consist of IAS / IFRS amendments in parallel with EU and these communiqués were started to be used by financial institutions in Turkey from 01.01.2002 (Başpınar, 2004:52; İbiş-Özkan; 2006:34).

In order to achieve full integration with EU, these communiqué and the regulation are removed by 1 numbered Communiqué which is “About the Principles of Preparation and Presentation of Financial Statements and Conceptual Framework”. This communiqué is mostly but not fully integrated with the full set of IFRS in preparing consolidated financial statements in 08.11.2006 and 26340 numbered decision (TASB, 2008:51).

The board canceled its reporting standards and accepted the accounting and reporting standards of Turkish Accounting Standards Board for the financial institutions in 2006. Regarding this regulation, all financial institutions have to prepare their financial statements according to IFRS (World Bank, 2007:14).

1.2.6.3 Projects for Public Institutions

After 1st Accounting System Practice Communiqué was issued in 1992, a common chart of accounts was published for all public companies.

In February 13, 2005 a communiqué for the formation of Government Accounting Standards Board was issued and the working principles and procedure of institutions were determined by the government. According to this communiqué, the board will operate under Ministry of Finance and was assigned to prepare and issue the accounting and reporting standards for institutions and administrations, also to compose chart of accounts, the periods, format and types of financial reporting.

1.2.6.4 Projects of Turkish Accounting and Auditing Standards Board (TAASB)

Turkey Accounting and Assurance Standards Board (hereafter, TAASB) was established in 9th February of 1994. TAASB is the first board that represents and deals with international accounting standards and international financial reporting standards. The board issued the accounting and reporting standards in Turkey in full convergence

with IAS / IFRS. All standards that were issued by TAASB are shown in Table 6 below;

Table 6. Turkish Accounting Standards Published by TAASB

<i>Standard Code</i>	<i>Name of The Standards</i>	<i>Issued</i>
<i>TMS 1</i>	Presentation of Financial Statements	01.01.2000
<i>TMS 2</i>	Financial Reporting in Hyperinflationary Economies	01.01.1997
<i>TMS 3</i>	Statement of Cash Flows	01.01.1997
<i>TMS 4</i>	Revenue and Other Income	01.01.1997
<i>TMS 5</i>	Consolidated Financial Statements	01.01.1997
<i>TMS 6</i>	Investments in Associates	01.01.1997
<i>TMS 7</i>	Accounting for Investments	01.01.1997
<i>TMS 8</i>	Property, Plant and Equipment and Intangible Assets	01.01.1997
<i>TMS 9</i>	Depreciation Accounting	01.01.1997
<i>TMS 10</i>	Accounting Policies, Changes in Accounting Estimates and Errors in Net Profit / Loss for the Period	01.01.1997
<i>TMS 11</i>	Operating Segments	01.01.1997
<i>TMS 12</i>	The Effects of Changes in Foreign Exchange Rates	01.01.2000
<i>TMS 13</i>	Inventories	01.01.2000
<i>TMS 14</i>	Borrowing Costs	01.01.2000
<i>TMS 15</i>	Research and Development Expenses	01.01.2000
<i>TMS 16</i>		01.01.2002
<i>TMS 17</i>	Leases	01.01.2002
<i>TMS 18</i>	Construction Contracts	01.01.2002
<i>TMS 19</i>	Provisions, Contingent Liabilities and Contingent Assets	01.01.2002

Source: <http://www.TASB.gov.tr>, 02.10.2010

Despite its operations in full convergence with IAS / IFRS, the board did not have an oversight authority on companies. Therefore, the board was reorganized and

transformed to Turkish Accounting Standards Board which has more authority on companies.

1.2.6.5 Studies of Turkey Accounting Standards Board (TASB)

Turkish Accounting Standards Board (Hereafter, TASB) was founded by 2499 numbered law in 18th December 1999. According to this communique, TASB aims to publish accounting standards in order to increase the reliability, comparability, understandability and relevance of the audited financial statements' presentations.

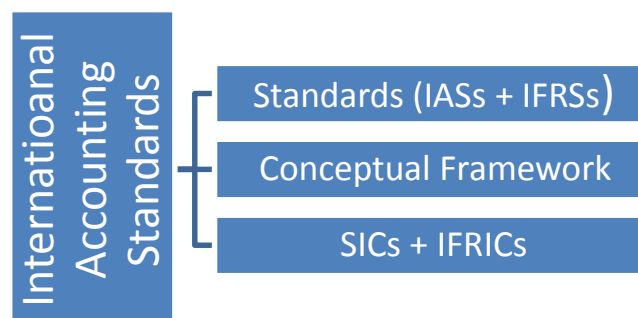
Being authorized as the only legal authority and giving a legal power to publish all accounting and reporting amendments, accounting harmonization and integration with European Union accelerated.

The board is consisted of members from different departments of capital markets and was audited by Turkish Court of Accounts.

The board issued its first communique which is called conceptual framework, in 16th January of 2005 and also accepted all IASs published by IASCF between the years 1973 and 2001 with the name of National Accounting Standards (UMS). IFRSs published by IASB were also accepted by TASB as the name of Turkey Financial Reporting Standards (TFRS). In addition, SICs and IFRICs were also accepted and published by TASB with the name of "interpretations of standards".

As it was shown in Figure 3, TMS / TFRS set is consisted of accounting standards, its arguments, its practice manual, explaining examples and appendixes.

Figure 3. International Financial Reporting Standards



Source: <http://www.ifrs.org>

1.2.6.6 Studies of Capital Markets Board (CMB) in Turkey

Capital Markets Board of Turkey (CMB) is the regulatory and supervisory authority in charge of the securities markets in Turkey (SPK, <http://www.spk.gov.tr>, 01.10.2012). Empowered by the Capital Markets Law (CML), which was enacted in 1981, the CMB has been making detailed regulations for organizing the markets and developing capital market instruments and institutions for the past thirty years in Turkey. Foundation of CMB is an important part of financial reporting integration in global markets since the board publishes the communique to make companies more transparent financially and also increase their corporate governance level. Before the TASB was founded, the board had an authority to issue the reporting standards for the companies quoted in BIST.

The board published the “Principles and Rules of Financial Statements of Reporting in Capital Markets” by the numbered 20064 and dated 29th January 1989. This communique made IFRS adoption mandatory for BIST companies.

Although this communique was published to integrate the global developments, there were still some differences between local and international practices. After, European Union made the IAS / IFRS for stock exchange companies which had to prepare consolidated financial statements mandatory, CMB also made an extra amendment for BIST companies by publishing the Serial X Numbered 25 Communique which made the IAS / IFRS for all BIST companies in 15th November of 2003. Although the standards in this communique were not fully integrated with IAS / IFRS, they were very close the international accounting and financial reporting standards and companies in BIST had to prepare and publish their financial statements by starting 1st January of 2005.

CMB issued a new communique in 2008 on financial reporting in capital markets. This communique refers the full set IAS / IFRS and make mandatory the standards which were fully translated into Turkish.

Table 7 below shows the milestones of accounting developments in Turkey.

Table 7. Highlights of Accounting Development in Turkey

<i>Capital Markets Board</i>	1989	Issued the “Principles and Rules of Financial Statements of Reporting in Capital Markets”
<i>Turkish Accounting and Auditing Standards Board (TAASB)</i>	1994	Established in 1994 and issued the accounting and reporting standards in Turkey in full convergence with IAS / IFRS
<i>Banking Regulation and Supervision Agency Studies (BRSA)</i>	2002	Issued “Accounting Practices Regulation” in 2002 with 19 communique. These communiques consists of IAS / IFRS amendments in parallel with EU and these communique were started to be used by financial institutions in Turkey from 01.01.2002
<i>Capital Markets Board</i>	2003	Issued “Serial X Numbered 25 Communique”
<i>Undersecretariat of Treasury and Insurance Auditing Board</i>	2004 - 2005	Issued the communiques that make IFRS adoption mandatory for insurance and reinsurance companies
<i>Turkish Accounting Standards Board (TASB)</i>	2005	Board issued its first communique which is called conceptual framework, in 16th January of 2005 and also accepted all IASs published by IASCF between the years 1973 and 2001 with the name of National Accounting Standards (UMS).
<i>Capital Markets Board</i>	2008	Issued Serial XI No.29 Communique
<i>Public Oversight Board</i>	2011	Established and Became the unique authority in Auditing and Financial Reporting

1.3 INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS)

1.3.1 Main Concepts of IFRS

Increasing importance of financial information and the number of its users needs additional requirement in financial reporting. IFRS has a significant role by increasing the functionality to fulfill the requirements of society and capital markets of accounting as a social structure. In this context, IASB which is accepted as one-thought-school publishes global financial reporting standards so that each financial report is prepared under unique set of standards in order to help financial information users in their decisions.

Financial information users can be categorized as follows; (Wiley, 2010)

Current and potential investors (shareholders) are the early users of financial information so that they are concerned by the risk inherent in their investment and its profitability. They seek information to determine if they should buy, hold or sell shares in a particular company. Shareholders also want to estimate the company's ability to pay dividends.

Creditors need to have knowledge about the strength of a company financially to determine whether their loans and interest related thereto will be paid at maturity dates.

Suppliers need to have knowledge about credit worthiness of a business to supply goods on credit.

Customers need to be informed on the stability and continuity of the operations of the company that employs them. They are also concerned by the profitability of the company, reflecting its ability to pay employees, provide benefits on retirement and employment opportunities.

States and their agencies care about including the allocation of resources generated by business. They especially focus on the tax based information of financial statements.

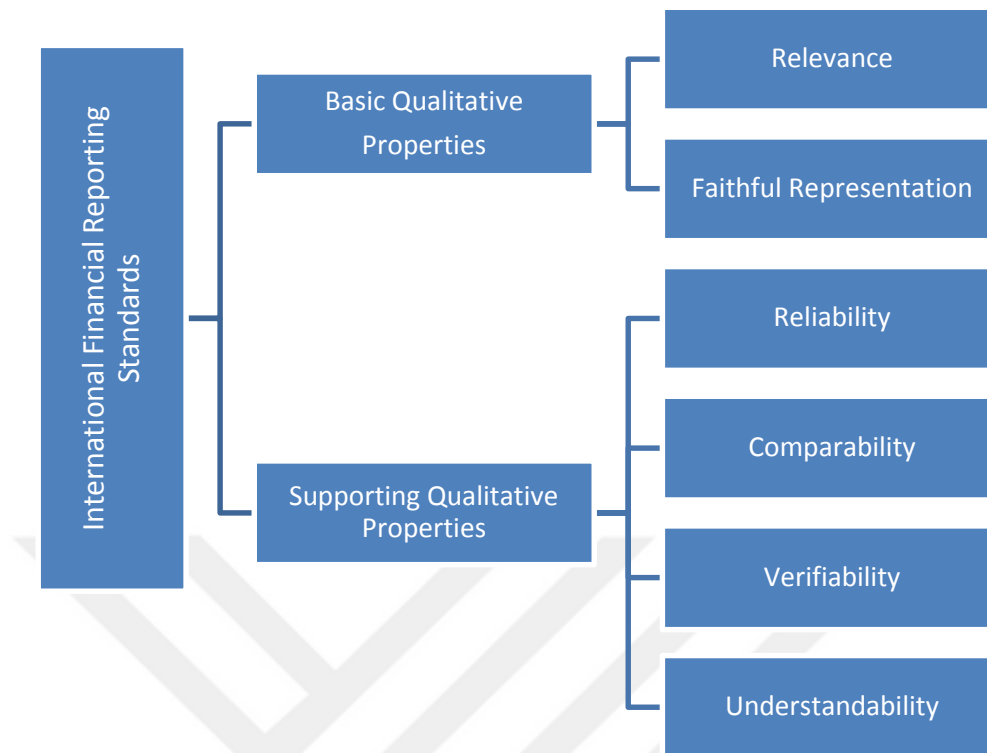
The public are interested in the firm's activities, because it contributes substantially to the local economy, including employing a large staff or using local suppliers. The financial statements can inform them of trends and recent changes to the company's prosperity and the extent of its activities

As mentioned before, after IASC was reorganized, its name was changed as IASB and new standards were published with the name of International Financial Reporting Standards whereas the previous standards were named as IAS. This name change from IAS to IFRS is a step of setting a wider and more global reporting function for the accounting. On the contrary to previous, unique reporting language is now more important than unique accounting system. While companies can use any accounting system in local, they have to report the financial statements according to IFRS as a common reporting language in world.

International Financial Reporting Standards are considered as "principle based" set of standards that establish broad rules for accounting. These principle based standards define guidelines with broader parameters or boundaries. Thus it requires an implementation team to exercise significant judgment and decision process for the underlying bases of conclusions.

While the standards have four main qualitative concepts which are relevance, reliability, understandability and comparability at first, these properties are changed within the context of IASB and FASB convergence project via Norwalk Agreement. Characteristics of financial information are classified into two main categories and their sub-categories. Basic qualitative characteristics and supporting qualitative characteristics are accepted as the main properties of both IASB and FASB.

Figure 4. Main Characteristics of IFRS



Source: <http://www.iasb.org>, 10.05.2014

1.3.2 Basic Qualitative Characteristics of IFRS

Relevance and Faithful Presentation are the basic qualitative properties of financial information. Basic qualitative properties represent the main factors that the financial information should have. If financial information does not have these properties, this information will not be healthy to use although it has other supporting qualitative properties.

1.3.2.1 Relevance

Relevance can be defined as the ability of the information to create a difference in the decision making (Sharayri and Momani, 2011: 43).

In IASB Framework, relevance is defined as “when it influences the economic decisions of users by helping them evaluate past, present or future events or confirming, or correcting, their past evaluations.” On the other hand, it is defined in FASB concepts statements no.2 Qualitative Characteristics of Accounting

Information, as “accounting information must be capable of making a difference in a decision by helping users to form predictions about the outcomes of past, present, and future events or to confirm or correct expectations,” and continues to define event and outcome.

Financial reporting is relevant when it influences the economic decisions of users, such as investors, employees, lenders, suppliers, customers or other agents.

1.3.2.2 Faithful Representation

Before the convergence project between IFRS and US GAAP, International Financial Reporting Standards only focused on the fair presentation. However, this definition was modified in convergence process. The new concept can be defined as complete, neutral and free from error reporting. Main characteristics of new concept are listed below:

- Financial information must be complete which means all information that a user needs to understand a financial report.
- Financial information must be neutral which means all information is without bias in the selection or presentation of financial information.
- Financial information must be free from error which means there are no errors in the information provided and reported process. However, free from error does not mean a perfect financial information and financial reporting.

1.3.3 Supporting Qualitative Characteristics

1.3.3.1 Reliability

Reliability is defined as “the property of information which confirms that such information is true and neutral to a logical extent and that the information truly represents what it claims to” (Sharayri and Momani, 2011: 43). Reliability is also related to the integrity and dependability of information.

For the accounting information to be reliable it should be prepared by faithful representation and also it should be neutral.

Accounting information should be reliable, which involves paying more attention to the concepts of disclosure, objectivity and neutrality of information so that decision makers can trust such information considered as true and real representation of the company's balance sheet, and also represent the company's operations as good as possible.

1.3.3.2 Comparability

Comparability is one of the qualitative characteristic of financial information that enables users to, identify and understand similarities in, and differences among, items. Information about an entity is considered to be more useful when it is comparable with similar information of other entities and with similar information of the same entity for different periods or dates. Regulatory culture, translation problems from its original language to local language and also accounting policies can cause the incomparable problem. Since it is a very difficult notion to understand even within a country, IASB has created the IFRIC which proposes official interpretations subject to approval by the IASB (Zeff, 2007:290).

1.3.3.3 Verifiability

Verifiability as a particularly important characteristic gives the credibility to financial information (Filus, 2013:114) It means that independent observers could reach consensus, although not necessarily complete agreement, that a particular depiction is a faithful representation.

Verification can be direct or indirect. Direct verification means verifying an amount or other representation through direct observation. Indirect verification means checking the inputs to a model, formula or other technique and recalculating the outputs using the same methodology (Mućko, 2007:242)

1.3.3.4 Understandability

Understandability includes users' abilities and aggregation and classification. According to framework of IFRS, users must have a reasonable knowledge of business, economic activities, review and analyses the information diligently.

Disclosure level is one of the key factor to make the financial statements more understandable. However, complex financial information should not be excluded from financial reports in order to make those financial reports easier to understand, because the resulting information would be incomplete and, therefore, potentially misleading

1.3.3.5 Timeliness

Timeliness of financial reports is one of the qualitative characteristics of financial reporting because determines the relevancy of the information and influences the decisions made by the users and beneficiaries of financial reports. Information of the financial reports, however, is required to be made available within a short period of time; otherwise, it loses some of its economic value for financial information users (Al-Ajmi, 2008).

Timeliness in conceptual framework in IFRS means having information available to decision-makers in time to be capable of influencing their decisions.

1.3.4 Economic Determinants and Consequences of IFRS

After the International Accounting Standards Board (IASB) was established in 2001, European Union (EU) member states committed to require IFRS for all listed corporations in their jurisdictions being effective from the year 2005 (EC, 2002). When the first IFRS was issued in 2003, EU required compliance with the international standards for 19 countries. Since 2003 till today, nearly 70 countries (including EU countries) made IFRS mandatory for all listed companies. About 23 countries have either mandated IFRS for some listed companies or allow listed companies to voluntarily adopt IFRS (Ramanna and Sletten; 2009:3). Moreover, as of 2013, at least 40 countries also required domestically developed accounting standards over IFRS. Brazil, Canada, China, Japan, India, and the U.S.A. apply both IFRS and require domestically developed accounting standards over IFRS.

1.3.4.1 Economic Determinants of Adopting IFRS

The adoption of IFRS around the world is growing rapidly within the aim of transparent and comparable financial information through a uniform set of standards for financial reporting.

In this adoption process, each country has its own motivations. Some countries easily adopts while some others needs more time for adopting new accounting regulations. According to La Porta et. al. (1998), there is a close relationship between a country's legal system and the quality of its accounting standards which means that the countries which have strong law legislation adopts IFRS easier than the others.

Other motivations can be classified into two main classes which are economic and political motivations, respectively.

Ramanna and Slaten (2009) investigated 102 non-EU countries to clarify the heterogeneity in countries' decisions to adopt IFRS and stated that both the economic and political reasons are important factors on adoption decision on IFRS. Countries aiming to maximize the benefits from economic integration in a given region are likely to adopt IFRS by increasing the adoption level to IFRS in that region. Further, the standard-setter power, EU integration are the main political reasons for IFRS adoption in non-EU countries.

Being a public or private-held company or operating in a less developed, emerging market or developed market affect the motivations of firms to adopt IFRS. Public firms in most countries in all around the world have been adopting IFRS mandatorily since the reporting legislation became parallel with IASB. On the other hand, firms whose stocks are not exchanged in financial markets adopt IFRS voluntarily by International integration and use international standards in accounting and auditing in order to be integrated to the international environment. According to the studies in the literature, firm size and ownership structure are the common factors in IFRS adoption voluntarily (Cuijpers and Buijink 2005, Gassen and Sellhorn 2006, Wu and Zhang 2009).

Dumontier, P. and Raffournier, B. (1998) examined the motivations for adopting IFRS voluntarily by testing 133 listed companies in Sweden and they found that the firm size, internationality, listing status, auditor type and ownership structure have positive influence on voluntary IFRS adoption. However, they found no significant relationship for leverage, profitability and capital intensity.

Gassen and Sellhorn (2006) investigated the determinants of German public companies that adopted IFRS voluntarily during the period 1998-2004. They found that the firm size, international exposure, ownership structure and being open to public are the main drivers of IFRS adoption.

Andre et. al. (2012) examined the determinants of voluntary adoption of IFRS UK unlisted firms and found that internationality, leverage, firm size and auditor reputation are the main factors of voluntary IFRS adoption. However, profitability, capital intensity, industry, growth, ownership structure and employee productivity are not related with the decision of voluntary IFRS adoption.

Bassemir (2012) investigated the motivations of German private firms for voluntary adoption of IFRS. Analyzing the 3.365 private firms within 14.000 firm years between the years 1998 and 2009, he stated that the main factors to adopt IFRS are external financing needs, governance system, organizational and informational complexity. Further, having more growth opportunities, being more leveraged, being younger firm and seeking to raise external capital are the main motivations for adopting IFRS.

Cuijpers et. al. (2002) also examined the determinants of voluntary adoption of non-local accounting principles such as U.S. GAAP or IFRS, for financial reporting by non-financial companies listed in the EU and found that the firms having more geographically dispersed operations and listed in U.S. exchange or EASDAQ exchange in Brussels are more likely to switch financial reporting system and adopt non-local GAAP voluntarily.

1.3.4.2 Economic Consequences of Adopting IFRS

Both the mandatory and voluntary IFRS adoption have significant financial impacts on companies' performances due to increased transparency, disclosure level and comparability of financial information.

Studies shows that adopting IFRS voluntarily reduce information asymmetry, costs of capital and insider trading (Diamond and Verrecchia, 1991:1327; Leuz and Verrecchia, 2000:120; Bhattacharya et. al. 2002: 675; Frankel and Li, 2004:231; Francis et al., 2004:968) improve efficiency of capital allocation (Bushman et al. 2006; Sun 2006), corporate governance (Bushman and Smith 2001), trading volumes, accounting quality (Barth et al. 2008:30, Hung and Subramanyam 2007:650) transparency and market liquidity (Daske et al.; 2008:68), increase financial performance such as profitability, growth potential (Iatridis, 2010:169) and helps investors to form expectations about future cash flows with reported earnings by decreasing forecast errors (Beuselinck et. al. 2009: 3; Atwood et. al., 2010: 19).

One of the main objectives of a firm is to increase its value by maximizing the profits. Thus, all the activities of organization are profit-seeking but also affected by both the regulation environment and operational environment. IFRS is also expected to have some impacts on firm value especially for the public firms. Next chapter explains the value concept, valuation methodologies and importance of parameters such as cost of capital in valuation process.

CHAPTER TWO

VALUE AND VALUATION CONCEPTS

2.1. VALUE AS A CONCEPT

Every asset, whether financial or real, has a value. For the successful investment and successful asset management, its value and its source are both considered.

Value and valuation concepts have been discussed since the economic life began in the world. Value is described in many different ways. As a concept, the value can be defined as the degree of usefulness or desirability of something, especially in comparison with other things, and is by definition subjective (Andriessen, 2005: 1). Mr. David and Mr. Shannon Pratt in their co-authored book “Business valuation and taxes, procedure, law and perspective” (John Wiley & Sons, Inc.) defines “value” in an interesting words;

“Like beauty, value is in the eye of the beholder. What is value to one may be inconsequential to another. In this regard, value is mere subjective perception.”

In terms of economy, value is defined as the sum of total utility of equity (Akyüz and Ertel, 1990:64). It is equal to the total asset quantity when it is exchanged. It is also exchange value which can be described as the total asset amount or the total currency amount economically.

Value is generally substituted by price in daily life. However, they both stand on quite a different footing and there is a significant difference between them. Price is the quantity agreed between the seller and the buyer in the sale of a company whereas the value is not found in accounting systems and is only determined by the perceptions about the company and industry, economies of scale and economies of current and future scope (Fernandez, 2007:13). That’s why value should not be confused with the price.

In related with the value concept, valuation can be described as the operation of calculation the value of an asset economically. In traditional meaning of this term is an estimate of what people will pay for a given piece of property (Hadley, 1928:175).

In parallel with these definitions, business valuation can be defined as an estimation or forming an opinion as to the fair market value of a business interest at a given point in time (<http://www.cga-pdnet.org/>, 08.10.2013).

Business valuation is initially performed by Berle and Means in 1932 in their “The Modern Corporation and Private Property” study. Jensen and Meckling also performed in business valuation in 1940s (Yavuz, 2012:90).

In both the academically literature and practical in business appraisal life, there are a large number of business valuation models and methods. The only common point of all of them is relying on judgment in valuation process. Furthermore, some assumptions for the future income are calculated (Swartz, 2006:11). Both the performing valuation and using a method has its own motivation.

2.2. VALUE CONCEPTS

There are different “value concepts” that are used in valuation process. Each value concept has its own methodology and needs its own data to measure the value.

2.2.1 Nominal (Par, Face) Value

Par value, also called as nominal value, is the own value of each share of the company that bears no relation to the market price of the shares which is determined by supply and demand. This value is usually the very first and fixed price of share.

2.2.2 Book Value

Book value is measured by dividing the total equity of company by the total share numbers since it mostly depends on historical value of assets. Price appreciation due are ignored. In addition, measure ignores the brand names, patents, technical know-how in intangible assets; so that it is not considered as a fair business valuation measure (Demir and Bahadır, 2007:69). Furthermore, it is highly affected by accounting policies of companies so that the comparability of financial statements is low. It ignores the positive or negative operating prospects of the firm and is often a poor proxy for market value (Chaplinsk, 2000:17).

2.2.3 Fair Value

Fair value concept became important in financial reporting in recent years (Prochazka, 2011:72). Especially in the last years, accounting standard setters around the world published a consultation paper such as the financial instruments and similar items that proposes basic and significant changes to the way financial instruments are reported in the accounts of companies (Chea, 2011:14).

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date in FAS 157 which is published in September 2006. This standard arranges the fair value measurement for companies for recognition or disclosure purposes under GAAP.

The International Accounting Standards Board (IASB) also published IFRS 13 in May 2011 which became effective at 1st January of 2013. As being one of the main features of IFRS, IFRS 13 became mandatory as of January 2013 the process of introducing IFRS 13 Fair Value measurement will become mandatory, although it has been already adopted in many countries. IFRS 13 defines the fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (<http://www.iasplus.com/en/standards/ifrs/ifrs13>).

Under fair value accounting, entities are obliged or permitted to measure particular assets and liabilities at their fair values as at the reporting dates. Fair value is a current market-based hypothetical value. However, this market value is not always directly observable (Prochazk, 2011:78).

2.2.4 Liquidation Value

The International Valuation Standards Committee defines liquidation value as value arising in "... a situation where a group of assets employed together in a business are offered for sale separately, usually following a closure of the business." (International Valuation Standards, 2007.).

Although it seems like similar to book value, liquidation value is calculated by deducting the liabilities of a company from the liquidation value of its assets. If the liquidation value per share for a company is greater than the current share price, then it usually means that the market is misvaluing the stock, although this is uncommon.

2.2.5 Market Value

International Valuation Standards defines the market value as the estimated amount for which a property should exchange on the date of valuation between a willing buyer and a willing seller in an arm's-length transaction after proper marketing wherein each party had acted knowledgeably, prudently, and without compulsion. (International Valuation Standards Committee, IVS1) It shows the market value of company's equity. Market value of a company is mostly higher than its net asset value since the future expectations are ignored in net asset value.

If the company's stock can be bought or sold in a proper stock exchange market then the market value of the company is its stock market value also.

2.2.6 Ongoing Business Value

According to ongoing value concept, the business is considered as having unlimited life and its value depends on the fluctuations or changes in positively or negatively of these three variables. It consists of different parameters. These parameters are cash generating power, intangible assets and value of investments that are planned in the future.

2.3. MOTIVATIONS OF VALUATION

Valuation which is basically defined as the money equivalent of assets is also defined as calculation the true value of the company in corporate finance literature. (Fernandez, 2004:9) Valuing a company affects different parts of a society, even the entire of it sometimes. Surprisingly, the value assigned to a private company is heavily influenced by the reason of the valuation question. In other words, the value of company depends on the reason of valuation. These are categorized as follows;

- To sell the company
- To raise capital from investors
- As part of a divorce settlement
- For a management buyout
- For estate planning
- For an employee stock ownership plan
- For taxation
- To calculate the liquidation value of company after its bankruptcy
- For privatization of a public company
- Marital dissolution
- Goodwill impairment

2.4. VALUATION APPROACHES

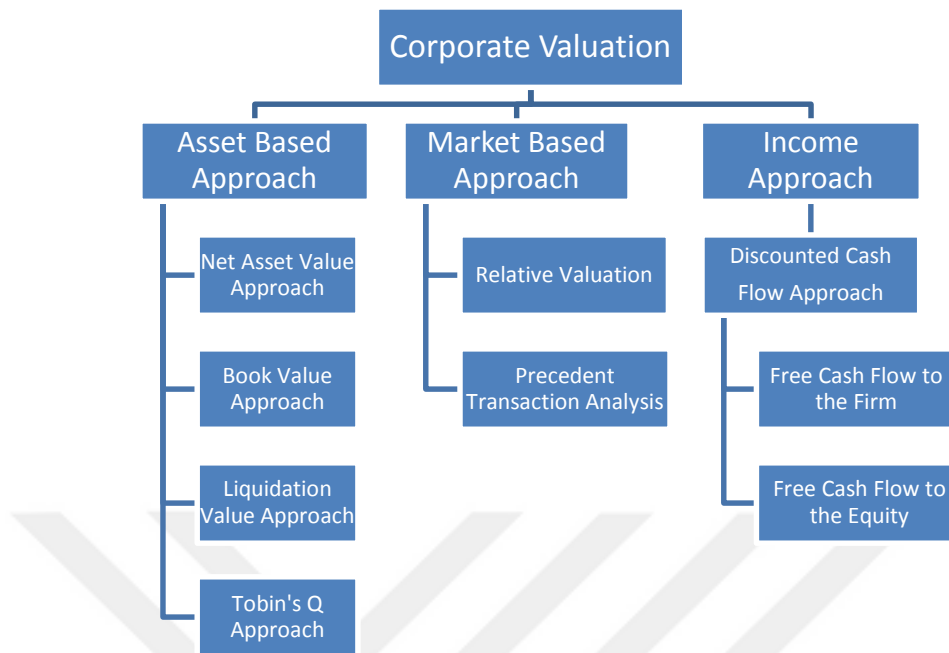
Valuation approach is a way of business valuation by using one or more valuation methods (Yürüdü, 2005:20).

Company valuation aims to define the price by means of a monetary equivalent. There are three approaches to financial valuation in the literature (Lee, 1996; Reilly and Schweih, 1999; Smith and Parr, 1994):

1. Asset (Cost) Approach
2. Market Approach
3. Income Approach

These approaches have also their sub-valuation methods and as a general rule and having different points of view, the final value of company arises after several valuation methods are applied. The Figure 5 below shows the list of three main valuation approaches and different main models involved in each approach.

Figure 5. Corporate Valuation Approaches and Methodologies



Source: Fernandez, 2002.

2.4.1 Asset Based Approaches

The asset based approaches are based on the value of the company's net assets. The data mostly depends on the historical values of balance sheet items.

2.4.1.1 Net Asset Value Approach

Net asset value which is also called as net asset value or the asset build-up model, is based on the economic principles of substitution and price equilibrium (Karavardar, 2003:137).

According to this approach, it is assumed that a buyer will not pay for a particular investment more than its costs and calculating the value of a company by subtracting the total liabilities from its assets (Hitchner, 2011:50). However, this approach is not appropriate if the liabilities are bigger than its assets then this approach are not applicable (Lunden, 2007:22).

The main advantage of this approach is being simply applicable for all types of companies. Furthermore, the result can be useful to see that the net worth of the company in a proper balance sheet format which is nearly familiar to everyone. However, there is a problem with the asset based approach is that in many cases cost is not a good indication of value. In addition to this, many of the most important factors that drive value are not reflected in this approach. These factors include (Smith and Parr, 1994):

- The amount of benefits associated with the resource
- The trend of the economic benefits (increasing or diminishing)
- The duration over which the economic benefits will be enjoyed
- The risks associated with receiving the expected economic benefits

2.4.1.2 Book Value Approach

Book value approach refers to the value of a firm for stakeholders. According to this method, stock value of a company is measured as follows (TSPAKB, 2008:115);

$$\text{Book Value of a Stock} = \text{Total Shareholders Equity} / \text{Total Shares}$$

This approach depends on historical values of balance sheet items. Thus, it is more useful for startup companies or the companies that have a volatile income.

2.4.1.3 Liquidation Value Approach

According to the liquidation value, company is assumed to finish all its operations and to have no more operational activity. Thus, all assets' are valued in market conditions. However, assets are valued according to the company's projections and their future cash flow generating power in adjusted net asset value.

Adjusted net asset value indicates the total value of a firm's assets in terms of owner expectations. It is calculated by subtracting the total liabilities from net assets. This value is mostly used in insolvency conditions. Insolvency is the unfortunate condition of a business that is unable to pay debts as they come due in the ordinary

course of business, and/ or that has liabilities that exceed the total value of assets when both are assessed at their economic values (Rosen et al., 2011:1).

The valuation of businesses in insolvency is important for the creditors, shareholders, and other stakeholders because it is as a basis for negotiations between these parties over the future of the business. For each stakeholder in an insolvent business, the relevant question is how to maximize its position.

2.4.1.4 Tobin's Q Approach

Tobin q was introduced by James Tobin in 1969. Defined as the ratio of market value to replacement cost of tangible assets, Tobin's q is an important and widely used method in the measurement of corporate performance and also company valuation due to its relationship with investment (Sang, 1998:2). The calculation of Tobin q is shown below;

$$\text{Tobin } Q = \text{Market Value of the Company} / \text{Replacement Cost of Its Assets}$$

After the model was built-up, Tobin q was firstly reexamined by Lindenberg and Ross (L & R). They divide the firm's assets into three main groups which are plant and equipment, inventories and other assets and adopt a replacement cost calculation methodology for each. The replacement cost of plant and equipment is adjusted to account for four primary effects, including price level changes, real economic depreciation, technological changes, and investment in new plant. Depending on the accounting method used, inventories are adjusted with a price index. Finally, other fixed assets are assumed to remain at book value (Sang, 1998:5).

Lewellen and Badriath (1997) and Chung and Pmitt (1994) also reexamined the Tobin q, recently.

Tobin q ratio shows the efficient of asset usage of companies. The Tobin q ratio of the companies using their assets efficiently has bigger than 1. (Lee, D.E. and Tompkins, J.G. 1999: 20) If a firm's Tobin q is smaller than 1, then it means that the marginal income of investment is smaller than the cost of capital of this firm. Tobin q ratio is also used for evaluating the performances of the companies in the same industry. Having higher Tobin q ratio makes a company more investable.

2.4.2 Market Approach

The market approach depends on the measurement of market value of the company's equity by multiples. It is based on the economic principles of competition and equilibrium. It determines company value by comparing one or more indicators of the company to the similar indicators of other companies which have an established market value ([http: www.hogefenton.com](http://www.hogefenton.com), 10.05.2013).

Market approach is only being appropriate in a free and unrestricted market in which the supply and demand factors drive the price of any good to a point of equilibrium (Reilly and Schweih, 1999: 61-62). In addition to this, there has to be sufficiently comparable company peers (Deloitte, 2013:3).

The market approach uses prices and other relevant information that have been generated by market transactions that involve identical or comparable assets.

In relative valuation, there are two ways to determine the company value. The common approach is to compare the current multiple to a historical multiple measured at a comparable point in the business cycle and macroeconomic environment and it is called as "Comparable Transactions Method". Second approach is to compare current multiples to those of other companies, a sector or a market, and compare the current spread between them to a historical spread and it is called as "Guideline Public Company Method".

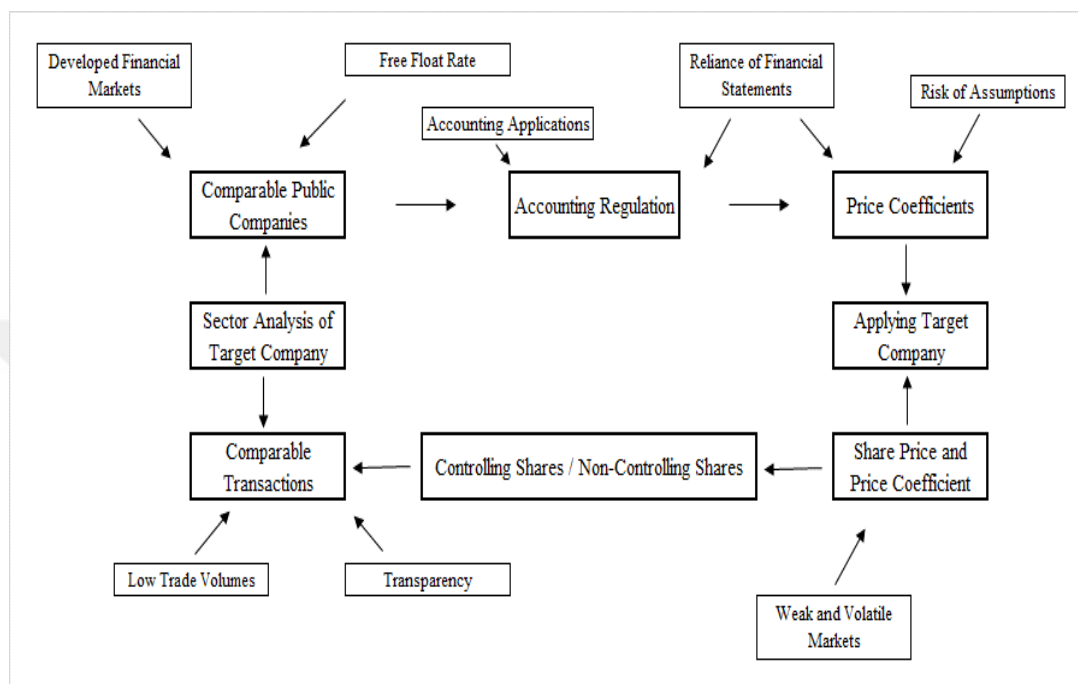
2.4.2.1 Comparable Transaction Method

In the comparable transactions method, historical corporate transactions in the same industry or country from the peer group are used (Pratt, 2005: 35).

This method is mostly used in mergers and acquisitions since it includes the premiums over the market values paid by acquiring firms for gaining controlling power and expected synergies, and directly yields transaction multiples (Schreiner, 2007:68). However, the method has two problems in practice. First problem is that there may not be enough transaction volumes to compare in some industries and some industries is also much specific than the other. Thus, comparability cannot be available for them. The second problem is that the capital market conditions for a specific industry may constantly change and therefore transaction premiums in last period are not

representative for current conditions. The Figure 6 below shows the applying requirements of comparable transaction method.

Figure 6. Applying Requirements of Comparable Transaction Method



Source : Kırılı, 2004.

Figure 6 indicates that the comparable transactions method is totally based on a transparent financial environment, deep and strong and efficient capital market, comparable and reliable financial data which consist of fair accounting adjustments. As mentioned in previous chapter, all these requirements refer to the objective of International Financial Reporting Standards. According to the conceptual framework of IFRS, fundamental characteristics and enhancing characteristics both aims to provide useful financial information.

Studies investigate the impacts of IFRS on financial measures and multiples of companies show that the IFRS implementation provides higher comparability and lower transaction costs by increasing the accounting quality and transparency (Biddle and Saudagaran, 1989:60; Tarca, 2004:65; Tendeloo and Vanstraelen 2005:160; Kasznik, 1999:60) forecast accuracy (Cheong et. al. 2010), value relevance of

accounting data (Palea, 2013:259) stock liquidity and reducing the earnings manipulation and enhance market efficiency (Kasznik, 1999:65).

2.4.2.2 Guideline Public Company Method

Guideline public company method uses similar stock prices for comparison to determine the value of a company (Sjöqvist and Stepanovych, 2008:27). The approach relies on the law of one price which states that similar assets should trade at similar prices (Cornell, B., 2013:1).

There are two main requirements to apply this method. First one is that the companies have to be comparable and the second one is that the market has to be correct and provides the prices comparably (Damodaran, 2006:2).

2.4.2.2.1 Types of Multiples

The values of the public companies are standardized by converting them to a multiple of an observable financial variable and then the average or median multiple for the group of comparable is multiplied this multiple to estimate the value (Cornell, B., 2013:1).

Multiples used in market based valuation approaches can be classified as entity multiples and equity multiples. Each of them has different focus points on business value calculation.

Enterprise multiples determines the value of an entire enterprise by considering the value of all claims on a business. On the other hand, equity multiples, determines the value of shareholders' claims on the assets and cash flow of the business (Suozzo et al., 2001:3).

2.4.2.2.1.1 Equity Multiples

An equity multiple, as the name suggests, is the expression of the market value of equity holders' stake in an enterprise, relative to a key statistic relating to that value (Schrenier, 2007:137). The Price to Earnings ratio, Price to Book ratio, Price to Sales ratio, and P/OCF multiple are the most widespread equity value multiples (Penman, S. 2004: 66 and Penman, S. 2004:238).

2.4.2.2.1.1.1 Price to Earnings Ratio

Price to earnings ratio is based on efficient market hypothesis represents and it that an investor's cost to buy a share for its income. Nominator in this multiple may be either the average price of common stock or its current market price whereas the denominator may also be either the last year's income or future income.

$$\frac{\text{Price}}{\text{Earnings}} = \text{Market Capitalization/Total Net Profit}$$
$$= \text{Stock Price/Income Per Share}$$

Data availability is a key fact that the P/E ratio is the most commonly used equity multiple. Despite this multiple is widely used, it has some weaknesses in practice such as not being applicable for the companies that have negative earnings. In addition to this, P/E ratio is a net income based multiple so that it can be easily manipulated by accounting policy differences.

2.4.2.2.1.1.2 Price to Book Value

Price to Book Value measure is one of the useful measures if the tangible assets are the main source of the cash generation of a company. However, net assets used in the denominator in this multiple are based on historical cost if the company does not revalue them. Thus it does not reflect the economic value as a right indicator. On the other hand, if the company revalues its assets, then the book value would not be comparable with other companies (Suoizzo et al., 2001:37).

This ratio is mostly used in valuing financials, especially in banks, which squeeze a small spread from a large base of assets and multiply that spread by utilizing high levels of leverage (deposits).

2.4.2.2.1.1.3 Price to Cash Earnings

The value of company can be measured by adding the depreciation, amortization to the net profit of company. The formula of this multiple is shown as in below;

$$\frac{MarketCap}{CashEarnings} = \frac{ROE - g}{ROE \times (COE - g)} \times \frac{Earnings}{CashEarnings}$$

Where,

Market cap represents the total value of a company or the total value of its stocks. It is calculated by multiplying the number of shares outstanding with their current price per share. ROE represents the shareholders rate of return on their investment in the company. And it is calculated by dividing the net profit after tax to the total shareholders' equity. COE represents the cost of equity and g represents the total forecast growth.

This multiple is difficult to use as a base valuation measure since it has some caveats such as misleading measure of cash flow, because of ignoring the many other factors that affect cash flow, including changes in net debt, changes in working capital and so forth. However, it can be used as a supplementary measure to other measures especially in related with multiples that are unadjusted for accounting differences between comparable, where those differences are material.

2.4.2.2.1.2 Enterprise Value Multiples

Enterprise value is defined as an economic measure which is reflecting the market value of a company as a whole business. A more simplistic view of enterprise value is as the sum of a company's market capitalization and its net debt. Thus, these multiples give a broader measure of value since they are less affected by financial leverage decisions (Damodaran, 2006:35). There are many different types of enterprise value multiples and each of them is used for different circumstances.

2.4.2.2.1.2.1 Enterprise Value / Earnings Before Interest, Tax, Depreciation and Amortisation

EBITDA shows the operating profitability of a company and is used as a proxy for operating cash flow. Its formulation is as in below.

$$\begin{aligned} & \text{NetIncome(Loss)} + \text{Non – Controlling InterestIncome(Loss)} \\ & + \text{Interest Tax Provision (Benefit)} + \text{Interest Expense} \\ & - \text{Interest Income} \\ & + \text{GoodwillandOtherIntangibleAssetsImpairmentCharges} \\ & + \text{DepreciationandAmortizationExpense} \end{aligned}$$

EV/EBITDA, is defined as a price to cash flow multiple. This multiple is widely used because it is not affected by both the capital structure differences and depreciation policy differences. It is most useful for the companies that have same capital intensity.

However, this multiple has also some weaknesses in practice. Since EBITDA is a pretax measure, whereas management may potentially add value through skilled tax management. In addition to this, EV/EBITDA cannot be used when current cash flow is negative.

2.4.2.2.1.2.2 Enterprise Value / Earnings Before Interest and Tax

EBIT, also known as EBIT multiple, shows how many times a share price trades against earnings. It is a measure that ignores the goodwill amortization, associates, interest and taxes. The main difference between EBITDA multiple and EBIT multiple is that the amortization and depreciation are ignored in EBIT multiple.

This multiple is formulated as; $\frac{EV}{EBIT} = \frac{ROIC^1 - g}{ROIC \times (WACC - g)} \times (1 - T)$

¹ ROIC represents the return on invested capital measure gives a sense of how well a company is using its money to generate returns. Comparing a company's return on capital (ROIC) with its cost of capital (WACC) reveals whether invested capital was used effectively. The general equation for ROIC is as follows:

$$\frac{(\text{NetIncome} - \text{Dividends})}{\text{TotalCapital}}$$

Despite this multiple looks like P/E ratio, there is a significant difference between them. EV / EBIT consider the distortions in earnings caused by cash holding and borrowings whereas the PE ratio just lumps everything.

2.4.2.2.1.2.3 Enterprise Value / Sales Multiple

EV/Sales multiple, as name suggests, is calculated by dividing the enterprise value to sales. It shows the total market value of sales.

$$\frac{EV}{Sales} = \frac{ROIC - g}{ROIC \times (WACC - g)} \times (1 - T) \times M$$

It is used to give an idea to the investors about total buying costs of a company sale by using enterprise value instead of market capitalization. This multiple is a useful indicator to identify the restructuring potential. However it also has some weaknesses in practice. Since this multiple is based on sales, companies in their initial phase can both have negative cash flow and volatile sales. In addition to this, sales are affected by different revenue recognition policies such as aversion a high return rate of risk or incoterms. Thus, when making comparisons using this multiple, sales, revenue recognition, have to be determined on a consistent basis.

2.4.2.2.1.2.4 Enterprise Value / NOPLAT

As the name suggests, this multiple is calculated by dividing enterprise value to operating profit less adjusted tax. NOPLAT is a post-tax EBIT which represents the profits generated from a company's core operations after subtracting the income taxes related to the core operations. The calculation formula is given below;

$$\frac{EV}{NOPLAT} = (ROIC - g) / ROIC \times (WACC - g)$$

NOPLAT multiple is a complete form of EBIT because it gives a clearer view of operating efficiency. It allows for differences in tax efficiency and effective tax rates. This multiple is also used to calculate the Economic Value Added which is an indicator measuring the corporative performance in a different manner from that of the other indicators, used until it was introduced on the market, because it suggests profit

adjustment by the capital cost (Alexei, 2012:34). However, NOPLAT is mostly meaningful among companies within the same industry.

2.4.2.2.1.2.5 Enterprise Value / Enterprise Free Cash Flow

As defined above, enterprise value is an economic measure which is reflecting the market value of a company as a whole business. Enterprise free cash flow, also known as free cash flow to the firm, means that the cash available to the providers of finance. It is calculated by adding debt cash flow to equity cash flow.

$$\frac{EV}{FCF} = 1 / (WACC - g)$$

In this calculation, free cash flow must be after tax and all investment expenditure needed to support the future cash flow forecast.

2.4.2.2.2 Strengths and Weaknesses of the Standard Multiples Method

Multiple valuation according to market based approach captures the current mood of the market and it is often simpler to use than the asset based and income based valuation models (Lunden, 2007:26). Multiple based models also require less information than the discount-models (Nilsson et. al, 2002:62). Thus, this approach is easier to understand and apply comparing to the DCF (Damodaran, 2002:453). On the other hand, valuing a company by multiples has some disadvantages. The biggest disadvantage of market based approach is to find reliable comparing cases since every trade has its own condition (Lunden, 2007:26). Companies used in comparison need to have the same cash flow statement, risk and growth potential (Damodaran, 2002:462). According to Pratt et al. (2000) and Fernandez P. (2005), there are some common errors such as to find and search for a similar industry, multiples that mismatch numerator and denominator, and simple reliance on average of guideline company multiples or transactions without comparative analysis in market based valuation projects. In addition to this, this type of valuation approach is not reliable so company objects may not be correctly valued. An overvaluation or undervaluation risk always exists and it affects the subject company to be either over valued or undervalued (Damodaran, 2002:454). Accounting policy differences in provisions,

goodwill, and depreciation affect the multiples and differences in multiples can cause a misleading valuation.

2.4.3. Income Approach

Income approach is related with the future economic benefits and it determines the firm value by measuring the income in terms of price after relating the value and income. It simply represents the present value of its expected cash flows over its life.

The income approach is considered as the best alternative method compared with the cost and market approach, especially in the case of knowledge valorization (Andriessen, 2005:7). The value of the company as to income approach is a function of three variables (Deloitte, 2013):

1. The economic benefit stream, typically cash flow (as a nominator)
2. The growth potential of the company being valued, both short and long term
3. The risk involved in receiving the benefits in the proper amounts and timeframes anticipated (i.e., the discount rate) (as a denominator)

The income approach is based on the economic principle of anticipation and depends on a mathematical fraction that consists of numerator and denominator. While the numerator represents the future economic benefits or future payments, the denominator shows the opportunity cost or cost of capital which means the rate of return that investors require drawing them to a particular investment rather than an alternative investment (Hitchner, 2006:99). In numerator, for the future economic benefits, “expected cash flow” concept is mostly used instead of other proxies such as net income, operating income etc.

Income approach is probably the most widely recognized approach to value an interest in a privately held enterprise (Hitchner, 2006:101). There are some reasons for that the income approach is mostly used in valuation studies (Bradford and Cornell: 1993):

- The approach depends on basic and simple mathematical fractions.
- Income Approach is the most transparent approach among other valuation approaches.
- Firm value which is calculated by income approach serves every unit such as creditor, investor, shareholder and supplier in the economy.
- Risk-free capitalization rates are used in calculations.
- This approach is the only firm valuation approach that is learned by official courses such as The American Society of Appraisers and The Institute of Business Appraisers.

2.4.3.1 Valuation Methods According to Income Approach

Discounted cash flow valuation is a method of valuing an asset, project or company using the concepts of the time value of money. This approach was raised by Irving Fisher in 1930 (Önal et. al., 2005:370). In DCF Approach, all future cash flows are estimated at first and then they are discounted to calculate their present values (PVs) which means the sum of all future cash flows, both incoming and outgoing, is the net present value (NPV), which is taken as the value or price of the cash flows in question (Karlsson and Joseffson, 2011:9).

The Discounted Cash Flow Approach (DCF) is the most theoretically acceptable valuation approach which involves discounting the future cash flows (such as dividends, earnings, and terminal values) that the share will bring to the investor in the foreseeable future back to present value (Abarbanell and Bushee 1997:10).

It provides an objective framework for assessing a company's risk and cash flow to estimate value. Furthermore, it requires users to think about key drivers of value. In discounted cash flow approach, simply, the value of the firm is measured by discounting the free cash flow to the firm at the weighted average cost of capital.

Although it has attractive properties from a theoretical perspective, the discounted cash flow approach does have a number of limitations. Forecasting the reliable and accurate cash flow, determining a terminal value and a discount rate cannot be reliable sometimes (Correia et. al., 2003).

The discounted cash flow formula is derived from the future value formula for calculating the time value of money and compounding returns. The formula is shown below;

$$DCF = \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \frac{CF_3}{(1+r)^3} + \dots + \frac{CF_n}{(1+r)^n}$$

$$FV = DCF (1+i)^n$$

Thus the discounted present value (for one cash flow in one future period) is expressed as:

$$NPV = \frac{FV}{(1+i)^n}$$

Where;

NPV is the discounted present value of the future cash flow (FV),

FV means the nominal value of a total cash flow amount in a future period;

i represents the interest rate, discount rate or cost of capital, which reflects the cost of tying up capital and may also allow for the risk that the payment may not be received in full

n represents the time in years before the future cash flow occurs.

Where multiple cash flows in multiple time periods are discounted, it is necessary to sum them as follows:

$$NPV = \sum_{t=0}^n \frac{FVt}{(1+i)^t} + \frac{ContinuingValue^2 n}{(1+k)^n}$$

There are three key inputs in DCF calculation. They are future cash flows, discount rate and terminal value or continuing value, respectively. The terminal value is critically important as it often represents a substantial portion of the total value of an entity (Hitchner, 2003:109). Because, if the cash flows cannot be estimated forever, a terminal value which shows the value of a firm at that point. However, there is not a

² Continuing Value n represents the terminal value of company

common terminal value definition. It can be accepted as the scrap value in some projects whereas it is also assumed a future non-projected cash flow proxy (Önal et al., 2005:375). If the company is in liquidation process, terminal value is used as scrap value.

According to GGW, the formula is;

Present Value of NCFs during Explicit Period	Gordon Growth Terminal Value
$\frac{NCF_1}{(1+k)^1} + \frac{NCF_2}{(1+k)^2} + \dots + \frac{NCF_n}{(1+k)^n}$	$+ \frac{NCF_n \times (1+g)}{(k-g)}$

Where,

NCF = Net Cash Flow commensurate with k, the required rate of return

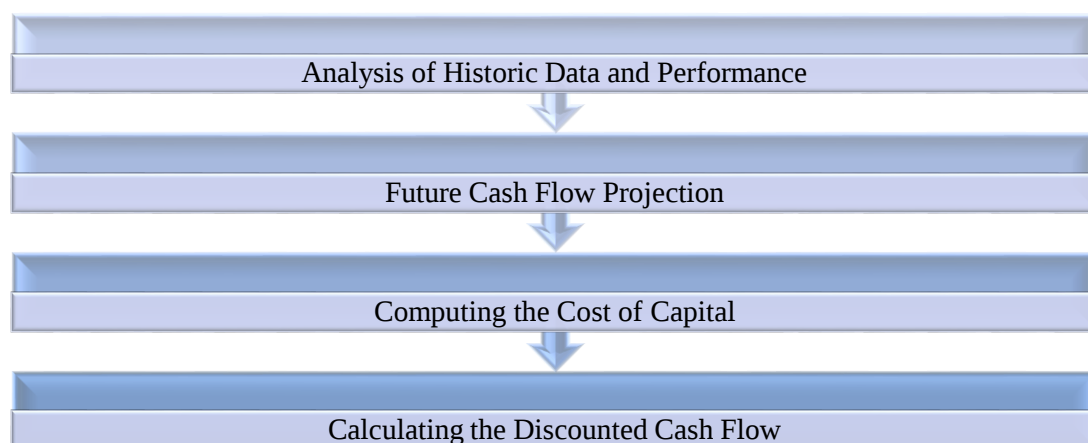
K = required rate of return or discount rate commensurate with the net cash flow

G = Long term sustainable growth rate

N = Number of periods in the explicit forecast period

In first step of the DCF calculation, the company is assumed as it operates forever. After that, the cash flows of the next 5-10 year-periods are forecasted. Forecasts more than 10 year cash flows has risky because of the data being unrealistic. Thus, a terminal value is also calculated for the years that after the projected period. In this context, the company value raises from the net present value of sum of these explicit forecast period and terminal value (Copeland et. al., 1996:285). Process of DCF Model is shown in below; (Copeland et. al., 1996:157):

Figure 7. Process of DCF Valuation



Source: Copeland et. al., 1996, p.157

In both the practical valuation life and in the academically literature, DCF Approach can be performed in two different ways which are Free Cash Flow to The Equity and Free Cash Flow to The Firm, respectively.

2.4.3.2 Free Cash Flow to the Equity and Free Cash Flow to the Firm

There are two different types of cash flows which are free cash flow to equity (FCFE) and cash flow to the firm (FCFF), respectively. Each cash flow type has some advantages and disadvantages in assessing the value of firm.

2.4.3.2.1 Free Cash Flow to Equity

The free cash flow to equity means a free cash flow that is available to the holders of ordinary shares after all operational expenses of interests and principal are paid and after necessary investments in net working capital and fixed assets are achieved (Stowe et. al., 2002:45). Performing the discounted free cash flow to equity model for valuation requires (Begovic et. al., 2013: 41):

- The projection of free cash flow to equity
- The discounted rate calculation (return on equity),
- The discounting the projected cash flows,
- The determining the growth rate

- The calculating the residual value of the firm
- The discounting the residual value of the firm
- The adding the present value of cash flows and present value of the residual to obtain the value of the equity.

Free cash flow to equity calculation can be shown in below (Begovic et al., 2013:41);

Free Cash Flow to Equity

$$\begin{aligned}
 &= \text{Net Profit} + \text{Depreciation} \\
 &- \text{Investment in Fixed Assets (capital expenditures)} \\
 &- \text{Change in net working capital} + \text{New Loans} \\
 &- \text{Outstanding Loans Paying}
 \end{aligned}$$

In FCFE, either rate of return on equity of CAPM or a buildup method is used to discount future cash flow (Begovic et al., 2013:41). Selecting the right method that will be used in calculation depends on some factors. CAPM model requires information on risk - free return rate, the value of Beta factor for a given firm and the premium of market risk.

2.4.3.2.2 Free Cash Flow to the Firm

The free cash flow (FCFF) to the firm represents a cash available to pay investors after paying all costs of doing business, inventory costs and investment costs in net working capital and fixed assets are conducted (Stowe et al., 2002). The calculation can be shown in below;

Free Cash Flow to the Firm

$$\begin{aligned}
 &= EBIT(1 - \text{tax rate}) \\
 &+ \text{Depreciation Investment in Fixed Assets} \\
 &- \text{Change in Net Working Capital}
 \end{aligned}$$

Weighted Average Cost of Capital is used to discount in FCFF calculation since it takes into account the prices of both the debt and equity financing (Begovic et al., 2013:43).

Based on a detailed designing of the balance sheet and income statement which include all future inflows and outflows of funds is the main advantage of this approach. In this context, the entire projection and projected cash flows are more realistic and accurate. However, it has some limitations in practice. The assessor's choice of the dynamics of the payment of loan obligations influences the source of financing and the amount of interest cost. Namely, the assessor may decide to project loan payment in decreasing or the same annuities. Moreover, it is possible to have payment of interest annually or after six months rather than monthly so it leads to different interest cost.

The approach is accepted as simple to apply since it neglects the cash flows bound to debt and interest and also their changes during the projection period.

2.4.3.2.2.1 Cost of Capital

The cost of capital has been a popular issue in corporate finance since the economic integration began to raise in all around the world (Barry et al, 1998:75). It can be simply defined as the expected return on the firm's stock (Lambert et al., 2005:8). It represents investors' expectations which are "the real rate of return", "expected inflation" and "risk".

These expectations show both the opportunity cost of investing and compensation demanded by shareholders for providing capital and assuming the risk of waiting for this return (Witmer and Zorn 2007:7). Estimation of the cost of capital is not straightforward so that different assumptions and methodologies applied for calculation can result in different ways.

The cost of capital has two main components (Pratt, 2002: 36):

- A risk-free rate which means that a rate of return that is available in the market on an investment that is free of default risk.
- A risk premium rate is an expected amount of return over and above the risk-free rate to compensate the investor for accepting risk.

Risk can be defined as the identification of the opportunity cost in finance. Risk and uncertainty are similar but have different meanings in financially. Uncertainty is defined as an investor cannot make an assumption for an economic event whether it will happen or not, whereas the risk is defined as an extraordinary unwanted result of an economic or financial decision.

Although risk arises from many sources, capital market theory divides risk into three components in the economic sense:

1. Maturity Risk
2. Systematic Risk
3. Unsystematic Risk

Maturity risk is defined as the risk of investment value because of interest rate fluctuation in a time period. If the term of investment is long then the maturity risk is much greater.

Systematic risk can be defined as the uncertainty of future returns due to uncontrollable movements in the market as a whole (Hitchner, 2006:24). This type of risk arises from external factors such as a firm, person, financial institution or a government and it cannot be diversifiable.

Systematic risk consists of market risk, interest rate risk and inflation rate risk (Hitchner, 2006:25). Market risk is defined as the losing risk of a part of capital of an investor due to the common stock fluctuation in market. If the prices of a stock fluctuate more in the past then its market risk is accepted as high. The market risk is measured by Beta Coefficient as to CAPM. Common stocks with high beta coefficient are much riskier than the market.

Inflation risk is defined as the decreasing or increasing the purchasing power of money. Higher inflation affects the equity returns in different ways.

Interest rate risk means that a depreciation of an investment incomes because of interest rate fluctuations in financial market. Investors can choose some other fixed rate and risk free rate financial instruments to eliminate this type of risk.

Unsystematic risk, also called specific risk, diversifiable risk or residual risk is defined as the uncertainty of future returns because of the characteristics of an industry, enterprise, or type of investment.

In financial environment, there are some policy responses to reduce or prevent this type of risk. Both the IASB and FASB make some regulations to increase the transparency. Greater transparency can prevent uncertainty in financial environment since both the regulators and investors monitor system as a whole. In a transparent market, lenders, creditors and investors analyze a firm's financial strength and take decisions much healthy.

At this point, the importance of IFRS rises again. Accounting Standards Board (IASB), the body that establishes International Financial Reporting Standards (IFRS) describes the objective of "general purpose" financial reporting as follows:

"The objective of general purpose financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders, and other creditors in making decisions about providing resources to the entity. Those decisions involve buying, selling, or holding equity and debt instruments and providing or settling loans and other forms of credit."

As pointed out in the general purpose, financial reporting regulation aims to provide information for users that is unbiased, relevant and reliable, and facilitates the prediction of future performance. Measuring the systematic risk achieved through the application of these standards by all companies.

Studies in the literature indicate that, firms are likely to reduce their risks and cost of capital by fair value reporting. Papadamou and Tzivinikos (2013) investigated the banks' IFRS adoption and the effect of IFRS on risk relevance and found that International Financial Reporting Standards application reinforces the explanatory ability of accounting data, on systematic and non-systematic risks. They concluded that, transition toward more transparent accounting systems increases the risk relevance of accounting variables.

According to the V.K and Servaes Henri's survey (2010), which is about the impacts of fair value reporting on risk management of companies, firms are more likely to be affected by fair value reporting if they seek to use risk management to reduce the

volatility of earnings relative to cash flows and if they operate in countries with low disclosure standards. In accordance with this, risk management allows firms to make better investment plans by reducing the cost of financial distress. DeMarzo and Duffie (1991) also found that risk management can reduce information asymmetry between the firm and stakeholders.

2.4.3.2.2.2. Relationship between Risk, Cost of Capital and Discount Rate

Cost of capital shows to the opportunity cost of a specific investment. It is the rate of return that could have been earned by putting the same money into a different investment with equal risk. In this context, the expected rate of return is also called as discount rate (Hitchner, 2006:128). A discount rate represents both time value of money and risk. Thus, it reflects the cost of capital. That's why, the terms "discount rate," "cost of capital," and "required rate of return" are often used interchangeably (Pratt, 2002:42).

2.4.3.2.2.3. Cost of Capital Calculation

The term "capital" represents the components of an entity's capital structure. There are three factors of capital structure (Pratt, 2002:36);

- Short Term and Long Term Debt
- Preferred equity (stock or partnership interests with preference features, such as seniority in receipt of dividends or liquidation proceeds)
- Common equity (stock or partnership interests at the lowest or residual level of the capital structure) the overall cost of capital may, of course, be affected by the capital structure of the firm.

Firm can create value not only by its cash flows but also by its financing method. Debt financing can be used as an alternative way to equity financing since the interest payments are deducted from tax and increases the firm value by generating the cash. In the literature, there are two main approaches to investigate the effect of debt

on firm value. These are the Weighted Average Cost of Capital (WACC) Approach and Adjusted Present Value (APV) Approach, respectively.

Modigliani and Miller (1963) assume that the leverage has a significant effect on firm value. They calculate the value of tax shields (VTS) by discounting the present value of the tax savings due to interest payments of a risk-free debt ($T D_{RF}$) at the risk-free rate (RF). Modigliani and Miller claim that: $VTS = PV(RF; DT_{RF})$

Myers (1974) extended this approach by assuming that the firm determines the future amount of debt today. This approach is known as APV (adjusted present value) theory. According to Myers, the value of tax shields (VTS) is the present value of the tax shields discounted at the required return on debt (K_d), $VTS = PV(D K_d T; K_d)$

2.4.3.2.2.3.1. Adjusted Present Value (APV)

The APV valuation model is based on the model of Miller & Modigliani, who proposed that in a market with no taxes (among other things), a company's choice of financial structure will not affect the value of its economic assets.

Adjusted present value = Enterprise value as if the company was all: equity financed + present value of tax shields.

Corporate valuation with APV requires some estimation which are; (Ehrhardt, M.C. and Daves, P.R, 1999:11)

- (1) expected future free cash flows (defined as net operating profits after taxes less necessary investment in net operating working capital and net plant, property, and equipment);
- (2) The unlevered cost of equity;
- (3) The expected future capital structure;
- (4) The discount rate to be applied to the tax shield; and
- (5) The steady-state long-term growth rate of free cash flows and debt.

The model has both advantages and disadvantages in usage. First of all, APV requires fewer restrictions than the WACC does, thus, it always works when WACC does, and sometimes when WACC doesn't (Luehrman, T.A., 1997:148). Furthermore, in contrast to WACC, APV shows not only how much an asset is worth but also where the value comes from. Thus, The Adjusted Present Value Approach can be used to value companies as well as project valuation. However the assumptions of unlevered cost of equity and the appropriate discount rate for the tax shield are not observable in APV.

2.4.1.1.2.2.2. Weighted Average Cost of Capital (WACC)

The weighted average cost of capital, is also called as the discount rate considers both the price of equity and debt. It is used in valuation, capital budgeting, goal-setting, performance measurement and regulation. In determining WACC, cost of equity and cost of debt are needed to find.

WACC is calculated as follows:

$$WACC = \frac{E}{V} \times R_e + \frac{D}{V} \times R_d \times (1 - \text{tax rate})$$

Where;

R_e = cost of equity

R_d = cost of debt

E = market value of the firm's equity

D = market value of the firm's debt

$V = E + D$ = firm value

$\frac{E}{V}$ = percentage of financing that is equity

$\frac{D}{V}$ = percentage of financing that is debt

2.4.3.2.2.4 Cost of Equity Calculation Methods

Cost of equity can be calculated by using different methods. In CAPM, the market risk is measured with a beta, which when multiplied by the equity risk premium yields the total risk premium for a risky asset. In the arbitrage pricing model, more than one beta is estimated against individual market risk factors, and each factor has its own price (risk premium) (ERP, 2009).

In this equation, cost of equity can be calculated by different pricing models. There are three general approaches for estimating the cost of equity at a firm level. (Hitchner, 2006:189)

- Dividend Growth Model
- CAPM
- Arbitrage Pricing Theory

2.4.3.2.2.4.1 Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (hereafter “CAPM”) built on Harry Markowitz (1952, 1959) mean-variance portfolio model was introduced by Jack Treynor (1961:105 and 1962:18), Sharpe (1964), Lintner (1965), Jan Mossin (1966) and Black (1972) independently. In the following years, Fama and MacBeth (1973), Gibbons (1982) and Stambaugh (1982) presented some evidence in support of the formulation by applying CAPM to US Data.

The CAPM equation shows the relationship between cost of capital and market returns by assuming that systematic risk is constant over some arbitrary time period and can be estimated using time series data (Turnbull, 1977; 1125; Torrez et al.; 2006: 10). Its assumptions are explained as follows; (<http://www.chinaacc.com>, 17.02.2014);

- The model assumes a perfect capital market that all information is available to all such as covariance, variances, mean rates of return of stocks and so on and also all investors are risk-averse and they have also a risk free asset with interest rate r_f . (Sigman, K., 2005:1) In this condition, the model gives a precise prediction of the relationship that should be observed between the risk of an asset and its expected return.

- The CAPM assumes that unsystematic risk has been removed and can be ignored. Thus, the investors only require a return for the systematic risk of their portfolios.
- The CAPM is a single period specialization of the fundamental valuation equation. The returns of different securities can be compared only in a holding standardized period. For instance, a return of three months cannot be compared to a return of six months period. As a holding period, one year is used generally.

However, these assumptions are criticized in using. For instance, CAPM represents an idealized capital market rather than real-world operations that are clearly not perfect. And also, it is not possible for investors to borrow at the risk-free rate in reality. The reason for this is that the risk associated with individual investors is much higher than that associated with the Government.

Despite all these criticisms, the CAPM continues to be the most preferred model by both the academicians and professionals. A survey of CFOs by Graham and Harvey (2001) indicates that 73.5% of the respondents use the CAPM in their valuation and budgeting appraisals. (<http://www.nber.org/papers/w14889.pdf>). Moreover, Welch (2008) indicates that, about 75.0% of finance professors recommend using the CAPM to estimate the cost of capital for capital budgeting.

The CAPM model is generally more appropriate for publicly-traded companies, as data relating to the beta of a company (correlation between changes in price of stock and changes in the market index) is required to estimate the required rate of return.

In order to use the CAPM, values need to be assigned to the risk-free rate of return, the return on the market, or the equity risk premium (ERP), and the equity beta.

In its simplest form the CAPM is defined by the following equation:

$$E(R_i) = R_f + \beta_i(E(R_m) - R_f)$$

Where;

$E(R_i)$ = The expected return of stock i

$$\beta_i = COV(R_i, R_m) / VAR(R_m)$$

R_f = The risk free rate of return

$E(R_m)$ = The expected return of the market

There are two main components of CAPM; (1) the market portfolio M, and (2) beta risk β of a portfolio, which correlates the portfolio to the rise and fall of the market.

Beta Coefficient, as a systematic risk indicator, is also used in different calculations such as cost of capital computing, capital asset pricing and risk management. (Odabaşı, 2004: 4)

Beta is determined by the characteristics of the firm. These characteristics are the cyclical nature of revenues, operating leverage and financial leverage, respectively.

Leverage shows the use-of- fixed cost assets or funds to magnify returns to the firm's owners. High leverage provides high risk and return and low leverage provides low risk and return. The amount of leverage in the firm's capital structure can significantly affect its value by affecting return and risk (Jecheche, 2012: 2). In other words, the use of leverage in the capital structure serves to lower the company's weighted average cost of capital. Modigliani and Millers' (1958) study also supported this assumption. They showed that leverage has a significant effect on firm value (Fernandez, 2005:9; Modigliani and Miller, 1958:270).

In CAPM Theory, Beta has an important role since it shows the relation among company decisions and stock market which simply means it shows the systematic risk (Hitchner, 2006:186).

2.4.3.2.2.4.2. Arbitrage Pricing Theory (APT)

As an alternative method to the CAPM, Arbitrage Pricing Theory (hereafter "APT") was introduced by Ross (1976) (Jecheche, 2012:3). There are some similarities and differences between CAPM and APT. Like CAPM, the APT also aims to analyze the equilibrium relationship between assets' risk and expected return. The two key CAPM assumptions of perfectly competitive and efficient markets and homogeneous expectations are also assumed in APT (Tambakis, 2000: 2). Furthermore, in similar with CAPM, unsystematic risk, firm specific risk, is not relevant in determining the

expected returns of securities since it is easily diversified out of any well diversified portfolio. However, in contrast to CAPM, APT assumes that there may be several non-diversifiable risks, which are up to the researcher to identify, factors that are systematic or macroeconomic in nature and thus affect the returns of all stocks to some degree. In addition to this, APT is derived from more than one factor whereas the CAPM measure the sensitivity of market for stock returns with one Beta.

Risky asset returns are said to follow a *factor intensity structure* if they can be expressed as:

$$r_j = a_j + b_{j1}l_1 + b_{j2}l_2 + \dots + b_{jn}l_n + \epsilon_j$$

Where

a_j represents a constant factor for asset j ; l_j is a systematic factor, b_{jk} is the sensitivity of the j th asset to factor k , also called factor loading, and ϵ_j is the risky asset's idiosyncratic random shock with mean zero.

The APT states that if asset returns follow a factor structure then the following relation exists between expected returns and the factor sensitivities:

$$E(r_j) = r_f + b_{j1}RP_1 + b_{j2}RP_2 + \dots + b_{jn}RP_n$$

Where

RP_k is the risk premium of the factor, r_f is the risk-free rate,

That is, the expected return of an asset j is a linear function of the asset's sensitivities to the n factors.

2.4.3.2.2.4.3. Dividend Growth Model

As an alternative method, the dividend growth model is also used in cost of equity calculation. However, it can only be used if firms pay a dividend that grows at a constant rate. To calculate the cost of equity using the dividend growth model requires three components which are the current share price, the growth rate (which is an estimate) and either the previous dividend that was paid or the next dividend to be paid.

The calculation of the Dividend Growth Model is as follows;

$$R_E = (D_0 + (1 + g)/P_0) + g = D_1 / P_1$$

Where;

R_E refers to the required return on equity (%)

D_0 refers to the dividend just paid

D_1 refers to the next periods expected dividend

P_0 refers to the shares current market value

g refers to the expected dividend growth (%)



CHAPTER THREE

IMPACTS OF IFRS ON LISTED COMPANIES IN BORSA ISTANBUL

3.1. AIM OF THE STUDY

One of the main objectives of a firm is to increase its value by maximizing the profits. Thus, all the activities of organization are profit-seeking but also affected by both the regulation environment and operational environment.

Financial statements which are main indicators reflecting the business operations of a company become more important with the increasing of integration of cross-border economies. Thus, financial reports are expected to provide relevant, reliable, understandable and comparable information in parallel with economic integration (Aslanertik and Gümüş, 2012:14).

IFRS adoption in financial reporting in accordance with the harmonization in all around the world has significant financial impacts on companies.

The harmonization of all national accounting standards began in 1973 with the establishment of the International Accounting Standards Committee (hereafter “IASC”) which was the first attempt to set accounting standards internationally (Bae et al., 2008:598). In its 27 year-working-period from 1973 to 2000, IASC held 87 meetings in 37 cities around the world and issued a conceptual framework, 41 standards, and 24 interpretations within the context of accounting harmonization objective (Zeff, 2012: 810).

The committee was restructured and was named as International Accounting Standards Board (hereafter “IASB”) in 2001. From 2001 to today, the new board accelerated the harmonization process and has vastly reshaped the world map of company financial reporting.

In this line, the European Regulation 1606/2002 of European Union (hereafter “EU”) has mandated that all EU-listed groups of companies adopt IFRS beginning in 2005 with the goal of increasing harmonization, transparency, capital markets’ efficiency and to protect both the investors’ interests and company goals from

stakeholders. In 2005, in accordance with IFRS harmonization plan in Europe, the vast majority of the some 8,000 listed companies in an enlarged EU switched from their national GAAP to IFRS in their consolidated financial statements (Deloitte Turkey, 2008:20).

Belief that the expected transparent financial reporting environment can be achieved by higher mandate disclosure of accounting information by firms has led many countries to adopt International Financial Reporting Standards (IFRS) (Merino et. al., 2014: 563).

Despite not being an EU member, some countries such as Izland, Liechtenstein and Norway in European Economic Area also changed their regulations to make their companies adopted to IAS / IFRS and SIC / IFRIC. Furthermore, the companies in some countries that have no regulation for a mandatory IFRS adoption also started to adopt IFRS voluntarily in their financial reports as an alternative financial reporting approach.

The adoption in all around the world reaches the widest ranges by more than 110 countries in 2014. However, some large countries, including United States is still remaining undecided. United States of America in where the U.S. GAAP is still used mandatorily has announced to permit foreign private filers in the U.S. Stock Exchanges to file IFRS complied Financial Statement, without requiring the presentation of reconciliation statement (Jagtap, 2013:1). Moreover, to converge the U.S. GAAP and IFRS, FASB and IASB, as authorized boards, have announced a road map in 2012. When the process is fullfilled, the world will be one big step near to have a unique accounting system.

In Parallel with the regulations in Europe Union, Capital Markets Board in Turkey also issued a communique under Serial X No.25 in 2003 by considering the IAS / IFRS amendments in the membership process to EU. This communique consisted of 727 entries and covered all international accounting standards and international financial reporting standards that were also accepted in EU. According to this communique of CMB, companies quoted in capital markets had to prepare their consolidated financial statements according to Serial X No.25 by the date of 2005. In 2008, CMB published a new communique Serial XI No.29 that is fully translated from IFRSs and this communique became affective from the year end 2008.

Turkish Accounting Standards Board whose name and organizational structure was changed later and became Public Oversight Accounting and Auditing Standards Authority (Hereafter “KGK”) was also founded in 1999. Before the KGK became the main authority in 2013, both the CMB and TASB arranges the financial reporting legislation in Turkey. In 2013, KGK became the main authority to arrange the Financial Reporting and Auditing Legislation in Turkey.

In parallel with the increasing of IFRS adoption in all around the world, impacts of IFRS adoption on companies are started to investigate by both the practitioners and researchers. The vast majority of related literature provides evidence the effects of IFRS/IAS adoption involve three factors: the accounting harmonization, the information presented in financial statements and the market efficiency (Rusu, 2012: 814). As a single set of high quality global accounting standards, IFRS / IAS adoption increases the comparability of firms’ financial information across financial markets (Wang, 2011: 31; Iatridis, 2010:165; Brochet et al., 2012: 29; Cascino, and Gassen, 2011: 36), transparency and disclosure level of companies (Ding, et. al., 2007:3; Bae, et al. 2008:599) by requiring more qualitative and quantitative disclosures than many country-specific GAAP requirements (Wright and Hobbs, 2010:23). These impacts directly lead the lower information asymmetry (Hansen et. al. 2013: 2; Yu, 2010) lower stock volatility, lower cost of equity and debt financing. According to the efficient market hypothesis (Fama, 1970) investors want as much information about companies as possible in order to decrease the risk of trading with a better informed trader. Thus, the lower information asymmetry by IFRS adoption increases the market efficiency (El-Gazzar et al., 1999:246) and encourages the individual investors for foreign equity investments (Brüggeman et. al. 2009:28).

Besides these conclusions, the new accounting system is also expected to have a positive consequence on firm value by decreasing its weighted average cost of capital in DCF model.

Within the context of this question, this study examines the impacts of IFRS adoption on stock beta in first hypothesis. After that, the cost of equity capital equity and cost of debts which are the main variables of WACC calculation are tested whether the IFRS adoption impacts. Finally, impacts of IFRS adoption on WACC values of listed companies in Borsa Istanbul are tested.

As being widely used, (Celik et al. 2008:157) CAPM method is used to estimate cost of equity capital of listed companies in BIST and then the impacts of IFRS on cost of debt, cost of equity capital and WACC is investigated from 1994 to 2013.

The rest of this chapter is organized as follows: The next section reviews related studies in the literature. Section 3.3 describes the study's hypotheses. Section 3.4 illustrates sample of the study, data sources and research design. Section 3.5 presents empirical results of all hypotheses. The conclusion of the study is provided in Section 3.6.

3.2. LITERATURE REVIEW

As mentioned in first chapter, the main aim of IFRS is to make the financial information and financial statements more transparent and comparable with high disclosure level.

Most previous studies before mandatory adoption of IFRS / IAS have stated that the new accounting standards are likely to increase the comparability of firms by requiring greater financial disclosure than most local GAAP (Ashbaugh and Pincus 2001:417; Wang, 2011: 31; Iatridis, 2010:165; Brochet et al., 2012: 29; Cascino and Gassen, 2011: 36) and that increased disclosure reduces the cost of equity capital (Botosan 1997:324; Easley and O'Hara 2004:1572, Armstrong et al. 2008:29).

Andre et. al. (2012) focuses on the comparability of the financial statements of 187 listed firms in EU, for the pre-IFRS adoption period (2003) and post-IFRS adoption period (2005 & 2010) and found that the IFRS adoption increases both the usefulness of accounting information and comparability and decreases the analysts' forecast errors.

Leuz and Verrechia (2000) investigated the German companies that adopted voluntarily the new accounting system and resulted that the IFRSs increases the stock market liquidity and decreases the cost of capital and transaction costs. Sami and Zhou (2009) also stated the same result in their studies. In addition, they also found that the IFRS decrease information asymmetry and cost of capital. Fang et. al. (2009) examined the 157 equity REITs from the NYSE, AMEX and NASDAQ from 1993 to

2008. They use the Tobin's Q as a proxy between financial performance and stock liquidity and they stated that the increased stock liquidity has a positive effect on firm performance.

After its mandatory adopted in most of countries including Turkey, investigation of the economic consequences of new accounting standards in both the capital markets and companies seems accelerated. The findings of vast majority of studies that analyzed the market reaction to IFRS adoption seem similar to the results of voluntary IFRS adoption studies.

Bruggemann et. al. (2009) investigated the cross-border equity investments by individual investors after IFRS adoption. They analyzed 5.637 firms from 31 countries and found that the IFRS enhances the foreign equity investments, accounting quality, comparability and transparency of financial statements and that financial statements leads a more efficient market and strengthen foreign equity investments in Europe.

Platikanova and Perramon (2009) also examined the 966 non-financial companies from four countries which are France, Germany, Sweden and the United Kingdom, respectively and they resulted that the IFRS adoption increases both the comparability and the disclosure level which directly leads to increasing of market liquidity.

Lambertides and Mazouz (2013) examined the impacts of IFRS adoption on the informational efficiency, market stability, and price adjustment of underlying stocks in Europe. They analyzed 1.187 stocks from 20 countries and found that the IFRS adoption enhances informational efficiency and contributes to the market stability of the underlying stocks. In addition, they also found that the impacts of IFRS on cost of equity capital depends on being common law country or code law country.

Pradhana (2014) analyzed the impacts of IFRS adoption to stock price informativeness measured by stock return synchronicity in eight emerging markets including Brazil, Indonesia, Malaysia, Mexico, Peru, Philippines, South Africa and Turkey and found that IFRS adoption seems to have limited to no impact on the companies in these economies.

Accounting system attributes are also associated with the cost of debt (Armstrong et al. (2010a:184). Decreased information asymmetry, as most prior researches resulted, is assumed to enhance the stock liquidity and to reduce the cost of debt and cost of equity in post-IFRS adoption period.

Francis et al. (2005) show that borrowers with higher accounting quality pay a lower cost of debt. Zhang (2008) indicates that the lower interest rates for firms that report more conservatively. Bharath, Sunder and Sunder (2008) and Costello and Wittenberg-Moerman (2011) indicated that the banks demand higher interest rates and rely less on accounting measures in financial covenants with low disclosure level financial information before IFRS. Barth et al. (2008) also provide evidence of a reduction in cost of equity capital for voluntary adopters in 21 countries.

Chen et al. (2013) have also a similar but more comprehensive study in which the impacts of IFRS on bank loan contractual terms are investigated. They examined more than 20,000 bank loans for borrowers from 23 countries that mandate IFRS adoption and 16 countries that do not mandate IFRS adoption during the 2000-2009 period and found that the interest rates of bank loans of companies from IFRS-mandating countries decreased while the borrowers from countries not mandating IFRS adoption experience an increase in loan interest rates.

Florou and Kosi (2013) also investigate the economic consequences of IFRS adoption for debt financing of companies. They analyzed the sample which is drawn from public bond issues and private loan arrangements completed by listed nonfinancial firms in the period 2000-2009 and found that the IFRS adoption decreases the public debt financing while it has no significant effect on cost of loans.

Moscariello et. al. (2014) analyzed the impact of IFRS on cost of debt in UK and Italy and found that there is no significant effect of IFRS on U.K firms while the cost of debt of Italian firms are affected significantly by new accounting regulation.

Chatzivgeri et al. (2013) analyzed the Greek listed companies in the periods 2001 to 2008 to address the question whether the adoption of IAS/IFRS is associated with lower cost of debt and they found that the increasing disclosure quality leads the better borrowing terms for Greek companies after IAS/IFRS adoption.

Iatridis (2010) tested the financial ratios of UK firms and the volatility effects of IFRS adoption and found that the IFRS affected the financial performance such as profitability and growth of companies in UK firms. A similar study performed by Lantto and Sahlström (2009) showed that the IFRS adoption in Finnish firms has significant changes on key financial ratios. While the profitability ratios increased in post-IFRS period, P/E ratio of Finnish firms decreased. The studies performed by Blanchette and Girard (2011) in Canadian firms and by Iatridis and Rouvolis (2010) in Greek listed companies shows that IFRS adoption has a significant impact on key financial ratios.

Rainsbury et al. (2010) investigates the impacts of IFRS adoption on New Zealand listed firms between the years 2005 and 2007. They resulted that the IFRS adoption in statistically significant increases in earnings, assets and liabilities.

Devalle et al. (2010) examined the impact of IFRS adoption on value relevance of accounting data by sampling 3.721 firms on five European stock exchanges which are Frankfurt, Madrid, Paris, London, and Milan Stock Exchange markets, respectively. The results of their study show a mixed evidence of an increase in value relevance of accounting data. While the influence on earnings on share price increased upon the adoption of IFRS in Germany, France and United Kingdom, the influence of book value of equity decreased except for the UK.

Related literature of IFRS impacts on listed companies in BIST is limited since the majority of IFRS studies focus on the application and explanation of standards (Balsari and Varan, 2014:381).

Alkan and Doğan (2012) examines the IFRS impacts on financial ratios of listed companies for the pre and post IFRS periods in Borsa Istanbul. They used the financial statements of listed companies between the years 2000 and 2009 and found significant differences in financial ratios. In addition, Ataman and Altuk Ozden (2009), Elitas (2010), and Yerehi et. al. (2012) also stated that the new accounting standards have significant effects on financial ratios in listed companies in BIST.

Kargin (2013) investigates the value relevance of accounting information in pre- and post-financial periods of IFRS for the listed firms in BIST from 1998 to 2011 and stated that the value relevance of accounting information has improved in the post-IFRS period.

Suadiye (2012) also examined the value relevance of accounting information in pre and post IFRS periods (2000-2002) and (2005-2009) in BIST and found that the value relevance of accounting information increased after IFRS adoption. Turel (2009) also found that the adoption of IFRS increased evidence that the value relevance of earnings and book value of equity has increased significantly after adopting IFRS.

3.3. LIMITATIONS OF THE STUDY

The study, however, has some limitations. The main limitation of the study is that the sample represents just one country, Turkey. In addition to this, although there are more than the 250 companies in Borsa Istanbul between the years 1994 and 2013, only the companies whose common stocks were exchanged continuously between these years are used in the analyzes. Therefore, the sample size of the study is 76. While the results are consistent with prior studies, they may not be generalizable to all listed companies due to such firms, including all financial institutions, were excluded from the sample.

3.4. METHODOLOGY

IASB firstly aims to harmonize the accounting in all around the world by increasing the transparency, financial information quality and comparability of financial statements with the new accounting standards. In parallel with this goal, vast majority of studies in the literature focuses the pre-IFRS and post-IFRS periods and shows that the IFRS adoption increases the transparency, disclosure level and comparability and also decreases the information asymmetry, stock volatility, cost of equity and cost of debts of companies. In parallel with related literature, the listed companies in BIST is predicted to be affected positively after mandatory adoption to new accounting standards. Within this context, the objectives this study seeks to achieve are in four folds. In the first three hypotheses of the study, stock beta, cost of debt, cost of equity of listed companies in BIST between the periods from 1994 to

2013 is examined whether IFRS adoption has a significant impact or not. Last hypothesis in the study investigates whether the WACC value of firms is affected in the post-IFRS period and the results are evaluated within the context of the impacts of business value.

Stock return volatility which represents the variability of stock price changes could be perceived as a measure of risk faced by investors (Mgbame and Ikhatua, 2013:268). In this line, to provide evidence whether the IFRS adoption has positively affected the stock beta of listed firms in BIST, the hypothesis is;

H1a: There is a significant difference of Stock Betas of listed companies in BIST for the post IFRS-period.

The second aim of the study is to address the effect of IFRS adoption on cost of equity capital. As discussed earlier, IFRS adoption significantly affects the cost of equity because it decreases the volatility of stocks of companies in capital markets (Botosan et. al., 2011: 1086), and increases the level of disclosure and transparency (Espinoza and Trombetta, 2007: 1372, Hail, 2002; 742), in post-IFRS period. To examine the effects of IFRS adoption on cost of equity capital in Turkish Capital Markets, the second hypothesis is established as;

H1b: There is a significant difference of cost of equity capitals of companies in the post IFRS-period in Borsa Istanbul.

Higher quality and comparable accounting information reduce cost of debt via of decreasing the information asymmetry and estimation risk. In the literature, results of studies examined the impact of IFRS adoption on cost of public debt show that the new accounting standards decrease the public debt rates by higher disclosure level (Dhaliwal et al., 2011:329). However, impacts on cost of loans after IFRS adoption are mixed. Despite the public debt market has been developing in recent years (TSPAKB, 2012; 20), listed companies in BIST still mostly prefer private debts from financial institutions. The hypothesis is developed to investigate the impacts of IFRS on cost of debts in BIST.

H1c: There is a significant difference of cost of debts of companies in the post IFRS-period in Borsa Istanbul.

In Parallel with the assumption of changing the stock beta, cost of debt and cost of equity after IFRS adoption, firm value of listed companies in ISE may also be predicted to be affected since their WACC values are affected by the new reporting system in Turkey. Thus, the fourth objective of the study is to examine the impact of IFRS adoption on weighted average cost of capital of companies in BIST.

H1d: There is a significant difference of averages of weighted average cost of capitals of companies in Borsa Istanbul between the periods before and after IFRS Adoption.

3.4.1. Data and Research Design

The empirical analyses concentrate on the comparison Turkish GAAP-based financial statements reported in the pre-adoption periods of IFRS from 1994 to 2003 and IFRS-based financial statements reported in the post-IFRS adoption periods from 2005 to 2013.

The sample period starts from the year of 1994, after the Uniform Chart of Accounts is accepted in Turkey in the same year. The total of 76 non-financial companies whose stocks are exchanged continuously in Borsa Istanbul in this 20-year-period are selected to be sample for this investigation. The study has a comparative analysis for 10 years before adoption of IFRS and 9 years after adoption of IFRS till the year 2013.

The years from 1994 to 2013 are divided into three periods in analyses.

- I. The first period (Period 1) represents, years from 1994 to 2003, pre-IFRS period in BIST,
- II. The second period (Period 2) represents, years from 2005 to 2007, the first IFRS period in which the communique presented under Serial X No.25 of CMB is used in financial reporting. Although this communique is adopted to IFRSs, it is not fully detailed as original IFRSs.
- III. The third period (Period 3) represents, years from 2008 to 2013, the second IFRS period in which the communique presented under Serial XI No.29 of CMB is

used in financial reporting in Borsa Istanbul. Because the all IAS/IFRS are translated into Turkish as TMS / TFRS, this period is fully compatible with the IFRSs adopted by the European Union.

In this 20 year-period, Turkey had 3 main financial crises in the years 1994, 2001 and 2008 (Oktar, S. and Dalyancı, L., 2010:12).

Tanrıöven and Aksoy (2009) investigated the effects of the crisis on real sector are examined in the industrial basis by using Borsa Istanbul quarterly data which involves 1996-2009 period, 10 industries and 113 companies and they resulted that the stock betas are not changed significantly while the financial performance of companies financial performance of listed companies in all industries are affected significantly.

Thus, the hypotheses in the study are tested in two different scenarios which the crises years are included into sample data in Scenario I and the financial crises years are excluded from sample data in Scenario II.

The industrial base of the sample firms is structured by different sectors such as industrial manufacturing, construction & construction materials, energy & oil, telecommunication & media, automotive, textile, agriculture, tourism other industries. The major participant firms (forty two of seventy six) are from construction & construction materials, industrial manufacturing and energy & oil sectors. Telecommunication & media, automotive, textile, food and beverage are other major sectors in the sample as it is shown in the Table 8 in below.

Table 8. Industry Details of Sample Size

Industry	# of Companies	Industry	# of Companies
<i>Industrial Manufacturing</i>	<i>18</i>	<i>Agriculture</i>	<i>3</i>
<i>Construction & Construction Materials</i>	<i>15</i>	<i>Tourism</i>	<i>3</i>
<i>Energy & Oil</i>	<i>9</i>	<i>Packaging</i>	<i>2</i>
<i>Telecommunication & Media</i>	<i>6</i>	<i>Transportation</i>	<i>1</i>
<i>Automotive</i>	<i>6</i>	<i>Retail</i>	<i>1</i>
<i>Textile</i>	<i>5</i>	<i>Military</i>	<i>1</i>
<i>Food & Beverage</i>	<i>4</i>	<i>Other</i>	<i>2</i>
		Total	76

The analyses have excluded banks, insurance, pension and brokerage firms as their accounting measures are not always comparable with those of industrial firms.

To calculate the stock betas of the companies, daily stock returns and the daily volatility of BIST-100 Index are used in the first section of analyses. To calculate the cost of debt and cost of equity, annual financial statements of these companies are used in the second and third hypotheses, respectively. Historical financial statements of listed companies and stock data of listed companies and data are collected from BIST Database. Finally, WACC is calculated by cost of debt and cost of equity values of listed companies in Borsa Istanbul.

Before conducting the test of means' comparison, normality and homogeneity of data are tested by using Kolmogorov-Smirnov and Shapiro-Wilk Normality Tests and Levene's test for homogeneity of variance. Levene's test is prerequisite for the comparison of means. In case of normally distributed data and equal variances, One Way Anova test is used to compare three periods and Tukey HSD is performed for pairwise comparisons of variances. Tamhane Test is used in case of the homogeneity assumption of data is invalid. Further, in case of non-normal distributed data, Kruskal Wallis Test is used to compare the means of periods and Mann-Whitney test, an equivalent non parametric test for the independent t test is conducted for pairwise comparison of means whether the mean difference was significant at the 5% level.

3.5. ANALYSES AND EMPIRICAL RESULTS

The impacts of IFRS adoption on listed companies in Borsa Istanbul are examined for the years from 1994 to 2013.

3.5.1 IFRS Impacts on Stock Beta of Listed Companies in BIST

To determine the impact of IFRS on stock beta value of listed companies, averages of stock beta of listed companies' for the sample periods 1994-2003 as pre-IFRS period and 2005-2007 and 2008-2013 as post IFRS periods are compared in two different scenario which the Scenario I presents the sample data includes the financial crises years and Scenario II presents the sample data does not include the financial data of financial crises in 1994, 2001 and 2008.

The returns for each stock and BIST-100 index were calculated using the following formula:

$$R_{it} = (P_{it} - P_{it-1})/P_{it-1}$$

where, R_{it} is the return on stock i on day t , P_{it} and P_{it-1} are the closing prices of stock i on t and $t - 1$. The equation used for calculating beta for each stock β_i is as follows;

$$\beta_i = cov(R_i R_m) / \sigma^2(R_m)$$

where R_j is the rate return of security j , R_m is the rate of return on the market (rate of return of the market portfolio). Therefore, a stock's beta depends on the “stock’s correlation with market”, own variability – standard deviation (σ_j), as well as on the variability of the market (σ_m).

For the securities for which (Dzaja and Aljinovic, 2013:167):

- 1) $\beta = 1$, systemic risk is equal to the market risk in general, the yield of securities rises and falls in the same percentage as the market portfolio return;
- 2) $\beta > 1$, the yield rises and falls more than the market portfolio, which indicates high-risk securities (investments);
- 3) $\beta < 1$, the yield rises and falls less than the market one, which indicates less risky securities;
- 4) $\beta < 0$, the securities yield is reverse to the market portfolio yield.

To determine the right statistical technique for data, normality test and homogeneity of population variances test are performed for sample data.

Table 9 in below summarizes some relevant information about the data normality. The statistics reported are the size of the sample, mean, standard deviation, minimum and maximum beta value during the sample period and coefficients of skewness and kurtosis.

Table 9. Descriptive Statistics Stock Beta for the Period 1, Period 2, Period 3 in Scenario I and Scenario II

Scenario I (Financial Crises Years Included)

Periods	N	Mean	SD	Min	Max	Skw	Krt
1 (1994-2003)	76	0,8276	0,1499	0,4213	1,1049	-0,280	-0,073
2 (2005-2007)	76	0,7099	0,1481	0,2510	1,0877	-0,211	1,172
3 (2008-2013)	76	0,6892	0,1446	0,3320	0,9569	-0,249	-0,245

Scenario II (Financial Crises Years Not Included)

Periods	N	Mean	SD	Min	Max	Skw	Krt
1 (1994-2003)	76	0,8102	0,1546	0,3758	1,0913	-,322	,209
2 (2005-2007)	76	0,7099	0,1481	0,2510	1,0877	-,211	1,172
3 (2008-2013)	76	0,6811	0,1484	0,2857	0,9766	-,274	-,150

The empirical distribution is summarized through its skewness and kurtosis statistics and compared to the skewness and kurtosis of the normal distribution (Seier, 2006:2). Thus, preliminary evidence on the normality of each distribution of stock beta can be gathered from the last two columns of Table 9. The coefficients of skewness and kurtosis in both Scenario I and Scenario II provide strong evidence about ensuring of normality, but more formal conclusions can be reached through the tests of normality reported below in Table 10.

Table 10. Normality Test of Stock Betas in Scenario I and Scenario II

Scenario I (Financial Crises Years Included)

Stock Beta	Periods	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
	1	,069	76	,200*	,982	76	,344
	2	,084	76	,200*	,974	76	,123
	3	,046	76	,200*	,983	76	,381

Scenario II (Financial Crises Years Not Included)

Stock Beta	Periods	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
	1	,062	76	,200*	,979	76	,232
	2	,084	76	,200*	,974	76	,123
	3	,051	76	,200*	,987	76	,608

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Kolmogorov-Smirnov and Shapiro-Wilk Test are used to test the normality of sample data in Table 10. Given that p value for each period is greater than the significance level ($\alpha = .05$) in both two scenarios, the null hypothesis is accepted to the detriment of the alternative hypothesis that the data is non-normal. To determine the homogeneity of population variances of sample data, Levene-type test is performed and the result is shown in Table 11 below.

Table 11. Test of Homogeneity of Variances of Stock Beta Data in Scenario I and Scenario II

<i>Scenario I (Financial Crises Years Included)</i>			
Levene Statistic	df1	df2	Sig.
,208	2	225	,813
<i>Scenario II (Financial Crises Years Not Included)</i>			
Levene Statistic	df1	df2	Sig.
,347	2	225	,707

Because the p-value is greater than the significant level ($\alpha = .05$), the Levene's test indicates that the variances of periods are homogenous in both Scenario I and Scenario II (df1=2, df2=225). This statement affects the type of follow-up tests which are used for pairwise comparison.

In order to test the hypotheses stated in the previous section, One-Way ANOVA is used to evaluate whether there are significant statistical differences in the stock beta of listed companies in the pre-IFRS and post-IFRS periods in BIST in Table 12.

H₀: There are no significant differences of Stock Beta of listed companies in BIST between the pre-IFRS adoption period and post IFRS-periods.

H₁: There is a significant difference of Stock Beta of listed companies in BIST between the pre-IFRS adoption period and post IFRS adoption periods.

Table 12. One Way Anova Test of Stock Beta Data*Scenario I (Financial Crises Years Included)*

Stock Beta	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,848	2	,424	19,460	,000
Within Groups	4,901	225	,022		
Total	5,749	227			

Scenario II (Financial Crises Years Not Included)

Stock Beta	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,698	2	,349	15,431	,000
Within Groups	5,091	225	,023		
Total	5,790	227			

According to the Table 12, there is a statistically significant differences on stock beta of listed companies in BIST among periods, $F (19,460, P = 0.000)$ for Scenario I which includes the financial crises years and $F (15,431, P = 0.000)$ for Scenario II which excludes the data of financial crises years. Thus, the alternative hypotheses for both scenarios are accepted.

To determine the difference among periods, Tukey's follow up tests are performed since the variances are homogenous in periods.

Table 13. Pairwise Comparison of Period 1 – Period2, Period 2 – Period 3, Period 1 – Period 3 for Scenario I and Scenario II

<i>Scenario I (Financial Crises Years Included)</i>							
<i>Dependent Variable: Stock Beta</i>				%95 Confidence Interval			
	Mean			Std. Error	Sig.	Lower Bound	Upper Bound
	(I) Periods	(J) Periods	Difference (I-J)				
<i>Tukey HSD</i>	1	2	,117745211*	,023941472	,000	,06125939	,17423104
		3	,138456829*	,023941472	,000	,08197100	,19494265
	2	1	-,117745211*	,023941472	,000	-,17423104	-,06125939
		3	,020711618	,023941472	,663	-,03577421	,07719744
	3	1	-,138456829*	,023941472	,000	-,19494265	-,08197100
		2	-,020711618	,023941472	,663	-,07719744	,03577421

Scenario II (Financial Crises Years Not Included)

Dependent Variable: Stock Beta			%95 Confidence Interval				
	(I)	(J)	Mean Difference	Std. Error	Sig.	Lower Bound	Upper Bound
	Periods	Periods	(I-J)				
<i>Tukey</i> <i>HSD</i>	1	2	,100335895*	,024402436	,000	,04276251	,15790928
		3	,129113724*	,024402436	,000	,07154033	,18668711
	2	1	-,100335895*	,024402436	,000	-,15790928	-,04276251
		3	,028777829*	,024402436	,467	-,02879556	,08635122
	3	1	-,129113724*	,024402436	,000	-,18668711	-,07154033
		2	-,028777829*	,024402436	,467	-,08635122	,02879556

*The Mean Difference is significant at 0.05 level

Table 13 above results that the new accounting system in Period 2 and Period 3 has significant impact on stock beta of listed companies in BIST in Scenario I ($p < 0.05$). Mean Difference column indicates that the IFRS adoption decreases the stock beta of listed companies in BIST. Furthermore, the impact of Period 3 on stock beta is greater than the impact of Period 2 in which the serial X No. 25 was in use in financial reporting. In addition, there is not any statistical significant difference ($p > 0.05$) of stock beta of listed companies in BIST in Period 2 (first IFRS adoption period) and Period 3 (second IFRS adoption period). Mean difference column shows that the full IFRS adoption in Period 3 much decreases the stock beta of companies than in the Period 2. In other words, the more IFRS adoption the less stock beta.

The results in Scenario II in which the data of financial crises years are not included shows the same results which means that the financial crises have not statistically significant impact on stock beta of listed companies in BIST. In contrast to Scenario I, there also is a statistically significance difference between the Period 2 and Period 3.

Companies with lower stock beta presents a lower risk for investors. In parallel with related studies in the literature as mentioned before section, the results show that the IFRS adoption has significant impact on stock beta of listed companies in BIST in both Scenario I and Scenario II. The results also indicate that the financial crises do not have significant impact on Stock Beta of listed companies in BIST.

3.5.2. IFRS Impacts on Cost of Equity Capital of Listed Companies in BIST.

To determine the impact of IFRS on cost of equity of listed companies, averages of listed companies' cost of equity values for the sample periods 1994-2003 as pre-IFRS period and 2005-2007 and 2008-2013 as post IFRS periods are compared in two different scenario which the Scenario I presents the sample data includes the financial crises years and Scenario II presents the sample data does not include the data of financial crises in 1994, 2001 and 2008.

The fundamental equation of CAPM in below is used in cost of equity calculation (Copeland et. al., 1995:266);

$$E(R) = R_f + (R_m - R_f)\beta$$

Expected return of market portfolio presents the annual return of BIST 100 Index by inflation adjusted. Interest rates of treasury bonds are used as Risk-free rate. Stock beta calculated for the test of previous hypothesis is used as stock beta in equation.

Table 14 below summarizes some relevant information about the data normality. The statistics reported are the mean, standard deviation, minimum and maximum cost of equity value during the sample period, coefficients of skewness and kurtosis.

Table 14. Descriptive Statistics of Cost of Equity Capital Data

Scenario I (Financial Crises Years Included)

Periods	N	Mean	SD	Min	Max	Skw	Krt
1 (1994-2003)	76	0,3781	0,0652	0,2407	0,5424	0,249	-0,163
2 (2005-2007)	76	0,2198	0,0163	0,1735	0,2572	-0,184	-0,033
3 (2008-2013)	76	0,0294	0,0278	-0,0489	0,0995	-0,148	0,255

Scenario II (Financial Crises Years Not Included)

Periods	N	Mean	SD	Min	Max	Skw	Krt
1 (1994-2003)	76	0,3479	0,0678	0,2077	0,5322	0,276	-,038
2 (2005-2007)	76	0,2198	0,0163	0,1735	0,2572	-0,184	-,033
3 (2008-2013)	76	0,1156	0,0283	0,0639	0,1892	0,421	-,205

The coefficients of skewness and kurtosis provide strong evidence about accepting of normality assumption in both Scenario I and Scenario II. Table 15 below shows the results of Kolmogorov-Smirnov and Shapiro-Wilk normality tests.

Table 15. Normality Test of Cost of Equity Capital Data

<i>Scenario I (Financial Crises Years Included)</i>							
<i>CoEq</i>	Kolmogorov-Smirnov ^a				Shapiro-Wilk		
	Periods	Statistic	df	Sig.	Statistic	df	Sig.
	1	,061	76	,200*	,989	76	,748
	2	,072	76	,200*	,989	76	,761
	3	,073	76	,200*	,993	76	,966
<i>Scenario II (Financial Crises Years Not Included)</i>							
<i>CoEq</i>	Kolmogorov-Smirnov ^a				Shapiro-Wilk		
	Periods	Statistic	df	Sig.	Statistic	df	Sig.
	1	,040	76	,200*	,989	76	,751
	2	,072	76	,200*	,989	76	,761
	3	,062	76	,200*	,979	76	,253

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Given that p value of each period is greater than the significance level($\alpha = 0.05$), the null hypothesis is accepted that the data has normal distribution in both Scenario I and Scenario II.

Levene-type tests is performed to test the homogeneity of data and the results are shown in Table 16 below.

Table 16. Test of Homogeneity of Variances of Cost of Equity Capital Data

<i>Scenario I (Financial Crises Years Included)</i>			
Levene Statistic	df1	df2	Sig.
49,019	2	225	,000
<i>Scenario II (Financial Crises Years Not Included)</i>			
Levene Statistic	df1	df2	Sig.
53,815	2	225	,000

Because the p-value is less than the significant level ($\alpha = 0.05$), the Levene's test indicates that the variances of periods are not homogenous (df1=2, df2=225) for Scenario I and Scenario II. Consequently, Tamhane's test is applied to examine the differences in the means for each pair; a statistically significant difference at the 95% confidence level.

In order to test the hypotheses stated in the previous section, One-Way ANOVA Test is used to evaluate whether there are statistically significant differences in cost of equity capital of listed companies in the pre-IFRS and post-IFRS periods in BIST.

H₀: There are not any differences of Cost of Equity of listed companies in BIST between the pre-IFRS adoption period and post IFRS-periods.

H₁: There is a significant difference of Cost of Equity of listed companies in BIST between the pre-IFRS adoption period and post IFRS-periods.

Table 17. One Way Anova Test of Cost of Equity Capital Data

Scenario I (Financial Crises Years Included)

	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
<i>Between Groups</i>	4,632	2	2,316	1309,668	,000
<i>Within Groups</i>	,398	225	,002		
<i>Total</i>	5,030	227			

Scenario II (Financial Crises Years Not Included)

	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
<i>Between Groups</i>	2,058	2	1,029	543,854	,000
<i>Within Groups</i>	,426	225	,002		
<i>Total</i>	2,484	227			

According to the Table 17, cost of equity capital of listed companies in BIST are statistically different among periods, $F (1309,668, P = 0.000)$ for Scenario I which includes the financial crises years and $F (543,854, P = 0.000)$ for Scenario II which excludes the data of financial crises years. Thus, the null hypothesis is rejected which means that the cost of equity of listed companies in BIST are statistically different in the post –IFRS period in both two scenario.

As the Levene's test in Table 16 indicates that the variances of periods are not homogenous (df1=2, df2=225) for Scenario I and Scenario II, Tamhane's test is applied to examine the differences in the means for each pair; a statistically significant difference at the 95% confidence level.

Table 18. Pairwise Comparison of Cost of Equity Capital Data for Scenario I and Scenario II

Scenario I (Financial Crises Years Included)

Dependent Variable: Cost of Equity Data				%95 Confidence Interval			
Tamhane	(I)	(J)	Mean	Std. Error	Sig.	Lower	Upper
	Periods	Periods	Difference (I-J)				
	1	2	,158297895*	,007719225	,000	,13949349	,17710230
		3	,348649316*	,008141419	,000	,32888366	,36841497
	2	1	-,158297895*	,007719225	,000	-,17710230	-,13949349
		3	,190351421*	,003707427	,000	,18137509	,19932775
	3	1	-,348649316*	,008141419	,000	-,36841497	-,32888366
		2	-,190351421*	,003707427	,000	-,19932775	-,18137509

Scenario II (Financial Crises Years Not Included)

Dependent Variable: Cost of Equity Data				%95 Confidence Interval			
Tamhane	(I)	(J)	Mean	Std. Error	Sig.	Lower	Upper
	Periods	Periods	Difference (I-J)				
	1	2	,128160724*	,008007959	,000	,10864966	,14767179
		3	,232328316*	,008436603	,000	,21184236	,25281427
	2	1	-,128160724*	,008007959	,000	-,14767179	-,10864966
		3	,104167592*	,003754677	,000	,09507556	,11325962
	3	1	-,232328316*	,008436603	,000	-,25281427	-,21184236
		2	-,0104167592*	,003754677	,000	-,11325962	-,09507556

*. The mean difference is significant at the 0.05 level.

Table 18 above results that the new accounting system has significant impact on cost of equity capitals of listed companies in BIST. Mean Difference column in Scenario I indicates that the impact of Period 3 on cost of equity capital is two times greater than the impact of Period 2 in which the serial X No.25 was in use in financial reporting and nearly two times greater than the impact of Period 2 in Scenario II. In addition, cost of equity capital is also statistically difference and it has been still decreasing in the recent years.

3.5.3. IFRS Impacts on Cost of Debt of Listed Companies in BIST

To determine the impact of IFRS on cost of debts of listed companies, averages of cost of debts of listed companies' for the sample periods 1994-2003 as pre-IFRS period and 2005-2007 and 2008-2013 as post IFRS periods are compared in two scenario which the Scenario I presents the sample data includes the financial crises years and Scenario II presents the sample data does not include the data of financial crises in 1994, 2001 and 2008.

The ratio of total financial expenses to total financial debt for each period is determined as the cost of debt indicator for each listed company in Borsa Istanbul.

Table 19 below summarizes some relevant information about the data normality. The statistics reported are the mean, standard deviation, minimum and maximum cost of debt during the sample period, coefficients of skewness and kurtosis.

Table 19. Descriptive Statistics of Cost of Debt Data

Scenario I (Financial Crises Years Included)

Periods	N	Mean	SD	Min	Max	Skw	Krt
1 (1994-2003)	76	,1715	,1076	,0018	,5783	,843	1,513
2 (2005-2007)	76	,0899	,0965	-,2281	,7407	3,845	28,741
3 (2008-2013)	76	,1666	,1531	,0133	1,1382	4,483	24,976

Scenario II (Financial Crises Years Not Included)

Periods	N	Mean	SD	Min	Max	Skw	Krt
1 (1994-2003)	76	,1428	,0948	,0013	,5883	1,484	5,375
2 (2005-2007)	76	,0899	,0965	-,2281	,7407	3,845	28,740
3 (2008-2013)	76	,1396	,1267	,0150	,8206	4,040	19,931

The coefficients of skewness and kurtosis provide strong evidence about accepting of normality assumption in both Scenario I and Scenario II. Table 20 below shows the results of Kolmogorov-Smirnov and Shapiro-Wilk normality tests.

Table 20. Normality Test of Cost of Debt Data*Scenario I (Financial Crises Years Included)*

CoDebt	Kolmogorov-Smirnov ^a				Shapiro-Wilk		
	Periods	Statistic	df	Sig.	Statistic	df	Sig.
	1	,074	76	,200*	,953	76	,007
	2	,227	76	,000	,599	76	,000
	3	,244	76	,000	,566	76	,000

Scenario II (Financial Crises Years Not Included)

CoDebt	Kolmogorov-Smirnov ^a				Shapiro-Wilk		
	Periods	Statistic	df	Sig.	Statistic	df	Sig.
	1	,081	76	,200*	,899	76	,000
	2	,227	76	,000	,599	76	,000
	3	,227	76	,000	,589	76	,000

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Given that p value of each period is less than the significance level ($\alpha = 0.05$), in Table 20, the null hypothesis is rejected in favor of the alternative hypothesis that the data is non-normal in both Scenario I and Scenario II. Non-Parametric tests are used for the non-normal data (Kalayci et. al., 2009: 85). Thus, Kruskal-Wallis Test, as an alternative non-parametric version of One Way Anova Test is conducted to evaluate whether there are significant statistical differences in the cost of debts in the pre-IFRS and post-IFRS periods in BIST.

H₀: There are no significant differences of Cost of Debts of listed companies in BIST between the pre-IFRS adoption period and post IFRS-periods.

H₁: There is a significant difference of Cost of Debts of listed companies in BIST between the pre-IFRS adoption period and post IFRS-periods.

Table 21 below presents the descriptive statistics of Kruskal-Wallis H Test for Scenario I and Scenario II.

Table 21. Descriptive Statistics of Cost of Debt Data

<i>Scenario 1 (Financial Crises Years Included)</i>					
	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
<i>Cost of Debts</i>	228	,14271686	,126746548	-,228130	1,138267
<i>Periods</i>	228	2,00	,818	1	3
<i>Scenario 2 (Financial Crises Years Not Included)</i>					
	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
<i>Cost of Debts</i>	228	,12414824	,109320574	-,228130	,820631
<i>Periods</i>	228	2,00	,818	1	3

Table 22 shows the Mean Ranks of cost of debt of listed companies in BIST in three period.

Table 22. Mean Ranks of Cost of Debt Data for the Period 1, Period 2 and Period 3 in Scenario I and Scenario II

<i>Scenario 1 (Financial Crises Years Included)</i>					
	<i>Periods</i>	<i>N</i>	<i>Mean Rank</i>	<i>Cost of Debt</i>	
<i>Cost of Debt</i>	1	76	137,53	<i>Chi-Square</i>	41,642
	2	76	74,80	<i>df</i>	2
	3	76	131,17	<i>Asymp. Sig.</i>	,000
	Total	228			
<i>Scenario 2 (Financial Crises Years Not Included)</i>					
	<i>Periods</i>	<i>N</i>	<i>Mean Rank</i>	<i>Cost of Debt</i>	
<i>Cost of Debt</i>	1	76	133,25	<i>Chi-Square</i>	24,454
	2	76	84,24	<i>df</i>	2
	3	76	126,01	<i>Asymp. Sig.</i>	,000
	Total	228			

a. Kruskal Wallis Test

b. Grouping Variable: Periods

Mean Rank scores in Table 22 shows that the IFRS adoption decreases the cost of debt of listed companies in BIST. According to the results, the impact of IFRS adoption on cost of debt in Period 1 is greater than the impact of Period 2 in BIST. The main reason is that the new accounting regulation is totally different from the local

standards. However, the accounting standards used in Period 1 and Period 2 is much familiar.

Given that p value is less than the significance level ($\alpha = 0.05$) in Table 22, the null hypothesis is rejected. In other words, difference of cost of debt among periods are statistically significant in listed companies in BIST.

Mann-Whitney U test, which provide the identical results with the Kruskal-Wallis Test for pairwise comparisons as follow-up test, is conducted. In addition, Bonferroni approach is used to control for Type I error across tests.

The Bonferroni calculates a new pairwise alpha to keep the family wise alpha value at .05. The formula for doing this is as follows:

$$\alpha_B = \frac{\alpha_{FWE}}{C}$$

where α_B is the new alpha based on the Bonferroni Test that should be used to evaluate each comparison or significance test, α_{FWE} is the familywise error rate that is desired and C is the number of comparisons.

In this calculation, the Bonferroni is calculated as 0.016 because there are three periods in pairwise comparisons and the significance level is 0.05 in tests.

Pairwise Comparison for the Period 1 and Period 2 is shown in Table 23 below.

Table 23. Pairwise Comparison of Mean Ranks of Period 1 and Period 2 in Scenario 1 and Scenario 2

Scenario I (Financial Crises Years Included)

	<i>Periods</i>	<i>N</i>	<i>Mean Rank</i>	<i>Sum of Ranks</i>
<i>Cost of Debts</i>	1	76	95,71	7274,00
	2	76	57,29	4354,00
	Total	152		

Scenario II (Financial Crises Years Not Included)

	<i>Periods</i>	<i>N</i>	<i>Mean Rank</i>	<i>Sum of Ranks</i>
<i>Cost of Debts</i>	1	76	91,38	6945,00
	2	76	61,62	4683,00
	Total	152		

Mean Ranks in both Scenario 1 and Scenario 2 show that the cost of debt of listed companies in BIST decrease in first adoption period of IFRS. According to Table 23.1 below, decreasing in cost of debt is statistically significant at the %95 confidence level by given p value in Scenario 1 and Scenario 2.

Table 23.1. Pairwise Comparison of Mean Ranks of Period 1 and Period 2 in Scenario I and Scenario II

<i>Scenario I (Financial Crises Years Included)</i>		<i>Scenario II (Financial Crises Years Not Included)</i>	
	<i>Cost of Debt</i>		<i>Cost of Debt</i>
<i>Mann-Whitney U</i>	1428,000	<i>Mann-Whitney U</i>	1757,000
<i>Wilcoxon W</i>	4354,000	<i>Wilcoxon W</i>	4683,000
<i>Z</i>	-5,380	<i>Z</i>	-4,168
<i>Asymp. Sig. (2-tailed)</i>	,000	<i>Asymp. Sig. (2-tailed)</i>	,000

a. Grouping Variable: Periods

Pairwise Comparison for the Period 1 and Period 3 is shown in Table 24 below.

Table 24. Pairwise Comparison of Mean Ranks of Period 1 and Period 3 in Scenario I and Scenario II

Scenario I (Financial Crises Years Included)

	<i>Periods</i>	<i>N</i>	<i>Mean Rank</i>	<i>Sum of Ranks</i>
<i>Cost of Debts</i>	1	76	80,32	6104,00
	3	76	72,68	5524,00
	Total	152		

Scenario II (Financial Crises Years Not Included)

	<i>Periods</i>	<i>N</i>	<i>Mean Rank</i>	<i>Sum of Ranks</i>
<i>Cost of Debts</i>	1	76	80,37	6108,00
	3	76	72,63	5520,00
	Total	152		

Mean Ranks in both Scenario I and Scenario II show that the cost of debt of listed companies in BIST decrease in first adoption of IFRS. However, Table 24.1 below, shows that the decreasing in cost of debt is not statistically significant at the %95 confidence level by given p value.

Table 24.1. Pairwise Comparison of Mean Ranks of Period 1 and Period 3 in Scenario I and Scenario II

<i>Scenario I (Financial Crises Years Included)</i>		<i>Scenario II (Financial Crises Years Not Included)</i>	
	<i>Cost of Debt</i>		<i>Cost of Debt</i>
<i>Mann-Whitney U</i>	2598,000	<i>Mann-Whitney U</i>	2594,000
<i>Wilcoxon W</i>	5524,000	<i>Wilcoxon W</i>	5520,000
<i>Z</i>	-1,069	<i>Z</i>	-1,083
<i>Asymp. Sig. (2-tailed)</i>	,285	<i>Asymp. Sig. (2-tailed)</i>	,279

a. Grouping Variable: Periods

The results show that the Serial X No. 25 communique in Period 2 has a significant impact on cost of debt while the Serial XI No.29 communique in Period 3 does not affect the cost of debt of listed companies in BIST statically significant. The

financial crises in 2008 does not affect the cost of debt in statistically significant in Period 3.

3.5.4. IFRS Impacts on Weighted Average Cost of Capital Values of Listed Companies in BIST

To determine the impact of IFRS on weighted average cost of capital of listed companies, averages of WACC values of listed companies' for the sample periods 1994-2003 as pre-IFRS period and 2005-2007 and 2008-2013 as post IFRS periods are compared in two scenario which the Scenario I presents the sample data includes the financial crises years and Scenario II presents the sample data does not include the data of financial crises in 1994, 2001 and 2008.

Table 25 below summarizes some relevant information about the data normality. Skewness and Kurtosis coefficients both show that the data seems non-normally distributed.

Table 25. Descriptive Statistics of WACC Data

Scenario I (Financial Crises Years Included)

Periods	N	Mean	SD	Min	Max	Skw	Krt
1 (1994-2003)	76	0,2639	0,0977	0,0815	0,9145	3,840	25,812
2 (2005-2007)	76	0,1600	0,0791	0,0634	0,7529	5,761	42,715
3 (2008-2013)	76	0,0841	0,0750	-0,0031	0,6368	5,529	39,564

Scenario II (Financial Crises Years Not Included)

Periods	N	Mean	SD	Min	Max	Skw	Krt
1 (1994-2003)	76	0,2407	,0976	,0738	,8844	3,801	24,777
2 (2005-2007)	76	0,1600	,0791	,0634	,7529	5,761	42,715
3 (2008-2013)	76	0,1189	,0670	,0490	,6350	6,244	47,822

The coefficients of skewness and kurtosis provide strong evidence about accepting of normality assumption in both Scenario 1 and Scenario 2. Table 26 below shows the results of Kolmogorov-Smirnov and Shapiro-Wilk normality tests.

Table 26. Normality Test of WACC Data*Scenario I (Financial Crises Years Included)*

WACC	Kolmogorov-Smirnov ^a				Shapiro-Wilk		
	Periods	Statistic	df	Sig.	Statistic	df	Sig.
	1	,141	76	,001	,698	76	,000
	2	,254	76	,000	,510	76	,000
	3	,203	76	,000	,531	76	,000

Scenario II (Financial Crises Years Not Included)

WACC	Kolmogorov-Smirnov ^a				Shapiro-Wilk		
	Periods	Statistic	df	Sig.	Statistic	df	Sig.
	1	,163	76	,000	,708	76	,000
	2	,254	76	,000	,510	76	,000
	3	,266	76	,000	,472	76	,000

a. Lilliefors Significance Correction

Given that p value of each period is less than the significance level ($\alpha = 0.05$), the null hypothesis is rejected in favor of the alternative hypothesis that the data is non-normal in both Scenario I and Scenario II. Thus, Kruskal-Wallis Test, as an alternative non-parametric version of One Way Anova Test is conducted to evaluate whether there are significant statistical differences in the weighted average cost of capitals in the pre-IFRS and post-IFRS periods in BIST.

H₀: There are no significant differences of WACC values of listed companies in BIST between pre-IFRS adoption period and the post IFRS adoption periods.

H₁: There is a significant difference of WACC values of listed companies in between pre-IFRS adoption period and the post IFRS adoption periods.

Mean Rank scores in Table 27 below shows that the impact of IFRS adoption on WACC.

Table 27. Mean Ranks of WACC Data for the Period 1, Period 2 and Period 3 in Scenario I and Scenario II

Scenario I (Financial Crises Years Included)

	<i>Periods</i>	<i>N</i>	<i>Mean Rank</i>		<i>WACC</i>
WACC	1	76	181,89	Chi-Square	156,265
	2	76	113,46	Df	2
	3	76	48,14	Asymp. Sig.	,000
	Total	228			

Scenario II (Financial Crises Years Not Included)

	<i>Periods</i>	<i>N</i>	<i>Mean Rank</i>		<i>WACC</i>
WACC	1	76	175,66	Chi-Square	120,879
	2	76	109,51	Df	2
	3	76	58,33	Asymp. Sig.	,000
	Total	228			

- a. Kruskal Wallis Test
- b. Grouping Variable: Periods

Table 27 presents that there are differences among Period 1, Period 2 and Period 3. WACC of listed companies in BIST decreases after IFRS adoption, especially in Period 3. By given that the p value is less than the significance level ($\alpha = 0.05$), decreasing in WACC of companies in both the first and second IFRS adoption periods is statistically significant. In addition, financial crises do not affect the impact of IFRS adoption on WACC of listed companies in BIST in statistically significant.

Mann-Whitney U Test is conducted as follow up test for pairwise comparison by Bonferroni correction. The significance level is calculated as 0.0167. Pairwise Comparison for the Period 1 and Period 2 in Scenario I and Scenario II is shown in Table 28 below.

Table 28. Pairwise Comparison of Mean Ranks of Period 1 and Period 2*Scenario I (Financial Crises Years Included)*

	<i>Periods</i>	<i>N</i>	<i>Mean Rank</i>	<i>Sum of Ranks</i>
WACC	1	76	107,83	8195,00
	2	76	45,17	3433,00
	Total	152		

Scenario II (Financial Crises Years Not Included)

	<i>Periods</i>	<i>N</i>	<i>Mean Rank</i>	<i>Sum of Ranks</i>
WACC	1	76	104,12	7913,00
	2	76	48,88	3715,00
	Total	152		

Mean Ranks in both Scenario I and Scenario II show that the WACC of listed companies in BIST decrease in first adoption period of IFRS. According to Table 28.1 below, decreasing in WACC is statistically significant at the %95 confidence level by given p value in Scenario I and Scenario II.

Table 28.1. Pairwise Comparison of Mean Ranks of Period 1 and Period 2 in Scenario I and Scenario II

<i>Scenario I (Financial Crises Years Included)</i>		<i>Scenario II (Financial Crises Years Not Included)</i>	
	WACC		WACC
<i>Mann-Whitney U</i>	507,000	<i>Mann-Whitney U</i>	789,000
<i>Wilcoxon W</i>	3433,000	<i>Wilcoxon W</i>	3715,000
<i>Z</i>	-8,774	<i>Z</i>	-7,735
<i>Asymp. Sig. (2-tailed)</i>	,000	<i>Asymp. Sig. (2-tailed)</i>	,000

a. Grouping Variable: Periods

Pairwise Comparison for the Period 1 and Period 3 in Scenario I and Scenario II is shown in Table 29 below.

Table 29. Pairwise Comparison of Mean Ranks of Period 1 and Period 3 for the Scenario I and Scenario II

Scenario I (Financial Crises Years Included)

	<i>Periods</i>	<i>N</i>	<i>Mean Rank</i>	<i>Sum of Ranks</i>
WACC	1	76	112,57	8555,00
	3	76	40,43	3073,00
	Total	152		

Scenario II (Financial Crises Years Not Included)

	<i>Periods</i>	<i>N</i>	<i>Mean Rank</i>	<i>Sum of Ranks</i>
WACC	1	76	110,04	8363,00
	3	76	42,96	3265,00
	Total	152		

Mean Ranks show that the WACC of listed companies in BIST decrease in first adoption of IFRS. This difference is statistically significant since the p value of each period is less than the significance level ($\alpha = 0.05$) in Table 29.1 below.

Table 29.1. Pairwise Comparison of Mean Ranks of Period 1 and Period 2 in Scenario I and Scenario II

<i>Scenario I (Financial Crises Years Included)</i>		<i>Scenario II (Financial Crises Years Not Included)</i>	
	WACC		WACC
<i>Mann-Whitney U</i>	147,000	<i>Mann-Whitney U</i>	339,000
<i>Wilcoxon W</i>	3073,000	<i>Wilcoxon W</i>	3265,000
<i>Z</i>	-10,100	<i>Z</i>	-9,393
<i>Asymp. Sig. (2-tailed)</i>	,000	<i>Asymp. Sig. (2-tailed)</i>	,000

a. Grouping Variable: Periods

The results about the impacts of WACC of companies after IFRS adoption is parallel with the related literature as mentioned previous section.

CONCLUSION

Financial statements which are main indicators reflecting the business life are more necessary with the increasing of integration of cross-border economies. Thus, financial reports are expected to provide relevant, reliable, understandable and comparable information in parallel with economic integration (Aslanertik and Gümüş, 2012:13).

In this line, IFRS is adopted more than 110 countries in all around the world. In Turkey, IFRS are also mandatory for public companies since 2005.

In parallel with the increasing of IFRS adoption in all around the world, impacts of IFRS adoption on companies are started to investigate by both the practitioners and researchers.

The vast majority of related literature provides evidence the effects of IFRS/IAS adoption increases the comparability of firms' financial information across financial markets (Wang, 2011: 31; Iatridis, 2010:165; Brochet et al., 2012: 29; Cascino, and Gassen, 2011: 36), transparency and disclosure level of companies (Ding, et. al., 2007:3; Bae, et al. 2008:599) by requiring more qualitative and quantitative disclosures than many country-specific GAAP requirements (Wright and Hobbs, 2010:23). These impacts directly lead to lower information asymmetry (Hansen et. al. 2013: 2; Yu, 2010) lower stock volatility, lower cost of equity and debt financing and the lower information asymmetry by IFRS adoption increases the market efficiency (El-Gazzar et al., 1999:246) and encourages the individual investors for foreign equity investments (Brüggeman et. al. 2009:28).

In parallel with these conclusions in stock beta, cost of debt and cost of equity, the new accounting system is expected to have a positive consequence on firm value by decreasing its weighted average cost of capital in DCF model for the listed companies in Borsa Istanbul.

Within the context of this question, this study examines the impacts of IFRS adoption on stock beta in first hypothesis. After that, the cost of equity capital equity and cost of debts which are the main variables of WACC calculation are tested whether

the IFRS adoption impacts. Finally, impacts of IFRS adoption on WACC values of listed companies in Borsa Istanbul are tested.

The empirical analysis in the study concentrates on the comparison Turkish GAAP-based financial statements reported in the pre-adoption periods of IFRS from 1994 to 2003 and IFRS-based financial statements reported in the post-IFRS adoption periods from 2005 to 2013 with the sample size of 76 firms.

The years from 1994 to 2013 are divided into three periods in analyses.

- I. The first period (Period 1) represents, years from 1994 to 2003, pre-IFRS period in BIST,
- II. The second period (Period 2) represents, years from 2005 to 2007, the first IFRS period in which the communique presented under Seri: X No.25 of CMB is used in financial reporting. Although this communique is adopted to IFRSs, it is not fully detailed as original IFRSs.
- III. The third period (Period 3) represents, years from 2008 to 2013, the second IFRS period in which the communique presented under Seri: XI No.29 of CMB is used in financial reporting in BIST. Since the all IAS/IFRS are translated into Turkish as TMS / TFRS, this period is fully compatible with the IFRSs adopted by the European Union.

In this 20 year-period, Turkey had three main financial crises in the years 1994, 2001 and 2008 (Oktar, S. and Dalyancı, L., 2010:12). Thus, the hypotheses in the study are tested in two different scenarios which the crises years are included into sample data in Scenario I and the financial crises years are excluded from sample data in Scenario II.

Results show that the listed companies that adopted IFRS have less volatile stocks which means that stock price informativeness increased in post IFRS adoption period.

Cost of equity capital of listed companies in Borsa Istanbul also decreased after mandatory IFRS adoption and the difference between periods is statistically significant. Increased financial disclosure and transparency of financial information, enhanced information comparability, along with changes in legal and institutional enforcement may have the effects on this decreasing.

Cost of debt of listed companies also decreased in the post IFRS adoption period in Borsa Istanbul. Reducing the inflation rate may also have an impact on borrowing costs for listed companies especially in post IFRS adoption period. While the difference between pre-IFRS adoption period is statistically significant, the difference between pre-IFRS adoption period and second post IFRS adoption period is not statistically significant.

These results are also consistent with the assertion that a set of high quality accounting standards by increased disclosure level and transparency improves the quality of financial reporting and influences the risk perception of investors and also companies started to have better debt conditions and lower cost of capital value for their investments.

In addition, as mentioned before, the process of valuing a company with the DCF method contains different stages and the WACC is one of the most important input factors in the DCF model. Small changes in the WACC may have large impacts on firm value which means that the lower WACC makes the predicted cash flows high in NPV calculation. Therefore, the firm value is expected to be higher in the DCF calculation after IFRS adoption in Borsa Istanbul.

Results in the study also indicate that the WACC value of companies are statistically different and has been decreasing in post IFRS adoption period. Besides the positive impacts of IFRS adoption such as low information asymmetry, more reliable, comparable and transparent financial information, reducing the inflation rate which may lead the low borrowing costs for listed companies especially in post IFRS adoption period may also have an impact on low WACC values. According to this result, the listed companies adopted IFRS have a higher business value in DCF method.

Besides being mandatory for public companies since 2005, according to the New Turkish Code of Commerce by numbered 6102, IFRS are also mandatory for the companies that exceed the two of three limits of the criteria - “annual sales amount”, “total amount of year-end asset” and “average employee number in a year” - which are determined by the council of ministers, even their shares are not listed in Borsa Istanbul. Therefore, the number of the companies using IFRS has been increasing in recent years in Turkey. This means that the number of financial statements that are

comparable and also have reliable, transparent and high quality disclosures for the investors increases in recent years.

Considering these positive impacts of IFRS adoption, the limits in the legislation are supposed to be minimized to enhance the percentage of IFRS adoption by companies in Turkey.

Local Financial Reporting Framework Project of Public Oversight Accounting and Auditing Standards Authority is going to have a positive impact by adopting the small and medium sized companies to IFRS in a near future.

The main contribution of the study is to expand the related literature about IFRS impacts on listed companies in Borsa Istanbul, since the majority of IFRS studies mostly focus on the application and explanation of standards instead of empirical results of adoption as mentioned before. Furthermore, the sample period in the study covers a wide range for analyzing the IFRS impacts in BIST. 10 years before the IFRS adoption and 9 years for the post adoption period help to show the new accounting system effects clearly by providing empirical results. And finally, in our knowledge, this is the first study that investigates the impacts of IFRS adoption on DCF valuation method by analyzing the change in WACC value.

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Appendix 1. Different Philosophies in Accounting

Variable	Anglo-American Model	Continental-European Model
Legal System	Common Law: limited number of regulations, precedent cases are the centre of regulation	Codified Law; highly influenced by legal concepts
Taxation system	Tax laws are independent from national accounting requirements	Tax laws define methods of evaluation, methods of recording business transactions and financial statement presentation
Provider of capital	Mass shareholding	Bank on government financing

Appendix 2. Financial Standards That Enhances the Financial Quality

<u>Standard</u>	<u>Authorized Board</u>
International Financial Reporting Standards (IFRS)	International Accounting Standards Board (IASB)
International Standards of Auditing (ISA)	IFAC (International Federation of Accountants Committee)
Corporate Governance Principles	Organization of Economic Co-Operation and Development (OECD)
	Basel Committee on Banking Supervision (BCBS)
	International Organization of Securities Commissions (IOSCO)
Basic Principles of Insurance	International Association of Insurance Supervisors (IAIS)
	World Bank
Transparency in Fiscal Policies	International Monetary Fund (IMF)
Transparency in Budgeting	International Monetary Fund (IMF)
	International Monetary Fund (IMF)
Data Distribution	International Monetary Fund (IMF)
Security Payment Systems	Committee of European Securities Regulators (CPSS)

Source: UN, 2005, http://www.unctad.org/en/docs/c2isard28_en.pdf