

**Validity of the Triple Deficit Hypothesis in Turkey:
Bounds Test Approach
Merter Akıncı, Ömer Yılmaz**

**Profitability Analysis of Banks:
An Application on the Turkish Banking Industry
Gözde Çerçi, Serkan Yılmaz Kandır, Yıldırım Beyazıt Önal**

**Comparison of the Performance of ISE Corporate Governance
Index Against Performances of Two Newly Created Indices
Hakan Güçlü**

The ISE Review

Quarterly Economics and Finance Review

Publisher on behalf of ISE

İbrahim M. TURHAN, Ph. D.

Managing Editor

Mustafa K. YILMAZ, Assoc. Professor

Editor-in-Chief

R. Ali KÜÇÜKÇOLAK, Ph. D.

Editorial Board

Mustafa BALTACI	Salih AKKILIÇ, Ph. D.
Adalet POLAT	Nuri AYDIN
Aydın SEYMAN, Ph. D.	Asım Erdener AYHAN
Nihat GÜMÜŞ, Ph. D.	Korkmaz ERGUN, Ph. D.
Recep BİLDİK, Ph. D.	Tuncay ERSÖZ
Korhan ERYILMAZ	Hakan GÜÇLÜ, Ph. D.
Gürsel KONA	Güzhan GÜLAY, Ph. D.
Osman PARLAK	Yusuf İzzettin MUĞALOĞLU, Ph. D.
Ali İhsan DİLER	Levent ÖZER
Ercan KIRAN, Ph. D.	Evrin ŞENKESEN, Ph. D.
Sedat UĞUR, Ph. D.	

Editorial Production & Printing

UFUK REKLAMCILIK
Maltepe Mah. Gümüşsuyu
Cad. Çiftelavuzlar Yolu
1. Matb. Sitesi No:1/68
Topkapı / İSTANBUL
Tel: 0212 544 92 30
Fax: 0212 544 92 29
www.ufukmat.com

Print Date: August 2012



The views and opinions in this Journal belong to the authors and do not necessarily reflect those of the Istanbul Stock Exchange management and / or its departments.

Copyright © 1997 ISE

All Rights Reserved

This review is published quarterly. Due to its legal status, the Istanbul Stock Exchange is exempt from corporate tax.

Address of Administration: İMKB, Istanbul Stock Exchange, Reşitpaşa Mah. Tuncay Artun Cd. Emirgan 34467, Istanbul / TURKEY

Contact Address: İMKB (ISE), Research Department,
Reşitpaşa Mah. Tuncay Artun Cd. Emirgan 34467, Istanbul / TURKEY

Phone: (0212) 298 21 00 Fax: (0212) 298 25 00

Web site: <http://www.ise.org>

E-mail: evren.arik@imkb.gov.tr, elif.mutlu@imkb.gov.tr

Objectives and Contents

The ISE Review is a journal published quarterly by the Istanbul Stock Exchange (ISE). Theoretical and empirical articles examining primarily the capital markets and securities exchanges as well as economics, money, banking and other financial subjects constitute the scope of this journal.

Copy Guides for Authors

Articles sent to the ISE Review will be published after the examination of the Managing editor and the subsequent approval of the Editorial Board. Standard conditions that the articles should meet for publication are as follows:

1. Articles should be written in both English and Turkish.
2. Manuscripts should be typed, single space on an A4 paper (21cm.x 29.7 cm.) with at least 3 cm. margins in Microsoft Word program and should be submitted electronically to <http://mts.imkb.gov.tr>
3. Articles should be original, unpublished or shall not be under consideration for publication elsewhere.
4. If and when the article is approved by the Editorial Board, the author should agree that the copyright for articles is transferred to the publisher. The copyright covers the exclusive right to reproduce and distribute the articles.
5. If necessary, the Editorial Board may demand changes, deletions and/or modifications in the contents of the article without infringing on the basic structure of the text.
6. The first page of the article should contain a concise and informative title, the full name(s) and affiliation(s) of the author(s) and abstract of not more than 100 words, summarizing the significant points of the article. The full mailing address, telephone and fax numbers of the corresponding author, acknowledgements and other related notes should also appear in the first page as footnote(s).
7. The main text should be arranged in sequentially numbered sections. The first section should be titled "Introduction", while the last section should be titled "Conclusion" as the others should be titled and numbered with a second digit (2.1, 3.2 and so on). Using boldface is necessary to indicate headings.
8. References to personalities in the text should be entered as: Smith (1971) or (Smith, 1971); two authors: Smith and Mill (1965) or (Smith and Mill, 1965); three or more authors: Smith et al. (1974) or (Smith et al., 1974). References to papers by the same author(s) in the same year are distinguished by the letters a,b,c, etc. (e.g. Smith, 1974a). References should be listed at the end of the paper in alphabetical order.
9. Footnotes should be subsequently numbered and are to be placed at the bottom of the related page. Examples of footnote use are:
 - Books with one author:
Hormats, Robert D., "Reforming the International Monetary System; From Roosevelt to Reagan," Foreign Policy Association, New York, 1987, pp. 21-25.
 - Books with two authors:
³Hoel, P.G., Port, S.C. "Introduction to Probability Theory," Houghton Mifflin Company, US, 1971, p.241.
 - Books with three or more authors:
⁵Mendenhall, W., et al., "Statistics for Management and Economics," Sixth Edition, WPS Kent Publishing Company, Boston, 1989, p.54.
 - Articles:
⁹Harvey, Campbell R., "The World Price of Covariance Risk," The Journal of Finance, Vol.XLVI, No.1, March 1991, pp. 11-157.
 - Publications on behalf of an institution:
⁴Federal Reserve Bulletin, Washington, 1992-1993-1994.
10. Tables and Figures should be sequentially numbered with a brief informative title. They should be comprehensible without reference to the text incorporating the full text, heading and unit of measurements. Source of the information and explanatory footnotes should be provided beneath the table or figure.
11. Equations should be entered and displayed on a separate line. They should be numbered and referred to in the main text by their corresponding numbers. Development of mathematical expressions should be presented in appendices.

Associate Editors Board

Academicians

Reena AGGARWAL, Professor, Georgetown University
Asaf Savaş AKAT, Professor, Bilgi University
Coşkun Can AKTAN, Professor, Dokuz Eylül University
Erdoğan ALKİN, Professor, İstanbul Commerce University
Güler ARAS, Professor, Yıldız Technical University
Kürşat AYDOĞAN, Professor, Bilkent University
Zühtü AYTAÇ, Professor, Bilkent University
Niyazi BERK, Professor, Bahçeşehir University
Taner BERKSOY, Professor, Bahçeşehir University
Ünal BOZKURT, Professor, Bahçeşehir University
Ali COŞKUN, Assist. Professor, Boğaziçi University
Hatice DOĞUKANLI, Professor, Çukurova University
Nuran CÖMERT DOYRANGÖL, Professor, Marmara University
Robert ENGLE, Professor, NYU-Stern
Oral ERDOĞAN, Professor, Bilgi University
Cengiz EROL, Professor, İzmir University of Economics
Ümit EROL, Professor, Bahçeşehir University
İhsan ERSAN, Professor, İstanbul University
Mahir FISUNOĞLU, Professor, Çukurova University
Hüseyin GÜLEN, Assoc. Professor, Purdue University
Osman GÜRBÜZ, Professor, Marmara University
Robert JARROW, Professor, Cornell University
Reşat KAYALI, Professor, Yeditepe University
Nicholas M. KIEFER, Professor, Cornell University
Halil KIYMAZ, Professor, Rollins College
Çağlar MANAVGAT, Assoc. Professor, Bilkent University
Gülnur MURADOĞLU, Professor, Cass Business School
Emre ÖZDENÖREN, Assoc. Professor, London Business School
Veysi SEVİĞ, Ph. D., Marmara University
Nejat SEYHUN, Professor, University of Michigan
Mehmet Şükrü TEKBAŞ, Professor, İstanbul University
Alaeddin TİLEYLİOĞLU, Professor, Çankaya University
Burç ULENGİN, Professor, İstanbul Teknik University
Targan ÜNAL, Professor, Okan University
Birol YEŞİLADA, Professor, Portland State University
Neslihan YILMAZ, Assist. Professor, Boğaziçi University

Professionals

Vedat AKGİRAY, Professor
Sezai BEKGÖZ, Ph. D.
Adnan CEZAILİ
Emin ÇATANA, Ph. D.
Çetin Ali DÖNMEZ, Ph. D.
Mahfî EĞİLMEZ, Ph. D.
Bedii ENSARİ
Yakup ERGİNCAN, Assoc. Professor
Ali İhsan KARACAN, Assoc. Professor
Berra KILIÇ, Ph. D.
Atilla KÖKSAL, Ph. D.
Necle KÜÇÜKÇOLAK, Ph. D.
Kenan MORTAN, Professor
Erik SIRRI, Ph. D.
Tolga SOMUNCUOĞLU
Cahit SÖNMEZ, Ph. D.
Avşar SUNGURLU
Reha TANÖR, Ph. D.
Ünal TEKİNALP, Professor
Erhan TOPAÇ
Gökhan UGAN, Ph. D.
Meral VARIŞ KIEFER, Ph. D.
Feyzullah YETKİN, Assoc. Professor
Celali YILMAZ, Ph. D.
Reha YOLALAN, Assoc. Professor

ISE Review is a quarterly economics and finance review published by the Istanbul Stock Exchange.

Full-text articles published in the ISE Review are available at <http://www.ise.org/publications/ISEREVIEW.aspx>

The ISE Review Price and Payment Information:

Hard Copy: US\$ 7.5 per copy (Issue No. 50)

Wire transfer to T. İş Bankası Borsa Branch

Account No: 1125 4599 (US\$ account)

Please write the name of the publication and send us a copy of the receipt.

Address: İMKB (ISE) Research Department
Reşitpaşa Mah., Tuncay Artun Cad.
Emirgan 34467 Istanbul-TURKEY

Tel: +90 212 298 21 52, +90 212 298 26 88 Fax: +90 212 298 21 89

Please contact us for further information, comments and suggestions.

CONTENTS

Validity of the Triple Deficit Hypothesis in Turkey: 1	
Bounds Test Approach	
<i>Merter Akıncı, Ömer Yılmaz</i>	
Profitability Analysis of Banks An Application on the 29	
Turkish Banking Industry	
<i>Gözde Çerçi, Serkan Yılmaz Kandır, Yıldırım Beyazıt Önal</i>	
Comparison of the Performance of ISE Corporate Governance 45	
Index against Performances of Two Newly Created Indices	
<i>Hakan Güçlü</i>	

The ISE Review has been included in the “World Banking Abstracts” Index published by the Institute of European Finance (IEF) since 1997, in the Econlit (Jel on CD) Index published by the American Economic Association (AEA) since 2000, and in the TÜBİTAK-ULAKBİM Social Science Database since 2005.

VALIDITY OF THE TRIPLE DEFICIT HYPOTHESIS IN TURKEY: BOUNDS TEST APPROACH

Merter AKINCI^{*}
Ömer YILMAZ^{**}

Abstract

The current account deficits that reached the critical proportions together with the acceleration of the globalization process, have excited considerable interest among researchers and policy makers. To have a clear understanding of its role in macroeconomic outcomes, a lot of researches were made and these showed that increasing current deficits had dragged the countries into the financial crises. Therefore, due to its growing importance for all countries, the relationships among the current deficits, saving deficits and budget deficits of Turkey in the period of 1975 – 2010 were analysed through econometrical methods. Time series datas belong to the variables were tested with ADF and PP unit root tests and it was observed that the variable of the current deficit was stable in its level value and the variables of the saving deficit and budget deficit were stable in their first difference values. In order to determine the cointegration relationship between the variables, the bounds test analysis was applied and the cointegrated relations between the variables was found. The results of the analysis showed that the saving deficits an budget deficits had a positive effect on the current deficits both in short and long-run and triple deficits were valid for the Turkish economy.

Keywords: Current Account Deficits, Saving Deficits, Budget Deficits, Triple Deficits, Bounds Test Approach

Jel Classification: C22, E62, F32, H62, H72

^{*} Resrh. Assist. Merter Akıncı, Atatürk University, Faculty of Economics and Administrative Sciences, Department of Economics, Economic Growth and International Economics, Erzurum. Tel: 0536 658 42 25 Fax: 0442 236 09 49 E-mail: makinci86@gmail.com

^{**} Assoc. Prof. Dr. Ömer Yılmaz, Atatürk University, Faculty of Economics and Administrative Sciences, Department of Econometrics, Erzurum.

Tel: 0538 669 41 40 Fax: 0442 236 09 49 E-mail: omeryilmaz@atatuni.edu.tr

I. Introduction

Today, policy makers and economists report that the main determining factors ensuring stability on the short and long term macro economic indicators are the current account deficits, the budget deficits and saving deficits which is expressed in the form of saving – investment imbalance. Although these opinions are the eventual points in the world economy, it is very difficult to say that most of the countries, particularly in emerging market economies, provide a balance on the basis of the expressed indicators. In this context, the mentioned countries are trying to maintain their economic policies by taking into account exist deficits unless their sustainability feature do not get lose.

The problems of the current account deficits and the budget deficits which emerge in the developed countries and spread to the developing countries since the 1980s when the globalization movements began to gain momentum in the world economy, led to intense debates and researches over these deficits. The empirical studies and the country experiences revealed that there was a positive relationship between the two deficits and it was called “twin deficit hypothesis” in the literature. Depending on the economic structures of the countries, world conjuncture, production conditions and economic and financial relations between the countries, the size of these deficits have varied. So, in the economies integrated with the world economy, it has a great importance to search the causal relationship and its direction between the mentioned deficits (Papadogonas and Stournaras, 2006).

To know the direction of the interaction between the budget and foreign trade variables and to detect the other macroeconomic variables which take a part in the interaction, have a critical importance for the policies which will be applied to eliminate the twin deficit (Uğur and Karatay, 2009). For eliminating these two deficits, a coordination must be ensured by applying both monetary and fiscal policies together. The economic policies need to be aligned. To solve the macroeconomic problems which affect the both deficits and have a relationship with each other such as increasing inflation, unemployment, borrowing and exchange rate (Klein, 2006).

The theoretical approaches of twin deficit hypothesis were gathered around “Keynesian Approach” and “Ricardian Equivalence Hypothesis”. According to Keynesian Approach, being reduced the tax rates or being increased the public expenditures will decrease the national savings and increase the budget deficit. Together with rising interest rates because of increasing budget deficits, foreign capital will enter the country and the national currency will be overvalued. At the

end of this process that cause cheapen of imported goods in terms of national currency and become dear of exported goods in terms of foreign currency, depending on the elasticities. The volume of export will decrease, while volume of import increase and so current account deficit will occur (Froyen, 1999). Emergence of the budget deficits due to increased public expenditures or reduced tax rates and emergence of the deficit that occur in foreign trade balance depending on budget deficits is described as “twin deficit” (Parkin, 2000).

According to Ricardian Equivalence Hypothesis, the level of the public expenditures are given, if the budget deficits which resulted from decreasing in tax rates are financed by borrowing, the net effect on private sector spending will not be discussed. Because of this case, the time of collecting the tax will change and it will be shifted from the current period to the future period (Vamvoukas, 1999). So, a tax cut will not affect the level of savings. Due to the fact that the economic agents know to pay the tax burden in the future which reduced in the current period, they will increase their private savings and therefore any effects on the trade balance will not emerge (Colander, 1998). Consequently, Ricardian Equivalence Hypothesis argues that the twin deficits are invalid (Alkswani, 2000).

Following the twin deficit hypothesis, one of the most debated issues in recent years by economists were that main source of the current account deficits and the budget deficits was the insufficient domestic savings. This view which makes the emergence of twin deficits on the saving deficits, emphasized that the mentioned deficits were related to each other and a change occurring in anyone of them would affect the others (McTeer, 2008). The reason for emerging of this phenomenon known as the “triple deficit hypothesis” in the literature is that in recent years current account deficits tend to increase, while budget deficits decrease in many developed countries.

The most important prescription of rapid development for developing countries is to allocate a significant share of national income to the investments. Savings which finance the investments for development, are the internal bottleneck for these countries. Because of insufficient savings emerged by deficiency of national income, the investments can not be augmented, level of productivity remains low and low level of national income keeps going. As a result, inadequate savings can not fully finance the investments and hence the problem of the budget deficit is encountered. Foreign exchange deficit is an important external bottleneck as well as the saving deficit in the process of the

economic development. Being realized the economic development initially requires to import of capital goods. However, owing to the fact that a large proportion of foreign exchange revenues depend on the export of primary agricultural products, the level of these revenues remain far below the level required by targeted growth rate and so, this process leads to emergence of the problem of current account deficit in the economy (Zengin, 2000). In this context, to gain a sustainable dimension for not only budget deficits but also current account deficits, total savings are needed to increase. Otherwise, the mechanism which will begin to run depending on the saving deficit, will have ended with the problems of budget deficit and current account deficit (Langdana, 1990).

The theoretical foundation of the relationship among saving deficits, budget deficits and current account deficits can be written down by being used the identity of national income: (Ay et al., 2004)

$$Y = C + I + G + (X - M) = C + S + T \quad (1)$$

In the identity numbered (1) Y represents the national income; the expenditures of consumption, investment and government are showed by order of C, I and G; X denotes the export of goods and services; M connotes the import of goods and services; S implies savings and T represents the taxes. Injections to national income and leakages from national income will be equal to each other in this equation. So, the equation numbered (1) can be shown in the following way:

$$I + G + X = S + T + M \quad (2)$$

It is possible to determine the relationship among saving deficit, budget deficit and the current account deficit with the help of the obtained identity numbered (2):

$$(X - M) = (T - G) + (S - I) \quad (3)$$

In the identity numbered (3) shows that the sum of the balance of the private sector saving – investment and the balance of the public sector income – expenditure is equal to current account balance. Therefore, saving deficit that will

emerge depending on insufficient savings, by accompanying to the twin deficit composes the triple deficits (Szakolczai, 2006). In an economy, the balance of saving – investment consists of two elements. These are the balance of the public and the private saving – investment. According to the twin deficit hypothesis, due to the fact that the private sector saving – investment balance is considered as given in a certain period of time, the main reason of the budget deficit and current account deficit which emerges depending on the budget deficit is saving deficit (Sachs, 1988). Thus, if investments can not be financed by savings and if government expenditures exceed the tax revenue, namely budget deficits occur, then the current account deficit will emerge (Boucher, 1991). While the left side of the identity numbered (3) shows the external balance of an economy, the sum of the two balances in the right side of the equation represents the internal balance of it. In other words, the internal and the external balance of an economy is equal to each other and the higher internal balance runs deficit the more external balance runs deficit. This means that the deficit of the internal economic balance is being financed through the deficit of the external economic balance. The private sector saving – investment balance or public sector income – expenditure balance which is the form the basis of the internal economic balance runs deficit and if the current account balance accompanies to this, twin deficit will emerge. If both of the internal balances run deficit and the current account balance shows as much deficit as them, so the triple deficit will be exist (Eğilmez, 2006).

In this study, the annual data of the period of 1975 – 2010 in Turkish economy were taken into consideration and the interaction between the triple deficits were examined by being used the Bounds Test Approach. For this purpose, this study consists of five sections. The studies about this subject in the literature are described in the second section; the method and datas belonging to the empirical application of the study are introduced in the third section named “method and data”; findings of the application are shown in the fourth section. In the last section where a general evaluation is made, the study comes to an end.

II. Literature Summary

The studies which based upon the opinions argued that the reason of the imbalances of the current account balance in most of the countries was the budget deficit and not to be provided of the saving – investment balance, took place in the literature of economics since 1980s when the commercial and

financial globalization began to gain intensity. The analysis made by being used the cross-section, the time series and the panel datas basically tended to the twin deficit hypothesis, but in recent years the case of triple deficits in which was interested has become important, too.

The studies which tried to test the validity of the twin deficit hypothesis, revealed that increasing budget deficits cause the current account deficits. The empirical studies that were made by Darrat (1988), Bernheim (1988), Miller and Russek (1989), Zietz and Pemberton (1990), Latif-Zaman and DaCosta (1990), Biswas et al. (1992), Rosensweig and Tallman (1993), Egwaikhide (1999), Khalid and Guan (1999), Chinn and Prasad (2000), Piersanti (2000), Kulkarni and Erickson (2001), Leachman and Francis (2002), Fidrmuc (2003), Zanghieri (2004), Kouassi et al. (2004), Pattichis (2004), Corsetti and Müller (2006), Mukhtar et al. (2007), Lau and Tang (2009), Yapraklı (2010) and Altıntaş and Taban (2011) showed that the budget deficits put pressure on the current account deficits. As well as these results, it was found a limited relationship between related variables in the works which were made by Abell (1990), Kearney and Monadjemi (1990), Feldstein (1992) and Erceg et al. (2005). However, the studies that were by Dewald and Ulan (1990), Boucher (1991), Kim (1995), Anoruo and Ramchander (1998), Kaufmann et al. (2002) and Kim and Roubini (2008) pointed out that the budget deficits did not have any effects on the external balance.

The studies that tried to prove the triple deficit hypothesis which argued the basic reason of the budget deficits was the saving deficits and depending on this process the current account balance would run deficit, in general were carried out on the theoretical level than empirical level. Penati and Dooley (1984) examined the effects of the domestic and foreign savings on the composition of capital by using the cross-section analysis in the 19 industrialized countries since the Second World War. The authors who emphasized that changing in domestic savings led to the systematic fluctuation over the domestic investments, pointed out that the growing liberal movements in financial markets had an important effect on the savings, investments and current account balance. It was stressed in the study that the imbalances would emerge in the current account balance when the volume of savings changed and then the case of triple deficit was referred.

Zaidi (1985) examined the determinants of external debts of developing countries by using the time series analysis. He cited that the expansion of the investment expenditures would put pressure on the saving rates and hence increasing budget deficits would affect the external deficits adversely. Therefore,

the validity of the triple deficits for the developing countries was emphasized by the author.

Dooley et al. (1987) who analysed saving – investment imbalances and its possible consequences by using the method called Ordinary Least Squares (OLS) for developed and developing countries in the period of 1960 – 1984, noted that the imbalances of the current account balance which would occur as a result of the saving deficits should be financed by the sources like credit and donation particularly in developing countries. The authors, saying that it is needed to be increased the saving rates for being decreased the current account deficits, stated that the welfare of the world would be affected positively if the fund surpluses which would be created throughout the economy were used in the fertile areas.

Hatsopoulos et al. (1988) pointed out that the main reason of the increasing foreign trade deficits and in international markets deteriorating competitiveness power of US was the low level of savings than investments and the budget deficits which occurred as a result of insufficient savings. Besides, the authors emphasized that the volume of both domestic and foreign debt increased due to rising budget deficits and so, foreign trade balance deteriorated depending on higher borrowing. Similar views were supported by Hakkio (1995), Higgins and Klitgaard (1998), Cooper (2001), Mann (2002), Labonte (2005), Hubbard (2006) and Elwell (2008) and the authors explained that by stimulating budget deficits the saving deficits of US created the negative effects on the foreign trade balance.

By using the time series analysis, Roubini (1988) reached the results that saving deficits and budget deficits which emerged depending on the saving deficits led to increase in current account deficits in 18 OECD countries in the period of 1960 – 1985. Consequently, the validity of the case of the triple deficits was proved by the author.

Fischer and Easterly (1990) examined the macroeconomic effects of the budget deficits. They expressed that insufficient domestic savings, namely saving deficits, were the main factor for budget deficits. They also argued that budget deficits which emerged depending on the saving – investment imbalances led to inflation by increasing the volume of emission and thus balance of payments was affected adversely owing to deteriorating external competitiveness power.

Baxter and Crucini (1993) who examined the relation of correlation between national saving – investment and its possible effects for eight developed

countries in the period of 1960:1 – 1985:4, pointed out that the correlation of saving – investment was higher in developed countries than in small countries and increasing in the volume of the investments in developed countries would cause to raise in the current account deficits. In this context, the authors showed the effects of the saving deficits which were the third deficit as well as the twin deficit over the economy.

Eisner (1994), using the analysis of Vector Autoregressive (VAR) in his study, examined the US economy in the period of 1972 – 1991. He reported that public savings would increase by reason of decreasing in the public expenditures and thereby budget deficits would reduce. The author who argued that the reason of declining in exchange rates and the cause of current account deficits was the budget deficits which occurred by increased public expenditures, reached the results which affirmed the case of triple deficit.

Milesi-Ferretti and Razin (1996) who tried to determine the macroeconomic factors for current account deficits to gain a sustainable dimension, said that the current account deficits which ongoing for several years and reach the 5 percent of GDP would be unsustainable and they told that by increasing the debt – service ratio low level of savings caused the current account deficits.

Gale and Orszag (2003) examined the economic effects of the budget deficits. They stressed that there was a bilateral interaction between the budget deficits and the savings. They also pointed out that the budget deficits would reduce the national savings and thus the level of the national income in the future period. Nonetheless, it was showed that rising budget deficits would increase the perception of upswinging in the level of the expected budget deficits in the future. The authors asserted that the budget deficits which emerged by reason of the saving deficit, would be financed by the foreign capital. At the end of this process, the interest rates would rise and negative effects on the foreign trade balance would emerge.

Freund (2005) analysed the needed factors for the current account deficits to gain a sustainable dimension over the 25 industrialized countries in the period of 1970 – 1997. It was also showed that reversal effects on the current account deficits would occur if the saving rates increased due to reducing investment expenditures.

Kuijs (2006), using the time series analysis in his work, examined the changes in the saving – investment balance on the Chinese economy in the period of 1980 – 2005. In his empirical study, he found that raising saving rates gave rise to the budget surplus and the current account surplus depending on the

budget surplus. Accordingly, this study which was made for the Chinese economy showed that the triple deficits hypothesis ran through the reverse mechanism and this process was called “triple surplus”.

Gruber and Kamin (2007), taking into account 61 countries in the period of 1982 – 2003, by using the panel data analysis tried to determine the determinants of the current account deficits. The authors expressed that the economies which suffered from the saving deficit were negatively affected due to increasing volume of savings on the global scale and consequently the current account deficits of them would expand. In this context, the validity of the triple deficit hypothesis was pointed out by the results.

In his study, Feldstein (2008) mentioned the deficiency of savings in the US economy and he emphasized that the demand of the imported goods would reduce depending on decreasing in the public expenditures. In addition, the author asserted that an increase in the national savings would decrease both the volume of economic activity and the rates of employment. However, the opinion of being eliminated the current account imbalances was pointed out by the author.

In the literature, there are studies which find both the limited relationship and no causal link among the saving deficit, the budget deficit and the current account deficit, as well as the studies which show the validity of triple deficit hypothesis. Bachman (1992), using the VAR analysis for the US in the period of 1974 – 1988, claimed that the budget deficits were the effective on the current account deficits, but the explanatory power of the changing in the volume of investment on the current account deficits was the insufficient. The author pointed out that an obvious result could not be reached about the triple deficits, although the twin deficit hypothesis was valid in the period of 1974 – 1988.

Winner (1993) examined the relationship between the budget deficits and the current account deficits through the analysis of regression in Australia and found the validity of Ricardian Equivalence Hypothesis for this economy. So, the author emphasized that the budget deficits were affected by the other macroeconomic factors, and hence it was difficult to say that the current account deficits emerged due to budget and saving deficits. In this context, according to him, the triple deficits were not valid.

Domenech et al. (2000) analysed the 18 OECD countries by applying the structural VAR method in the period of 1962 – 1994. They noted that the reason of the budget deficit was not the saving deficits, and the Ricardian Equivalence

Hypothesis in the countries they examined was valid contrary to conventional approach. They arrived at a conclusion that the triple deficits were not valid in the 18 countries and the sources of the current account deficits should be analysed by being taken into account different variables.

Süreççi (2011) ascertained the validity of the triple deficit hypothesis by applying the VAR analysis with the quarters of annual data belonging to the period of 1987:1 – 2007:3 in Turkey. The study findings supported the existence of the relationship between public deficits and current account deficits. However, the causality relationship among the investment – saving rate and the current account deficit was not found. As a result, although the author proved the validity of twin deficits in Turkey, the existence of the triple deficits were not found.

III. Method and Data

In this study, in order to examine the effects of the saving deficit and budget deficit on the current account deficit the Bounds Test Analysis (ARDL) is applied. To estimate the relations between the variables in Turkey, annual time series belonging to the period of 1975 – 2010 are taken into account. The main reason for being taken into account of this period, to investigate the process of the current account deficits which have tended to increase especially in these years, in the period of being initiated the liberal economy policies. The datas are taken from the official websites of State Planning Organization (SPO), Turkish Statistical Institute (TSI) and International Monetary Fund (IMF). While the dependent variable of this model is the current account deficits as a percentage of GDP, the independent variables of the model are the ratio of the saving deficits and the budget deficits to GDP.

In the study, in order to investigate the effects of the saving deficits and the budget deficits on the current account deficits, the following equation is used:

$$CA_t = \alpha_0 + \alpha_1 TA_t + \alpha_2 BA_t + e_t \quad (4)$$

Where, CA represents the current account deficits, TA denotes the saving deficits, BA connotes the budget deficits and e shows the error term.

In order to obtain the robust results in the time series analysis, it is important to determine whether the datas have the some features or not. So, the datas need to be stationary in the time series analysis. As Granger and Newbold

(1974) noted, a model which is estimated through the non-stationary datas may be lead to the spurious regressions that can be described as non-relations seem as if they were. Hence, to determine whether or not the variables used in model are stationary and to find their stagnancy level if they are stationary, the Augmented Dickey – Fuller (ADF) unit root test developed by Dickey – Fuller (1979, 1981) and Phillips – Perron (PP) unit root test developed by Phillips – Perron (1988) are applied. Thanks to unit root tests, both the problem of spurious regression will be eliminated and the results of analysis will be reliable (MacKinnon, 1991). The process of the ADF and PP unit root tests is shown in the following equation numbered (5):

$$\Delta Y_t = \alpha + \gamma Trend + \rho Y_{t-1} + \sum_{i=1}^k \delta_i \Delta Y_{t-i} + \varepsilon_t \quad (5)$$

In the regression equation numbered (5), Y represents the variable which is subject to the unit root test, Δ shows the first order difference operator, γ denotes the linear time trend, ε implies the error term and k represents the lag length of the dependent variable (Taban, 2008). ADF and PP unit root test analysis whether or not ρ is equal to zero. If the H_0 hypothesis which represents the case of $\rho = 0$, can able to be refused the variable Y is decided to be stationary in its original level. Otherwise, it is decided that the variable Y is not stationary (Yamak and Küçükkale, 1997). To ensure the stagnant of the series which are not the stationary, it is needed to use their difference. So, the estimation process of the equation numbered (5) is repeated for the first difference of the series and the series are called the integrated in first difference (Kennedy, 2006). The process expressed above is repeated untill the series are found stationary. However, to avoid the misleading results, it is needed to determine that the variables are not the stationary in the level of I(2). If the variables are stationary in the level of I(2), the F-statistic which was computed by Pesaran et al. (2001) will be invalid. Because the bounds test approach ise based on the supposition that the variables are I(0) and I(1) (Fosu and Magnus, 2006). The t-statistic that is computed for the $\rho = 0$ in the equation numbered (5), is compared with the critical values which were developed by MacKinnon (1991) and the variables are determined whether they are stationary or not. If the absolute value of computed t-statistic is less than various MacKinnon critical values, the series is not stationary. Otherwise, if the absolute value of computed

t-statistic is higher than various MacKinnon critical values, the series is stationary (Tari, 2005).

Thanks to bounds test approach which is based on the Wald or F-statistic and developed by Pesaran et al. (2001), it is possible to test whether there is the cointegration relationship between the variables regardless the integration level of series (Yapraklı, 2010). So, the bounds test approach that was developed by Pesaran et al. (2001) has an important advantage comparatively the cointegration analysis which were introduced by Engle and Granger (1987), Johansen (1988) and Johansen and Juselius (1990) because it both disregards the integration level of the variables and it can be applied in the studies which have a small number of samples (Başar et al., 2009; Narayan and Narayan, 2004; Şimşek and Kadılar, 2005).

The bounds test approach is based on the estimation of OLS estimator and unrestricted error correction model. The cointegration relationship in the regression equation numbered (4) is determined by being applied bounds test to the unrestricted error correction model. This model is shown below:

$$\Delta CA_t = \alpha_0 + \sum_{i=1}^m \alpha_{1i} \Delta CA_{t-i} + \sum_{i=0}^m \alpha_{2i} \Delta TA_{t-i} + \sum_{i=0}^m \alpha_{3i} \Delta BA_{t-i} + \alpha_4 CA_{t-1} + \alpha_5 TA_{t-1} + \alpha_6 BA_{t-1} + e_t \quad (6)$$

Initially, the model numbered (6) is estimated by being applied the OLS analysis and the lag length which is shown as “m” is determined. To determine the lag length the information criterions such as AIC, SBC, FPE and HQ, are taken into account and the lag length which has the minimum critical value is chosen as the optimal lag length value for the model. To obtain the robust results from the F-test, there should not be autocorrelation in the error terms. Due to the fact that there is the lagged value of ΔCA which represents the dependent variable in the model, the Breusch – Godfrey test is going to be applied for the estimation of autocorrelation.

After that, the null hypothesis stating that no long term relationship is tested by being applied the zero constraint to the coefficients of the lagged variables CA_{t-1} , TA_{t-1} and BA_{t-1} in the model numbered (6). The level values of the variables' coefficients are analysed with the help of F-test, taking into account the $(H_0 : \alpha_4 = \alpha_5 = \alpha_6 = 0)$ hypothesis. The value of the computed F-statistic is compared with the lower and the upper critical values which were introduced in the study of Pesaran et al. (2001). If the value of the computed F-statistic is

higher than the upper critical value, it is decided that there is a cointegration relationship between the series. Otherwise, if the value of the computed F-statistic is less than the lower critical value, it is possible to say that there is not a cointegration relationship between the series. If the value of the computed F-statistic takes place between the lower and the upper critical values, a clear comment on the cointegration can not be made (Taban, 2008).

With the help of the bounds test analysis, long and short term coefficients can able to be estimated. The long term coefficients are obtained as follows: The sum of the lagged values of the coefficients of the independent variables which are multiplied by the negative mark is divided to the value that is obtained by being subtracted 1 from the sum of the coefficient of the dependent variable (Bardsen, 1989; Yapraklı, 2010; Şimşek ve Kadılar, 2005). The ARDL model that is used for the estimating of the long term relationship between the variables is shown below:

$$CA_t = \alpha_0 + \sum_{i=1}^m \alpha_{1i} CA_{t-i} + \sum_{i=0}^m \alpha_{2i} TA_{t-i} + \sum_{i=0}^m \alpha_{3i} BA_{t-i} + e_t \quad (7)$$

The coefficients of the current period lags of the independent variables represent the short term coefficient (Yapraklı, 2010). In this context, the short term relationship between the variables is investigated with the help of the error correction model based on the ARDL approach. The model which forms basis of the short term relationship is shown below:

$$\Delta CA_t = \alpha_0 + \alpha_1 EC_{t-1} + \sum_{i=1}^m \alpha_{2i} \Delta CA_{t-i} + \sum_{i=0}^m \alpha_{3i} \Delta TA_{t-i} + \sum_{i=0}^m \alpha_{4i} \Delta BA_{t-i} + e_t \quad (8)$$

The variable EC_{t-1} in the model numbered (8) represents the one period lagged value of the error terms series which is obtained from long term relationship.

To determine the optimum lag lengths in the ARDL model AIC was used and AIC was computed for each lag length based on the maximum lag length criteria whose value was considered as 5. The method specified by Kamas and Joyce (1993), was applied for determining the lag lengths. Accordingly, first of all, the regression analysis for the dependent variable was carried out by being taken into account only its own lagged values and the lag length which had a minimum AIC value was chosen. Then, the chosen optimum lag length for

dependent variable was kept constant and by being carried out regression with all lags belonging to the first independent variable, the minimum AIC value was selected as the optimum lag length for the first independent variable. The same process was conducted for the other variables.

IV. Empirical Results

It is highly possible that the datas of the time series in the studies are not stationary. The possibility of emerging the spurious regression in the model which consists of the non-stationary datas is high. Therefore, the estimation results may show the spurious relation, too. If the series are determined that they are not the stationary in their level values, the series can be made stationary by being used their difference values. So, the problem of spurious regression is eliminated and it is possible to obtain the robust results (MacKinnon, 1991).

ADF and PP unit root tests are used for determining whether the time series are stationary or not in the model. While the process of unit root tests is operated, it is firstly analysed for the trend and intercept. If the stationary is obtained, the values are predicated on trend and intercept. So, the process of trend and non-trend are ignored (Enders, 1995).

Table 1 shows the results of the unit root tests. According to the ADF and PP unit root tests, while the variable *CA* is stationary for 10% significant level in its level value, the variables *TA* and *BA* are stationary for 1% significant level in their first difference level.

Table 1: The ADF and PP Unit Test Results of the Variables *

Variable		ADF Test		PP Test	
		Level	First Difference	Level	Level
CA		-3.453(0) ^(c)	-----	-3.595(4) ^(b)	-----
TA		-2.017(0)	-5.438(0) ^(a)	-2.202(2)	-5.438(0) ^(a)
BA		-2.298(0)	-6.545(0) ^(a)	-2.355(2)	-6.550(2) ^(a)
Critical Values	a=%1	-4.243	-2.634	-4.243	-2.634
	b=%5	-3.544	-1.951	-3.544	-1.951
	c=%10	-3.204	-1.610	-3.204	-1.610

In the ADF test, the values in parentheses show the optimum lag lengths based on the AIC. In the PP test, the values in parentheses show the Bandwith values and these values are the optimum lag lengths which are determined based on Newey-West criteria.

Because the variables are stationary in the different levels as a results of the ADF and PP unit root tests, Engle – Granger and Johansen cointegration tests do not provide the reliable results. Therefore, the bounds test approach which was developed by Pesaran et al. (2001) and which does not take into account the stationary level of the variables, was applied in the study. In this analysis, initially the lag lengths are needed to be determine. Due to the fact that the annual data set was used in the study, the maximum lag length was selected as 5 and AIC values were computed for each length. In order to obtain robust results, the autocorrelation should not take place in the error terms. So, the Breusch – Godfrey autocorrelation test was applied to determine whether the autocorrelation took place in the error terms. Table 2 shows the computed AIC values for determination of the optimum lag lengths and the results of the autocorrelation test.

Table 2: The Determination of the Lag Lengths *

Number of the Lags (m)	AIC	Breusch-Godfrey Autocorrelation Test
1	4.246	0.006 ^(a)
2	4.130	0.017 ^(b)
3	4.316	0.161
4	4.389	0.011 ^(b)
5	4.308	0.527

* ^(a) and ^(b) represent respectively the existence of the autocorrelation in the error terms for 1% and 5% significant levels.

In Table 2, although 1 and 2 lag lengths have the lowest AIC values, the autocorrelation has been found in these lag lengths. So, the lag length which as a smaller AIC value than 1 and 2 lag lengths and which does not have the autocorrelation in the error term must be chosen. In this context, the optimum lag length is said to be 5, because in the 5 lag length AIC value is the lowest and the autocorrelation has not been found.

After determining the optimum lag lengths, the cointegration relationship between the series was tested with the help of the bounds test approach. Table 3 shows the results of the bounds test analysis.

Table 3: The Results of the Bounds Test Analysis

k*	F - Statistic	%1 Critical Values		%5 Critical Values	
		Lower Bound	Upper Bound	Lower Bound	Lower Bound
2	5.47	5.15	6.36	3.79	4.85

* k represents the number of independent variables in the regression equation numbered (6).

Critical values were obtained from the Table CI(iii) which took part in the study made by Pesaran et al. (2001).

Table 3 shows the computed F-statistic which acquired from the regression equation numbered (6) was estimated with 5 lags and the critical values obtained from Pesaran et al. (2001). These critical values are valid for the two independent variables and the 5% significant level. It is possible to say that there is a cointegration relationship between the variables because the computed F-statistic (5.47) is higher than the upper critical level (4.85) for the 5% significant level. Hence, ARDL model can be used in order to determine the long and short term relationship between the series.

To investigate the long term relationship between the variables used in the model, the optimum lag lengths in the ARDL model numbered (7) were determined with the help of AIC. At the end of this analysis which the maximum lag length was considered as 5, ARDL (1, 4, 2) model was decided to be estimated. Table 4 shows the estimation results of ARDL (1, 4, 2) model and the computed long term coefficients by being taken into account the results.

Table 4: The Results of ARDL (1, 4, 2) Model and Computed Long Term Coefficients

Variable	Coefficient	t-Statistic (p Value)	Variable	Coefficient	t-Statistic (p Value)
C	-1.979	-2.511 (0.019)	TA(-3)	0.278	1.192 (0.245)
CA(-1)	0.219	1.127 (0.271)	TA(-4)	0.283	1.405 (0.173)
TA	0.110	0.386 (0.702)	BA	0.485	1.795 (0.086)
TA(-1)	0.594	1.750 (0.094)	BA(-1)	-0.310	-1.656 (0.098)
TA(-2)	-0.363	-1.173 (0.253)	BA(-2)	-0.088	-0.313 (0.756)
$R^2 = 0.609$ $F(p) = 3.815 (0.004)$ $\chi^2_{BG} = 6.195 (0.185)$ $\overline{R^2} = 0.449$ $DW = 2.086$ $\chi^2_{WHITE}(4) = 22.749 (0.200)$					
Long Term Equation Computed Based on ARDL					
Variable	Coefficient	t-Statistic	Note: ^(a) and ^(c) represent respectively that the variables are significant for 1% and 10% significant levels.		
TA	1.154	2.898 ^(a)			
BA	0.111	1.968 ^(c)			
C	-2.533	-1.614			

The results of the long term equation in Table 4 point out that there is a positive and non-significant relationship between the current account deficits and one period lagged value of current account deficits. In this context, it can be said that the previous values of the current account balance are not taken into account for estimating its next period values. Furthermore, there is a positive and significant relationship between the one period lagged value of saving deficits and current account deficits; there is a positive and significant relationship between the level value of the budget deficits and the current account deficits; and finally there is a negative and significant relationship between the one period lagged value of budget deficits and the current account deficits. These results refer that the case of current account deficits mainly arise from the structural problems of the economy and expectations about the external imbalances depend

on both previous period values of the saving deficits and current period values of the budget deficits. Nonetheless, it is seen that one unit increase in the volume of the saving deficits raises the volume of the current account deficits by 1.154 units, and one unit increase in the volume of the budget deficits raises the volume of the current account deficits by 0.111 unit in Turkey. So, it can be said for the Turkish economy that the saving deficits and the budget deficits are the most important factors which trigger the current account deficits in the period of 1975 – 2010 and it is obvious that the case of triple deficits exist in the concerned period.

The short term relationship between the variables was investigated by being taken into account the error correction model based on ARDL approach numbered (8). Maximum lag length was selected as 5 and ARDL (1, 4, 4) model was considered appropriate to examine the short term relationship. The results of this model are shown in Table 5.

Table 5: The Results of the Error Correction Model Based on ARDL (1, 4, 4) Approach

Variable	Coefficient	t-Statistic (p Value)	Variable	Coefficient	t-Statistic (p Value)
C	0.025	0.086 (0.932)	ΔBA	0.384	1.768 (0.091)
$\Delta CA(-1)$	-0.016	-0.059 (0.953)	$\Delta BA(-1)$	-0.283	-1.695 (0.097)
ΔTA	0.022	0.086 (0.932)	$\Delta BA(-2)$	0.036	0.142 (0.887)
$\Delta TA(-1)$	0.565	1.798 (0.088)	$\Delta BA(-3)$	-0.054	-0.196 (0.846)
$\Delta TA(-2)$	-0.501	-1.772 (0.093)	$\Delta BA(-4)$	0.182	0.639 (0.530)
$\Delta TA(-3)$	0.266	0.923 (0.368)	$EC(-1)$	-0.941	-2.185 (0.042)
$\Delta TA(-4)$	0.052	0.170 (0.866)			

The results of the error correction model in Table 5 show that there is a negative and non-significant relationship between the one period lagged value of current account deficits and the current account deficits. Thus, it can be said that the previous period values of the current account balance are not taken into

account for estimating its next period values. Furthermore, there is a positive and significant relationship between the one period lagged value of the saving deficits and the current account deficits; there is a negative and significant relationship between the two period lagged value of the saving deficits and the current account deficits; there is a positive and significant relationship between the level value of the budget deficits and the current account deficits; and finally there is a negative and significant relationship between the one period lagged value of the budget deficits and the current account deficits. In this respect, it can be said that the results of the error correction model in Table 5 are parallel with the estimation results in Table 4. Accordingly, it is possible to emphasize that in the short term the saving deficits and the budget deficits cause the current account deficits. Moreover, in Table 5 the coefficient of the error correction variable is negative and significant which is conformable to expectations. The error correction term points out that approximately 94% of imbalances in the short term will be overcome in the long term.

V. Conclusion

In the study, the effects of the saving deficits and the budget deficits on the current account deficits were investigated with the help of bounds test approach by being used annual time series in the period of 1975 – 2010 in Turkey.

The unit root tests showed that the variable current account deficit is stationary in its level value, while the variables saving deficits and budget deficits are stationary in their first difference levels. Because the variables are stationary in their first difference levels, the relationship among the variables was researched with the help of bounds test approach developed by Pesaran et al. (2001). The results of the analysis showed that the current account deficits were affected as positive and significant by the saving deficits and the budget deficits. On the other hand, it came to the conclusion that the obtained findings from the analysis for the long term were valid for the short term, too. So, it is possible to say that the short and the long term relations are parallel with each other. Also, the error correction model pointed out that approximately 94% of imbalances in the short term would be overcome in the long term.

The results of the study brought out that the saving deficits and the budget deficits were the basic factors which affected the current account deficits and these variables had a positive impact on the current account deficits both in the short and in the long term. It arrived at a conclusion that the triple deficits were

valid for the Turkish economy in the period of 1975 – 2010. So, it is possible to say that in order to reduce the current account deficits in Turkey monetary and fiscal policies must be used as coordinated and these policies should be conducted in parallel with an economic program based on inflation targetting. Being loosened the overvalued exchange rate policy for ensuring the internal and the external balance and being reduced the government expenditures for keeping fiscal discipline will create a positive impact in this process. Additionally, being put into force promptly the economic decisions which are taken for increasing the public savings will contribute to the targeted purpose. On the other hand, the policies which reduce both the dependence of export to import and the dependence of investments to import should be implemented for easing the adverse effects of the concerned deficits. As a result of attracting the foreign savings, sensitive to the politic and economic stability, into the country, the economy will able to move from the triple deficits to twin deficits and in conjunction with providing the fiscal balance, this process will tend to the economic balance with single-deficit. In this context, it is possible to say that these economy policies have both direct and indirect effects to eliminate the current account deficit problem.

References

- Abell, J. D., “*Twin Deficits During the 1980s: An Empirical Investigation*”, Journal of Macroeconomics, Vol: 12, No: 1, 1990, ss. 81-96.
- Alkswani, M. A., “*The Twin Deficits Phenomenon in Petroleum Economy: Evidence from Saudi Arabia*”, 2000, ss. 1-25, <http://www.mafhoum.com/press2/79E15.pdf>, (Eriřim Tarihi: 22.09.2011)
- Altıntař, H.; S. Taban, “*Twin Deficit Problem and Feldstein-Horioka Hypothesis in Turkey: ARDL Bound Testing Approach and Investigation of Causality*”, International Research Journal of Finance and Economics, Vol: 74, 2011, ss. 30-45.
- Anoruo, E.; S. Ramchander, “*Current Account and Fiscal Deficits: Evidence from Five Developing Economies of Asia*”, Journal of Asian Economics, Vol: 9, No: 3, 1998, ss. 487-501.
- Ay, A.; Z. Karaçor; M. Mucuk; S. Erdoğan, “*Bütçe Açığı-Cari İşlemler Açığı Arasındaki İliřki: Türkiye Örneęi (1992-2003)*”, Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, Sayı: 12, 2004, ss. 75-82.
- Bachman, D. D., “*Why Is the U.S. Current Account Deficit so Large? Evidence from Vector Autoregressions*”, Southern Economic Journal, Vol: 59, No: 2, 1992, ss. 232-240.
- Bardsen, G., “*Estimation of Long Run Coefficients in Error Correction Models*”, Oxford Bulletin of Economics & Statistics, Vol: 51, No: 3, 1989, ss. 345-350.
- Başar, S.; H. Aksu; M. S. Temurlenk; Ö. Polat, “*Türkiye’de Kamu Harcamaları ve Büyüme İliřkisi: Sınır Testi Yaklaşımı*”, Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, Cilt: 13, Sayı: 1, 2009, ss. 301-314.
- Baxter, M.; M. J. Crucini, “*Explaining Saving-Investment Correlations*”, The American Economic Review, Vol: 83, No: 3, 1993, ss. 416-436.
- Bernheim, B. D., “*Budget Deficits and the Balance of Trade*”, NBER Working Paper, No: 10935, 1988, ss. 1-32.
- Biswas, B.; G. Tribedy; P. Saunders, “*Further Analysis of the Twin Deficits*”, Contemporary Economic Policy, Vol: 10, No: 1, 1992, ss. 104-107.

- Boucher, J. L., “*The U.S. Current Account: A Long and Short Run Empirical Perspective*”, Southern Economic Journal, Vol: 58, No: 1, 1991, ss. 93-111.
- Chinn, M. D.; E. S. Prasad, “*Medium-Term Determinants of Current Accounts in Industrial and Developing Countries: An Empirical Exploration*”, NBER Working Paper, No: 7581, 2000, ss. 1-42.
- Colander, D. C., Macroeconomics, Third Edition, Irwin/McGraw-Hill, Boston 1998.
- Cooper, R. N., “*Is the U.S. Current Account Deficit Sustainable? Will It Be Sustained?*”, Brookings Papers on Economic Activity, Vol: 2001, No: 1, 2001, ss. 217-226.
- Corsetti, G.; G. J. Müller, “*Twin Deficits: Squaring Theory, Evidence and Common Sense*”, Economic Policy, Vol: 21, No: 48, ss. 597-638.
- Darrat, A. F., “*Have Large Budget Deficits Caused Rising Trade Deficits?*”, Southern Economic Journal, Vol: 54, No: 4, 1988, ss. 879-887.
- Dewald, W. G.; M. Ulan, “*The Twin-Deficit Illusion*”, Cato Journal, Vol: 9, No: 3, 1990, ss. 689-707.
- Dickey, D. A.; W. A. Fuller, “*Distribution of the Estimators for Autoregressive Time Series With a Unit Root*”, Journal of the American Statistical Association, Vol: 74, No: 366, 1979, ss. 427-431.
- Dickey, D. A.; W. A. Fuller, “*Likelihood Ratio Statistics for Autoregressive Time Series With a Unit Root*”, Econometrica, Vol: 49, No: 4, 1981, ss. 1057-1072.
- Domenech, R.; D. Taguas; J. Varela, “*The Effects of Budget Deficit on National Saving in the OECD*”, Economics Letters, Vol: 69, 2000, ss. 377-383.
- Dooley, M.; J. Frankel; D. J. Mathieson, “*International Capital Mobility: What Do Saving-Investment Correlations Tell Us?*”, IMF Staff Papers, Vol: 34, No: 3, 1987, ss. 503-530.
- Egwaikhide, F. O., “*Effects of Budget Deficit on Trade Balance in Nigeria: A Simulation Exercise*”, African Development Review, Vol: 11, No: 2, 1999, ss. 265-289.
- Eğilmez, M., “*Üçüz Açık*”, Radikal, 30.05.2006, <http://www.radikal.com.tr/haber.php?haberno=188787>, (Date of access: 20.09.2011)
- Eisner, R., “*National Saving and Budget Deficits*”, The Review of Economics and Statistics, Vol: 76, No: 1, 1994, ss. 181-186.

- Elwell, C. K., "*The U.S. Trade Deficit: Causes, Consequences and Cures*", CRS Report for Congress, 2008, ss. 1-26.
- Enders, W., *Applied Econometric Time Series*, John Wiley & Sons, New York 1995.
- Erceg, C. J.; L. Guerrieri; C. Gust, "*Expansionary Fiscal Shocks and the Trade Deficit*", International Finance Discussion Papers, No: 825, 2005, ss. 1-43.
- Feldstein, M., "*The Budget and Trade Deficits Aren't Really Twins*", NBER Working Paper, No: 3966, 1992, ss. 1-11.
- Feldstein, M., "*Resolving the Global Imbalance: The Dollar and the U.S. Saving Rate*", Journal of Economic Perspectives, Vol: 22, No: 3, 2008, ss. 113-125.
- Fidrmuc, J., "*The Feldstein-Horioka Puzzle and Twin Deficits in Selected Countries*", Economics of Planning, Vol: 36, 2003, ss. 135-152.
- Fischer, S.; W. Easterly, "*The Economics of the Government Budget Constraint*", The World Bank Research Observer, Vol: 5, No: 2, 1990, ss. 127-142.
- Fosu, O. A. E.; F. J. Magnus, "*Bounds Testing Approach to Cointegration: An Examination of Foreign Direct Investment Trade and Growth Relationship*", American Journal of Applied Sciences, Vol: 3, No: 11, 2006, ss. 2079-2085.
- Freund, C., "*Current Account Adjustment in Industrial Countries*", Journal of International Money and Finance, Vol: 24, 2005, ss. 1278-1298.
- Froyen, R. T., *Macroeconomics: Theories and Policies*, Sixth Edition, Prentice Hall Inc., New Jersey 1999.
- Gale, W. G.; P. R. Orszag, "*Economic Effects of Sustained Budget Deficits*", National Tax Journal, Vol: 56, No: 3, 2003, ss. 463-485.
- Granger, C. W. J.; P. Newbold, "*Spurious Regressions in Econometrics*", Journal of Econometrics, Vol: 12, No: 2, 1974, ss. 111-120.
- Gruber, J. W.; S. B. Kamin, "*Explaining the Global Pattern of Current Account Imbalances*", Journal of International Money and Finance, Vol: 26, No: 4, 2007, ss. 500-522.
- Hakkio, C. S., "*The U.S. Current Account: The Other Deficit*", Economic Review, Vol: 80, No: 3, 1995, ss. 11-24.

- Hatsopoulos, G. N.; P. R. Krugman; L. H. Summers, “*U.S. Competitiveness: Beyond the Trade Deficit*”, *Science*, Vol: 241, No: 4863, 1988, ss. 299-307.
- Higgins, M.; T. Klitgaard, “*Viewing the Current Account Deficit as a Capital Inflow*”, *Current Issues in Economics and Finance*, Vol: 4, No: 13, 1998, ss. 1-6.
- Hubbard, R. G., “*The U.S. Current Account Deficit and Public Policy*”, *Journal of Policy Modeling*, Vol: 28, 2006, ss. 665-671.
- Kamas, L.; J. P. Joyce, “*Money, Income and Prices Under Fixed Exchange Rates: Evidence from Causality Tests and VARs*”, *Journal of Macroeconomics*, Vol: 15, No: 4, 1993, ss. 747-768.
- Kaufmann, S.; G. Winckler; J. Scharler, “*The Austrian Current Account Deficit: Driven by Twin Deficits or by Intertemporal Expenditure Allocation?*”, *Empirical Economics*, Vol: 27, No: 3, 2002, ss. 529-542.
- Kearney, C.; M. Monadjemi, “*Fiscal Policy and Current Account Performance: International Evidence on the Twin Deficits*”, *Journal of Macroeconomics*, Vol: 12, No: 2, 1990, ss. 197-219.
- Kennedy, P., *Ekonometri Kılavuzu*, 5. Baskı, Çev: Muzaffer Sarımeşeli ve Şenay Açıkgöz, Gazi Kitabevi, Ankara 2006.
- Khalid, A. M.; T. W. Guan, “*Causality Tests of Budget and Current Account Deficits: Cross-Country Comparisons*”, *Empirical Economics*, Vol: 24, No: 3, 1999, ss. 389-402.
- Kim, Ki-Ho, “*On the Long-Run Determinants of the U.S. Trade Balance: A Comment*”, *Journal of Post Keynesian Economics*, Vol: 17, No: 3, 1995, ss. 447-455.
- Kim, S.; N. Roubini, “*Twin Deficit or Twin Divergence? Fiscal Policy, Current Account and Real Exchange Rate in the U.S.*”, *Journal of International Economics*, Vol: 74, No: 2, 2008, ss. 362-383.
- Klein, L. R., “*Issues Posed by Chronic US Deficits*”, *Journal of Policy Modeling*, Vol: 28, No: 6, 2006, ss. 673-677.
- Kouassi, E.; M. Mougoue; K. O. Kymn, “*Causality Tests of the Relationship Between the Twin Deficits*”, *Empirical Economics*, Vol: 29, No: 3, 2004, ss. 503-525.
- Kuijs, L., “*How Will China’s Saving-Investment Balance Evolve?*”, *World Bank Policy Research Working Paper*, No: 3958, 2006, ss. 1-32.

- Kulkarni, K. G.; E. L. Erickson, "*Twin Deficit Revisited: Evidence from India, Pakistan and Mexico*", Journal of Applied Business Research, Vol: 17, No: 2, 2001, ss. 97-104.
- Labonte, M., "*Is the U.S. Trade Deficit Caused by a Global Saving Glut?*", CRS Report for Congress, 2005, ss. 1-14.
- Langdana, F. K., Sustaining Budget Deficits in Open Economies, Routledge, London 1990.
- Latif-Zaman, N.; M. N. DaCosta, "*The Budget Deficit and the Trade Deficit: Insights into This Relationship*", Eastern Economic Journal, Vol: 16, No: 4, 1990, ss. 349-354.
- Lau, E.; T. C. Tang, "*Twin Deficits in Cambodia: Are There Reasons for Concern?: An Empirical Study*", Monash University Working Paper, No: 11/09, 2009, ss. 1-15.
- Leachman, L. L.; B. Francis, "*Twin Deficits: Apparition or Reality?*", Applied Economics, Vol: 34, No: 9, 2002, ss. 1121-1132.
- MacKinnon, J. G., "*Critical Values for Cointegration Tests*", R. F. Engle ve C.W.J. Granger (Ed.), Long-Run Economic Relationship: Readings in Cointegration, (ss. 267-276), Oxford University Press, New York 1991.
- Mann, C. L., "*Perspectives on the U.S. Current Account Deficit and Sustainability*", Journal of Economic Perspectives, Vol: 16, No: 3, 2002, ss. 131-152.
- McTeer, B., "*Our Triple Deficits*", National Center for Policy Analysis, No: 613, 2008, ss. 1-2.
- Milesi-Ferretti, G. M.; A. Razin, "*Sustainability of Persistent Current Account Deficits*", NBER Working Paper, No: 5467, 1996, ss. 1-24.
- Miller, S. M.; F. S. Russek, "*Are the Twin Deficits Really Related?*", Contemporary Economic Policy, Vol: 7, No: 4, 1989, ss. 91-115.
- Mukhtar, T.; M. Zakaria; M. Ahmed, "*An Empirical Investigation for the Twin Deficits Hypothesis in Pakistan*", Journal of Economic Cooperation, Vol: 28, No: 4, 2007, ss. 63-80.
- Narayan, S.; P. K. Narayan, "*Determinants of Demand for Fiji's Exports: An Empirical Investigation*", The Developing Economies, Vol: 42, No: 1, 2004, ss. 95-112.

- Papadogonas, T.; Y. Stournaras, “*Twin Deficits and Financial Integration in EU Member-States*”, Journal of Policy Modeling, Vol: 28, No: 5, 2006, ss. 595-602.
- Pattichis, C., “*Budget and Trade Deficits in Lebanon*”, Applied Economics Letters, Vol: 11, No: 2, 2004, ss. 105-108.
- Parkin, M., Economics, Fifth Edition, Addison-Wesley Publishing, USA 2000.
- Penati, A.; M. Dooley, “*Current Account Imbalances and Capital Formation in Industrial Countries, 1949-1981*”, IMF Staff Papers, Vol: 31, No: 1, 1984, ss. 1-24.
- Pesaran, H. H.; Y. Shin; R. J. Smith, “*Bounds Testing Approaches to the Analysis of Level Relationships*”, Journal of Applied Econometrics, Vol: 16, No: 3, 2001, ss. 289-326.
- Phillips, P. C. B.; P. Perron, “*Testing for a Unit Root in Time Series Regression*”, Biometrika, Vol: 75, No: 2, 1988, ss. 335-346.
- Piersanti, G., “*Current Account Dynamics and Expected Future Budget Deficits: Some International Evidence*”, Journal of International Money and Finance, Vol: 19, No: 2, 2000, ss. 255-271.
- Rosensweig, J. A.; E. W. Tallman, “*Fiscal Policy and Trade Adjustment: Are the Deficits Really Twins?*”, Economic Inquiry, Vol: 31, No: 4, 1993, ss. 580-594.
- Roubini, N., “*Current Account and Budget Deficits in an Intertemporal Model of Consumption and Taxation Smoothing: A Solution to the Feldstein-Horioka Puzzle?*”, NBER Working Paper, No: 2773, 1988, ss. 1-52.
- Sachs, J. D., “*Global Adjustments to a Shrinking U.S. Trade Deficit*”, Brookings Papers on Economic Activity, Vol: 19, No: 2, 1988, ss. 639-674.
- Sürekcı, D., “*Türkiye’de Üçüz Açıklar Olgusunun Analizi: Dinamik Bir Yaklaşım*”, Yönetim ve Ekonomi, Cilt: 18, Sayı: 1, 2011, ss. 51-69.
- Szokolczai, G., “*The Triple Deficit of Hungary*”, Hungarian Statistical Review, No: 10, 2006, ss. 40-62.
- Şimşek, M.; C. Kadılar, “*Türkiye’nin İhracat Talebi Fonksiyonunun Sınır Testi Yöntemi İle Eşbütünleşme Analizi*”, Doğu Üniversitesi Dergisi, Cilt: 6, Sayı: 1, 2005, ss. 144-152.
- Taban, S., “*Türkiye’de Enflasyon-Ekonomik Büyüme İlişkisi: Sınır Testi Yaklaşımı*”, TİSK Akademi, Cilt: 3, Sayı: 5, 2008, ss. 144-167.
- Tarı, R., Ekonometri, 3. Baskı, Kocaeli Üniversitesi Yayınları, İstanbul 2005.

- Uğur, A. A.; P. Karatay, “İkiz Açıklar Hipotezi: Teorik Çerçeve ve Hipoteze Yönelik Yaklaşımlar”, *Sosyoekonomi*, Yıl: 5, Sayı: 9, 2009, ss. 101-122.
- Vamvoukas, G., “*The Twin Deficits Phenomenon: Evidence from Greece*”, *Applied Economics*, Vol: 31, No: 9, 1999, ss. 1093-1100.
- Winner, L. E., “*The Relationship of the Current Account Balance and the Budget Balance*”, *American Economist*, Vol: 37, No: 2, 1993, ss. 78-84.
- Yamak, N.; Y. Küçükkale, “*Türkiye’de Kamu Harcamalarının Ekonomik Büyüme İlişkisi*”, *İktisat İşletme ve Finans*, Cilt: 12, Sayı: 131, 1997, ss. 5-14.
- Yapraklı, S., “*Türkiye’de Esnek Döviz Kuru Rejimi Altında Dış Açıkların Belirleyicileri: Sınır Testi Yaklaşımı*”, *Ankara Üniversitesi SBF Dergisi*, Vol: 65, No: 4, 2010, ss. 141-164.
- Zaidi, I. M., “*Saving, Investment, Fiscal Deficits and the External Indebtedness of Developing Countries*”, *World Development*, Vol: 13, No: 5, 1985, ss. 573-588.
- Zanghieri, P., “*Current Accounts Dynamics in New EU Members: Sustainability and Policy Issues*”, *CEPII Working Paper*, No: 2004-07, 2004, ss. 1-51.
- Zengin, A., “*İkiz Açıklar Hipotezi (Türkiye Uygulaması)*”, *Ekonomik Yaklaşım*, Cilt: 11, Sayı: 39, 2000, ss. 37-67.
- Zietz, J.; D. K. Pemberton, “*The U.S. Budget and Trade Deficits: A Simultaneous Equation Model*”, *Southern Economic Journal*, Vol: 57, No: 1, 1990, ss. 23-34.

PROFITABILITY ANALYSIS OF BANKS: AN APPLICATION ON THE TURKISH BANKING INDUSTRY

Gözde ÇERÇİ*
Serkan Yılmaz KANDIR**
Yıldırım Beyazıt ÖNAL***1

Abstract

Aim of this study is to investigate the factors that affect the profitability of commercial banks, operating in Turkey, between January 2003 and May 2010. A multiple linear regression model is used for the econometric analysis. Independent variables include; loan loss provisions to non-performing loans, non-interest expense to net profit, total loans to total deposits and non-interest income to total assets and growth of money supply. Our findings suggest that loans to deposit ratio and non-interest income to total assets seem to have a positive effect, but non-interest expenses to net income ratio appears to have a negative effect on banks' return on assets. Net interest margin of the commercial banks, another profitability proxy, seems to be positively affected by the ratio of total loans to total deposits, non-interest income to total assets ratio and also provisions for non-performing loans to non-performing loans ratio.

Key Words: Return on Assets, Net Interest Margin, Commercial Banks, Least Squares Estimation Method, Multiple Linear Regression Method

Jel Classification: G21, G30.

* Gözde Çerçi, Research Assistant, Çukurova University, Faculty of Economics and Administrative Sciences, Department of Business, Balcalı, Adana,
Phone: 0322 338 72 63 E-mail: gcerci@cu.edu.tr

** Serkan Yılmaz Kandir, Associate Professor, Çukurova University, Faculty of Economics and Administrative Sciences, Department of Business, Balcalı, Adana,
Phone 0322 338 72 63 E-mail: skandir@cu.edu.tr

*** Yıldırım Beyazıt Önal, Professor, Çukurova University, Faculty of Economics and Administrative Sciences, Department of Business, Balcalı, Adana,
Phone 0322 338 72 63 E-mail: ybeyazit@cu.edu.tr

I. Introduction

The influence of the political, social and economic developments on the countries' banking system is a well-known fact since the beginning. However, the legal regulations that has been made after the financial crisis in 2001, has brought stability and better infrastructure for the Turkish banking system. For many countries, banking system is the driving force behind the economic development. In this context as banks' share increase in the financial system, macroeconomic stability and economic growth is expected to gain even a more important role. For example; 88,8% of the whole financial sector's total assets belong to the banking sector. Also the size of the banking sectors' balance sheet in GDP, has gone up to 88,6% by the second quarter in 2010, in comparison with 87,6% in 2009. These figures clearly verify the importance of the Turkish banking sectors' position in the national economy.

Although the last financial mortgage crisis has enormous negative effect in the global banking system, Turkish banking system has come up even stronger from this period depending on its strong asset quality, liquidity structure, capital adequacy and its legal environment. In this period, having observed bankruptcy of the large scale financial corporations, Turkish banks has achieved increasing return on assets (ROA) by 33% and return on equity (ROE) by 19% relative to the last year's figures.

This study aims to investigate the factors affecting the profitability of commercial banks operating in Turkey. There is a comprehensive literature in this area. This particular study is expected to contribute to the literature by its updated period and the frequency of the data. In addition, the explanatory variables of the profitability have never been used together in the same model before. In this study, profitability and net interest margin of the commercial banks are evaluated in terms of banks' credit risks, administrative activities, liquidity risks, diversification on banking services and changes in the money supply.

This study consists of four sections. In the second section, following the introduction, previous studies and their conclusions are summarized thoroughly. In the third section, the factors affecting the profitability of commercial banks' are tried to be determined by the analysis of the data that are compiled from the reports of Banking Regulation and Supervision Agency (BRSA). Last section concludes the paper.

II. Literature Review

It appears that some studies tend to investigate the determinants of profitability on a single country (Smirlock 1985; Miller ve Noulas 1997; Mamatzakis ve Remeundos 2003; Chirwa 2003; Jeon ve Miller 2004; Sufian ve Chong 2008; Treganna 2009; Sufian 2009), while some others work on more than one (Demirgüç-Kunt ve Huizinga 2003; Goddart, Molyneux ve Wilson 2004; Pasiouras ve Kosmidau 2007; Kosak ve Cok 2008; Flamini, Mcdonald ve Schumacher 2009). For the whole literature, grouping the studies can be arranged by the variables that are used to investigate the determinants of the profitability or the proxy ratios used to explain the commercial banks' profitabilities. There are some studies dealing with micro or internal factors (Miller and Noulas 1997; Goddart, Molyneux ve Wilson 2004; Kosmidau and others, 2006), macro or external factors (Kwast and Rose 1982; Smirlock 1985; Mullineaux 1978, Dinç 2006) or both (Mamatzakis ve Remeundos 2003; Demirgüç-Kunt ve Huizinga 2003; Tunay ve Silpagar 2006; Kalluru ve Bhat 2008; Kosak ve Cok 2008). Besides, as a proxy for the profitability some researchers use ROA (Miller and Noulas 1997; Özkul 2001; Pasiouras ve Kosmidau 2007; Aburime 2008; Sufian ve Chong 2008; Sufian 2009; Vong ve Chan 2009; Alp and others 2010), while some others use ROE (Bumin 2009; Goddart, Molyneux ve Wilson 2004). In addition, there are studies that employ different variables other than the variables mentioned above.

In this study, grouping of the previous studies are made on the country basis. In this context, first set of studies are the ones that cover developed countries. Second set of studies are the ones examining developing countries. After that, cross-country studies takes place and last set includes the studies that take place in Turkey. The separation of the developing countries from the developed ones is based on the data available on the official website of the International Monetary Fund (International Monetary Fund, October 2010, World Economic Outlook Database).

Studies on the developed countries outnumber the studies in the developing countries. Smirlock (1985) investigates the profitability determinants of the banks operating in United States between the years 1973-1978. He employs ROA, ROE and return on invested capital (ROIC) as the proxy measures for profitability. He finds that while market shares were affecting the profitability in a positive way, concentration rates had an opposite relation with all of the three proxies. Miller and Noulas (1997) search for the determinants of 201 banks operating in US which have over 1 billion\$ in assets. They demonstrate that asset

size, loan loss provisions and non-interest expenses has a negative relationship with the bank's profitability. In addition, they expose that total security to total assets ratio, total loans to total assets ratio, non-interest income to net income ratio, total deposits to total assets ratio, personal expenses and consumer loans to total loans ratio have a negative effect on the profitability of these banks. Mamatzakis and Remoundos (2003) include Greek commercial banks, operating in between 1989-2000. They employ ROA and ROE as the profitability indicators. Researchers devise that personnel expenses affect the profitability in an opposite direction and size of the assets in a positive way but only up to a certain point. Jeon and Miller (2004) search for the determinants of commercial banks' profitability operating in South Korea in 1991-1999 period and report that equity ratio, number of staff and non-interest income affect profitability in the same direction; while non-interest expenses and loan loss provisions affect the opposite way. Treganna (2009) searches for the relationship between concentration rate, market share, asset size and profitability of the commercial banks. She conveys that all these variables had a positive effect on ROA and ROE.

Chirva (2003) investigates the relationship between structure of the market and the profitability of the commercial banks operating in Malawi-Africa in 1970-1994 periods. The results show that, as concentration and loan ratio increase, the profitability would also tend to increase. On the other hand, size seems to have a negative effect on the profitability. Chantapong (2005) examines the effects of the Asian financial crisis on the profitability of the Thai banks. In his study, he reveals that the only variable positively associated with the profitability is non-interest income. Another significant result of the study reveals that foreign banks had higher ROA than the domestic ones. Kalluru and Bath (2008) investigate the determinants of the profitability of commercial banks in 1992-2006 periods in India. They show that equity and loan ratios affect the profitability in the same direction, while inflation affect inversely. Moreover, the researchers investigate that if the governing political party could be related to the commercial banks' profitability and find out that an involvement with the governing political party has a positive effect on the profitability. Sufian (2009) studies the differences on the determinants of the profitability of private and public banks between the years 2000 and 2007. They come up with the results that total loans, general expenses and deposits has a negative effect on the profitability. On the other side, size of the assets and equity ratio are negatively associated with the profitability of commercial banks.

Demirgüç-Kunt and Huizinga (1999) process the data of 80 OECD countries, to investigate the determinants of banks' profitability. According to the results, equity ratio, net interest income and inflation rate affect the banks' profitability in a positive way. Loan loss provisions, overhead costs, total loans to total assets and total deposits to total assets ratios affect the profitability in a negative way. Also in developing countries, foreign ownership affects the profitability in a positive way, while in developed countries; foreign ownership impact seems to disappear. Goddard, Molyneux and Wilson (2004), investigate size, diversification and ownership effect of the total 665 Danish, French, German Italian, Spanish and English Commercial and Investment Banks on ROE in 1992-1998. They show that size seems to have significant effect in countries individually. However, there is no significant effect when all countries are analyzed together. Off-balance sheet activities negatively affect profitability in Germany but in England, a positive impact is observed. Also off balance sheet activities show no significant effect on profitability when all the countries analyzed simultaneously. Only equity ratio is positively associated with profitability when analyzed individually or all together. Kosak and Cok (2008) investigate the differences of the determinants of profitability between foreign and domestic Balkan banks. They assert that cost efficiency, proxied by total costs to total income and loan loss provisions has a negative effect on the profitability on both domestic and foreign banks. Another important finding of the research is that interest margin affects domestic banks' profitability negatively but foreign banks' profitability in a positive direction. Furthermore, growth in GDP and increase in exchange rates affect both ROA and ROE in the same direction.

It can easily be seen that the results bear resemblance to each other when looking at the studies in Turkey. Ozkul (2001) searches for the relationship between the foreign banks' and domestic banks' profitability determinants, within the framework of structure- conduct- performance model. Findings of the study shows that non-performing loans and non-interest expenses to total assets ratio has a negative effect on profitability, however equity ratio has a positive effect on banks' profitability. Along with those results, traditional structure-conduct-performance hypothesis is supported, meaning that in Turkey, market concentration is positively related with profitability. Kaya (2002) searches for the determinants of both public and private banks' profitability operating in Turkey. According to the results, ROA tends to increase when capital adequacy ratio increases but it tends to decrease when personnel expenditures increase.

Additionally, liquidity ratio, inflation rate and budget deficit affect ROA, ROE and net interest margin in the same direction. However, total deposits to total assets ratio affects all three indicators of profitability in a negative way. Dinç (2006), investigates the macroeconomic determinants of commercial banks' profitability in Turkey between 2002 and 2004 and finds out that inflation, industrial production index, domestic debt ratio and interest rate variables affect the profitability positively; while foreign debt ratio, foreign exchange rate and growth in GDP affect profitability negatively. Tunay and Silpagar (2006) try to explore the determinants of profitability of Turkish banks in their two-phased study. They assert that Central Bank's overnight interest rates, non-interest income to total assets ratio, asset size and equity ratio affect the profitability in the same direction, but GDP and total assets to GDP ratio were negatively related with the profitability. Sayılğan and Yıldırım (2009) investigate micro and macro determinants of profitability between 2002 and 2007 and conclude that capital adequacy ratio, industrial production index and positive budget balance affect the profitability in a negative way. Alp, Ban, Demirgüneş and Kılıç (2010) covering the years of 2002 and 2009 try to identify the micro determinants of banks' profitability. They report that asset size and capital adequacy ratios has a positive effect on the profitability of the banks. On the other hand, profitability of the banks tends to decrease because of an increase in operating expenses and liquid assets.

It can be seen that there are conflicting results on personnel expenses and concentration ratios, when reporting the findings of the researches on developed countries. On the other hand, there seems to be a consensus that equity ratio, total loans to total assets ratio and non-interest income have a positive impact and non-performing loans seem to have a negative effect on the profitability indicators. In terms of developing countries, the impact of inflation rate indicates difference among countries. In some countries, like Nigeria and China inflation rate has a positive effect, while in countries like India it has a positive effect on the profitability. The same evaluation can be made for non-interest income and non-performing loans as well. For cross-country assessments, the common variable causing profitability to increase is the equity ratio.

Studies focusing on the determinants of Turkish banks' profitability assert that the concentration ratio has a positive effect on profitability, while in Greek and US Banks this effect seems to be vice versa. The concentration ratio in Turkish banking system was 63% in 2009 when it was calculated for five banks. The same ratio rose up to 87% when calculated for 10 banks. Boosting effect of

the concentration ratio on the profitability gets even more meaningful when these figures are taken into account. In addition, as deposits grow in the banking system of USA or Malawi, the profitability seems to have a positive effect on the profitability while in Turkey, this relationship has an opposite effect. Finally, while in USA, European Union (EU) countries, India and China, asset size of the commercial banks affect the profitability negatively; in Turkey, asset size affects commercial banks' profitability in the same direction.

III. Methodology and Empirical Findings

The data used in this analysis, regarding the determination of the commercial banks' profitability in January 2003 and May 2010, are derived from the aggregated data of their financial statements. Information of the financial statements is collected from monthly aggregated balance sheet and income statements published on the BRSA's official website. According to the Bank's Association of Turkey (BAT) there were 36 commercial banks in 2003, 35 in 2004, 33 in 2006 and 2007, 32 in 2008 and 2009. The reason of this decline is the acquisition of Fiba Bank by Finansbank; Pamukbank by Halkbank, bankruptcy of Imarbank and Koçbank's merger with Yapı Kredi Bank. The decrease in the number of banks is believed to show no significant effect on the analysis results due to use of updated monthly aggregate data published by BAT.

Two variables are used as indicators of commercial banks' performance. These variables are; Return on Assets (ROA) and Net Interest Margin (NIM). ROA is calculated by multiplying net profit margin by asset turnover. In other words, it is the ratio of net profit to average assets (Akgüç, 2007, 151). ROA represents the management's success in converting the assets into net income. However, due to taxation system differences in each country or even in time in the same country, as Teker (1998) notes, pre-tax profits are more reliable when calculating ROA. Second indicator of the profitability is NIM. It is calculated by dividing net interest income by average yielding assets. If yielding assets of the bank cannot be calculated accurately, then average assets could replace yielding assets as well (Akgüç, 2007, 149). NIM represents the management's success of the effective use of income generating assets and fund sources to increase interest margin.

There are five independent variables used in this study. These are; loan loss provisions to non-performing loans (LLP) to capture credit risk; non-interest expenses to net income (NIE) to capture managements efficiency; total loans to total deposits (LIQ) to capture liquidity risk, non-interest income to total assets

(NII) to capture management success in diversification and growth in money supply (GMS) as an indicator of macroeconomic innovation. These variables are shown in Table 3.1 below.

Table 3.1. Variable List

1	NFM	Net interest income / Total assets – Dependent variable
2	VOROA	Income before tax / Total assets - Dependent variable
3	KARS	Loan Loss Provisions / Non-performing loans- Independent variable
4	FDGIDINC	Non-interest expense / Net Income - Independent variable
5	LIK	Total loans/ Total deposits- Independent variable
6	FDGEL	Net Interest Income / Total assets - Independent variable
7	M2BUY	Growth in money supply- Independent variable

The research methodology used in this study, following the studies of Smirlock (1985), Sufian ve Chong (2008), Sufian (2009) and Demirgüç, Kunt and Huizinga (1999), is multi linear regression analysis. In addition, variables used in this analysis are frequently used in previous studies. The estimation method of the regression model is ordinary least square (OLS) method. The regression model is as follows;

$$VOROA = \alpha + \beta_1 * KARS + \beta_2 * FDGIDINC + \beta_3 * LIK + \beta_4 * FDGEL + \beta_5 * M2BUY + \epsilon \quad (1)$$

ROA; pre-tax income to total assets

LLP; Loan Loss Provisions to non-performing loans

NIE; Non-interest expense to net Income

LIQ; Total loans to total deposits

NII; Net Interest Income to total assets

GMS; Growth in money supply

$$NFM = \alpha + \beta_1 * KARS + \beta_2 * FDGIDINC + \beta_3 * LIK + \beta_4 * FDGEL + \beta_5 * M2BUY + \epsilon \quad (2)$$

NIM; Net interest margin

LLP; Loan loss provisions to non-performing loans

NIE; Non-interest expense to net income

LIQ; Total loans to total deposits

NII; Net Interest Income to total assets

GMS; Growth in money supply

Descriptive statistics related to all of the variables are shown in Table 3.2. As it can be seen from Table 3.2, the mean value of pre-tax income to total assets is 1,7%. The maximum value and minimum value are 0, 3% and 6%. The difference between the two values is thought to arise from the difference between the ratios during the beginning month and last month.

Table 3.2. Descriptive Statistics

Variables	Mean	Median	Max.Value	Min.Val.	Standard Deviation
VOROA	0.017106	0.0179	0.035	0.0014	0.009437
NFM	0.026812	0.0254	0.0633	0.0039	0.015292
KARS	0.850892	0.88229	0.908722	0.646837	0.062642
FDGIDINC	2.038703	1.708174	8.424908	1.121998	1.052581
LIK	0.928535	0.677872	27.95984	0.330517	2.901823
FDGEL	0.01475	0.015503	0.029296	0.002117	0.007805
M2BUY	0.026299	0.018572	0.629451	-0.02607	0.067714

ROA; Dependent variable, pre-tax income to total assets

NIM; Dependent variable, net interest margin

LLP; Independent variable, loan loss provisions to non-performing loans

NIE; Independent variable, non-interest expense to net income

LIQ; Independent variable, total loans to total deposits

NII; Independent variable, non-interest income to total assets

GMS; Independent variable, growth in money supply

There are some important issues when analyzing time series in regression analysis. One of them is to apply unit root tests to check the stability of the series. Variables used in this study are tested with ADF and all of the series are found to be stable. Besides, multicollinearity problem is investigated by generating a correlation matrix. Matrix indicates that there is no correlation coefficient over 40%. This finding reveals that there is no multicollinearity problem among variables. Lastly, tests for heteroskedasticity and serial correlation problems are tested and Newey-West adjustment are made to provide stable and reliable coefficients. The results of the regression analysis are presented in Table 3.3 and Table 3.4.

Table 3.3. Analysis Results of Regression Model (1)

Dependent Variable:ROA				
Methodology: Ordinary Least Squares				
Period: 2003/01 – 2010/05				
Observations: 89				
	Coefficient	Standard Deviation	t-stat.	Prob.
C	-0.001743	0.007252	-0.240356	0.8106
KARS	0.004797	0.008205	0.584645	0.5604
FDGIDINC**	-0.001066	0.000435	-2.451065	0.0163
LIK***	0.000150	2.78E-05	5.400408	0.0000
FDGEL***	1.137632	0.043298	26.27449	0.0000
M2BUY	0.000759	0.002303	0.329415	0.7427
R²: 0.933979	Adjusted R²: 0.930002		F ist: 234.8358	Olasılık: 0.00000

***indicates significant at %1 level

** indicates significant at %5 level

* indicates significant at %10 level

The results in Table 3.3 shows that total loans to total deposit ratio and non-interest income to total assets are statistically significant at 1% level. In addition, non-interest expense to net income ratio is statistically significant at 5% level. On the other hand, there is no statistically significant relationship between ROA and loan loss provisions to non-performing loans and growth in money supply. Summing up; as the ratio of loans to deposit increases, then the credit risk for the commercial banks increases, so eventually; in line with the finance theory, profitability increases as a result of increasing risk. Besides, non-interest-bearing banking activities represent the success of a qualified and professional management in diversifying the bank's services. This will naturally cause the bank to increase its profitability. When it comes to non-interest expenses such as personnel, rental fees and tax payments, it will be reasonable to focus on the efficiency so costs will tend to decrease and profitability will go up eventually.

Table 3.4. Analysis Results of Regression Model (2)

Dependent Variable: NIM				
Methodology: Ordinary Least Squares				
Period: 2003/01 – 2010/05				
Observations: 89				
	Coefficient	Standard Deviation	t-stat.	Prob.
C	-0.032669	0.018246	-1.790514	0.0770
KARS*	0.036186	0.020177	1.793372	0.0766
FDGIDINC	0.001037	0.000694	1.494733	0.1388
LIK***	0.000405	7.95E-05	5.095138	0.0000
FDGEL***	1.769348	0.135648	13.04371	0.0000
M2BUY	0.003922	0.006819	0.575129	0.5668
R²: 0,850551	Adjusted R²: 0,841549		F ist: 94,47502	Olasılık: 0,00000

***indicates significant at %1 level

** indicates significant at %5 level

*indicates significant at %10 level

The results in Table 3.4 shows that total loans to total deposit ratio and non-interest income to total assets are statistically significant at 1% level. Loan loss provisions to non-performing loan ratio is also statistically significant at 10% level. Conversely, there is no statistically significant relationship between NIM and non-interest expenses to net income and growth in money supply. As expected, any increase in loans to deposits ratio of commercial banks will increase the interest income and so the margin itself. On the other hand, the increase in the non-interest income causes net interest margin to the increase because of the commission fees from both cash and non-cash loans. Another significant result of this analysis; is the positive relationship between the loan loss provisions to non-performing loans ratio and the net interest margin. This relationship can be explained by the skimping hypothesis suggested by Berger and DeYoung (1997). According to this hypothesis, loan-monitoring costs can be reduced by being not too cautious when issuing loans. With lower costs and increase in the number of loans, it will be possible to obtain more interest income. In the short run, this method will cause non-interest expenses to fall and interest expenses to rise up. By this way, profitability will increase. However, in the end, there is a higher chance that non-performing loans would rise up and profitability will decrease again.

IV. Conclusion

Turkish banking sector has not been severely affected from the global financial crisis in 2008 as other samples abroad. The main reasons behind this are the

commercial banks' strong working asset structure, high capital adequacy, successful risk management and well-functioning internal control systems. BRSA and BAT have set up new regulations after the crisis in 2001. These regulations have helped the whole sector to acquire more transparent and solid financial structure. Implementing these risk related precautions will help developing and sustaining an even stronger structure to prevent the reoccurrence of these crises or to be more resistant to the possible future ones. With the help of these regulations, Turkish Financial Sector and banking sector in particular, will have the chance to strengthen its position in world markets.

It has the upmost importance for the banking system to stay as financially healthy as possible as its world peers do. In this context, to determine the profitability factors in commercial banks is of great importance. The main objective of this study is to find out these determinants for Turkish Commercial Banks in January 2003-May 2010 period. For this purpose, there are two dependent variables used in the econometric analysis as indicators of profitability. The first indicator is return on assets (ROA) and the second one is net interest margin (NIM). To explain these indicators, there are five independent variables used in the analysis. These are; total loans to total deposits ratio, non-interest income to total assets ratio, non-interest expenses to net income ratio, loan loss provisions to non-performing loans ratio and growth in money supply. The data used in the analysis are derived from monthly aggregated data on the official web site of BRSA. The effect of the explanatory variables on the dependent variables is analyzed by multiple regression method and the estimation method is ordinary least squares method.

According to the analysis results, ROA is affected positively by total deposits to total loans ratio and non-interest income to total assets ratio. On the other hand, non-interest expenses to net income ratio affect profitability in the opposite direction. Besides, there appears no significant relationship between loan loss provisions to non-performing loans and growth in money supply with ROA.

Total loans to total deposits ratio, non-interest income to total assets ratio and loan loss provisions to non-performing loans appear to affect net interest margin in the same direction. Conversely, non-interest expenses and growth in money supply show no statistically significant relationship at all.

When results are combined, it can be observed that commercial banks' own financial structure and operational achievements seem to have considerable importance on their profitability. Findings of this study indicate similarities with

Tunay ve Silpagar (2006) and Özkul (2001)'s studies in Turkey as well as Sufian and Chong (2008)'s in Philippines; Miller and Noulas (1997) in USA. Looking at the previous studies, loan loss provisions to non-performing loans, non-interest expenses to total assets and non-interest income to net income ratios are observed to cause conflicting results. Some studies suggest that the increase in these ratios cause the profitability to decrease, while some argued the opposite way. In between January 2003-May 2010, both of the indicators of profitability appear to be positively affected by total loans to total deposit and non-interest income to total assets ratios. Another significant result revealed by the study is the increase in the provisions for loans causes the increase in the net interest margin as well.

According to the findings, this study is believed make contributions to the existing financial banking policies. For example, positive and significant relationship between the provisions for loans and net interest margin might encourage banks not to hesitate when issuing loans in the short run. However, this policy may also cause financial problems in the long run. Another example is the liquidity ratios' effect on the profitability. In this context, if conversion rate of the collected deposits could be increased, this will help the profitability to boost in commercial banks.

Moreover, the findings may be useful for the investors in the capital markets. Potential investors considering investing in stocks or bonds issued by commercial banks, might find it useful in placing their investments by checking out the results of this study.

This study has several limitations. Due to the differences in their financial statements, investment and participation banks cannot be included in the sample of the study. In addition, since it is not possible to reach monthly aggregated data, the sample period covers only between January 2003 and May 2010. Limits mentioned above can be eliminated by using different approaches. For future studies, classifying the commercial banks according to their ownership status is believed to extend the benefits and the scope of the analysis.

References

- Aburime, U.T. (2008), “Determinants of Bank Profitability: Company-Level Evidence From Nigeria”, *Deakin University Working Paper*, (seri no: G21), ss. 1-30.
- Alp, A., Ü. Ban, K. Demirgüneş, S. Kılıç, Türk Bankacılık Sektöründe Karlılığın İçsel Belirleyicileri, *İMKB Dergisi*, c.12, s.46, ss: 1-14
- Akgüç, Ö. (2007), *Banka Yönetimi ve Performans Analizi*, İstanbul: Arayış Basım ve Yayımcılık
- Bankacılık Düzenleme ve Denetleme Kurumu, [http://ebulten.bddk.org.tr/AylikBulten/ Basit.aspx](http://ebulten.bddk.org.tr/AylikBulten/Basit.aspx)., Date of access: 25.09.2010
- Bankacılık Düzenleme ve Denetleme Kurumu, <http://www.bddk.org.tr/WebSitesi/Turkce/Kuruluslar/Bankalar/Bankalar.aspx>., Date of access: 25.09.2010
- Bumin, M. (2009), “Türk Bankacılık Sektörünün Karlılık Analizi: 2002-2008”, *Maliye ve Finans Yazıları Dergisi*, c.84, ss.39-60
- Chantapong, S. (2005), “Comperative Study of Domestic and Foreign Bank Performance in Thailand: The Regression Analysis”, *Economic Change and Restructuring*, c.38, ss. 63-83
- Chirwa, E.W. (2003), “Determinanats of Commercial Banks’ Profitability in Malawi: A Cointegration Approach”, *Appiled Financial Economics*, c.13, ss.565-571
- Demirgüç-Kunt, A., H. Huizinga (1999), “Determinants of Commercial Bank Interest Margins and Profitability:Some International Evidence”, *The World Bank Economic Review*, c. 13, no.2, ss. 379-408
- Dinç, A. (2006), “Makroekonomik Faktörlerin Banka Karlılığı Üzerine Etkileri: 2000-2004 Dönemi Türk Bankacılık Sistemi Üzerine Bir Uygulama”, *Yüksek Lisans Tezi*, Yıldız Teknik Üniversitesi Sosyal Bilimler Enstitüsü, İstanbul
- Flamini, V., C. Mcdonald, L. Schumacher (2009), “ The Determinants of Commercial Bank Profitability in Sub-Saharan Africa”, *IMF Working Paper*, (seri no: WP/09/15), ss. 1-29.
- Goddart, J., P. Molyneux, J.O.S. Wilson (2004), “The Profitability of European Banks: A Cross-Sectional and Dynamic Panel Analysis”, *The Manchester School*, c. 72, ss. 363-381
- International Monetary Fund, World Economic Outlook Database, October 2010, <http://www.imf.org/external/pubs/ft/weo/2011/update/02/index.htm> (05/08/2011)

- Jeon, Y., S.M. Miller (2004), "The Effect of the Asian Financial Crises on the Performance of Korean Nationwide Banks", *Applied Financial Economic*, c. 14, no. 5, ss.351-360
- Kalluru, S.R., S. Bhat K. (2008), "An Empirical Analysis of Profitability Determinants in Indian Commercial Banks During Post Reform Period", *The Icfai University Journal of Industrial Economics*, c. V, ss. 38-56
- Kaya, Y. T. (2002), "Türk Bankacılık Sektöründe Karlılığın Belirleyicileri 1997-2000", *Mali Sektör Politikaları Dairesi, Çalışma Raporları*, No. 2002/1, ss.1-16.
- Kosak, M., M. Cok (2008), "Ownership Structure and Profitability of the Banking Sector: The Evidence from the SEE Region", *University of Rijeka, Zb.Rad.Ekon. Fak.Rij.*, c. 26, ss. 93-122
- Kosmidou, K., F. Pasiouras, C. Zopounidis, M. Doumpos (2006), "A multivariate Analysis of the Financial Characteristics of Foreign and Domestic Banks in the UK", *Omega International Journal of Management Science*, c. 34, ss. 189-195
- Kwast, M, J. Rose (1982), "Pricing, Operating Efficiency, And Profitability Among Large Commercial Banks" *Journal of Banking and Finance*, c.6, s.2, ss. 233-254
- Mamtzakis,E.C., P.C. Remoundos (2003), "Determinants of Greek Commercial Banks Profitability, 1989-2000", *University of Piraeus, Spoudai*, c.53, s.1,ss. 85-94
- Miller, S.M., A.G. Noulas (1997), "Portfolio Mix and Large-Bank Profitability in the USA", *Applied Economics*, c. 29, (no. 4), ss.505-512
- Mullineaux, Donald J. (1978), "Economies of Scale and Organizational Efficiency in Banking: A Profit-Function Approach", *Journal of Finance*, Vol. 33, No. 1, March, pp. 259-280.
- Özkul, M. F. (2001), "Türk Bankacılık Sektöründe Karlılık", *Yüksek Lisans Tezi*, Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü, Ankara
- Pasiouras, F., K. Kosmidou (2007), "Factors Influencing the Profitability of Domestic and Commercial Banks in the European Union", *Research International Business and Finance*, c. 21, ss. 222-237
- Sayılgan, G., O. Yıldırım (2009), "Determinants of Profitability in Turkish Banking Sector: 2002-2007", *International Research Journal of Finance and Economics*, c.28, ss.207-214
- Smirlock, M. (1985), "Evidence on the (Non) Relationship Between Concentration and Profitability in Banking", *Journal of Money, Credit and Banking*, c. 17, ss. 69-83

- Sufian, F. (2009), “Determinants of Bank Profitability in a Developing Economy: Empirical Evidence From the China Banking Sector”, *Journal of Asia Pacific Business*, c. 10, no. 4, ss 281-307
- Sufian, F., M.S. Habibullah (2009), “Determinants of Bank Profitability in a Developing Economy: Empirical Evidence From Bangladesh”, *Journal of Business Economics and Management*, c.10, no. 3, ss. 207-217
- Sufian, F., R.R. Chong (2008), “Determinants of Bank Profitability in a Developing Economy: Empirical Evidence from the Philippines”, *Asian Academy of Management Journal of Accounting and Finance*, c.4, no.2, ss. 91-112
- Teker, S. (1998), *Banka Yönetiminde Aktif Pasif Problemi*, İstanbul: İTÜ İşletme Fakültesi Yayınları
- Tregenna, F. (2009), “The Fat Years: The Structure and Profitability of the Us Banking Sector in the Pre-Crises Period”, *Cambridge Journal of Economics*, c. 33, ss. 609-632
- Tunay, K.B., M. Silpagar (2006), Türk Ticari Bankacılık Sektöründe Karlılığa Dayalı Performans Analizi 2, Türkiye Bankalar Birliği Araştırma Tebliğleri Serisi, s: 2006-01
- Tunay, K.B., M. Silpagar (2006), Türk Ticari Bankacılık Sektöründe Karlılığa Dayalı Performans Analizi 1, Türkiye Bankalar Birliği Araştırma Tebliğleri Serisi, s: 2006-02
- TBB, *Bankalarımız 2004*, Türkiye Bankalar Birliği Yayınları, Mayıs 2005
- TBB, *Bankalarımız 2005*, Türkiye Bankalar Birliği Yayınları, Mayıs 2006
- TBB, *Bankalarımız 2006*, Türkiye Bankalar Birliği Yayınları, Mayıs 2007
- TBB, *Bankalarımız 2007*, Türkiye Bankalar Birliği Yayınları, Mayıs 2008
- TBB, *Bankalarımız 2008*, Türkiye Bankalar Birliği Yayınları, Mayıs 2009
- TBB, *Bankalarımız 2009*, Türkiye Bankalar Birliği Yayınları, Mayıs 2010
- TCMB, Finansal İstikrar Raporu, Türkiye Cumhuriyeti Merkez Bankası Yayınları, Aralık 2010, Sayı:11

COMPARISON OF THE PERFORMANCE OF ISE CORPORATE GOVERNANCE INDEX AGAINST PERFORMANCES OF TWO NEWLY CREATED INDICES

Hakan GÜÇLÜ*

Abstract

Companies are expected to increase their performances if they apply the corporate governance principles adopted. However, the value of the ISE Corporate Governance Index which is calculated since August 31st, 2007 to measure the price and return performances of ISE-listed companies with a corporate governance rating was 48,337.81 on December 30th, 2011, a value 2,928.81 points below the ISE-100 Index. Two new indices were calculated to verify two opinions which were put forward regarding the causes of poor performance of the ISE Corporate Governance (CG) Index. In the first index, Dogan Group companies that experienced legal problems due to tax debt and tax fine were excluded from CG Index and the index was re-calculated. In the second index, banks that are alleged to be represented insufficiently were included in the CG Index and the index was re-calculated. It was revealed that as of December 30th, 2011 the first and the second indices were higher than the ISE-100 Index by 5,519.96 and 1,583.69 points, respectively, whereas the first and the second indices were higher than the current CG Index by 8,448.78 and 4,512.51 points, respectively.

Keywords: Corporate governance index, index performance, index companies, corporate governance rating agencies, The views and opinions expressed in this article belong to the author and do not necessarily reflect those of the Istanbul Stock Exchange.

Jel Classification: G39

I. Introduction

The big corporate governance scandals seen in developed countries, notably in USA, in 2001 and 2002 gave rise to questions about the corporate governance concept and its practices. Many countries and authorized bodies introduced new

* Hakan Guclu, *PhD*, Chief Specialist, Istanbul Stock Exchange, Listing Departmet, Resitpasa mah. Tuncay Artun Cad., Emirgan, 34467, Istanbul, Turkey
Tel: (90 212) 298 26 16 e-mail: hakan.guclu@imkb.gov.tr web: www.hakanguclu.com

arrangements regarding corporate governance. Additionally, investors started to take into account the corporate governance practices adopted by the companies they invested in. The arrangements introduced and the new criteria that emerged in investment criteria accelerated the adoption of corporate governance concept and practices by countries, companies and investors in the international scale. This development brought together the need to compare corporate governance practices of companies both nationally and internationally. To that end, rating institutions and other corporate governance institutions started to develop rating methodologies.

The term corporate governance is first of all used to describe a system by which companies and entities are managed and their activities are controlled. In the narrow sense, corporate governance means the management of a company using a system that allows recognition of shareholder rights by the company and the exercise of such rights effectively by the shareholders. In a company, the responsible body in this respect is the board of directors. However, corporate governance is not only seen as a series of activities which are fulfilled by the board of directors. In the broad sense, corporate governance is a system that regulates the relationship between the board of directors, the shareholders and the senior management of the company. When assessing the success of corporate governance practices adopted by a company, the framework of the relationships between these three segments must be drawn clearly.¹

Corporate governance rating is a qualitative rating activity that enables to measure the quality of corporate governance practices of a company within the framework of the adopted corporate governance principles in a standard, comparable and understandable manner, making it easy for all parties to comprehend them. Corporate governance rating is a rating process that examines the management qualities of a company taking into account the shareholder rights in contradistinction to the traditional credit and financial risk ratings which aim to unfold the financial conditions of the companies.

For the purpose of encouraging the publicly-traded companies that are listed on the Istanbul Stock Exchange (ISE) to apply the Corporate Governance Principles of the Capital Markets Board (Board) and measuring, in accordance with the rules determined, the price and return performances of the companies that are listed on the ISE markets (except the Watchlist Market) and that have a

¹ Hakan Güçlü, “**Corporate Governance Compliance Rating**”, ISE Publications, Istanbul, 2010, p.1.

rating in relation to their compliance with the corporate governance principles within the scope of the Board's "Communiqué on Principles Governing Rating Activity in the Stock Market and Rating Agencies", Series VIII, No:51², the Board, at its meeting on December 12th, 2003, decided that a notice be served to the ISE to create a separate index within the ISE for companies that apply corporate governance principles.³

The ISE announced that the Executive Council of the ISE decided, at its meeting dated February 23rd, 2005, to start the calculation of a Corporate Governance (CG) Index, in which companies applying corporate governance principles would be included, one week after the publication of the announcement on the ISE Daily Bulletin provided that five companies that have a minimum corporate governance rating of 6 over 10 are notified to ISE, and to determine "Basic Rules of ISE Corporate Governance Index". In the same circular-letter, it was stated that a 50% discount with regards to "Annual Listing" or "Annual Registration" fees would apply to those ISE-listed companies which would be included in the CG Index.⁴ The minimum corporate governance rating requirement for inclusion in the CG Index was raised from 6 to 7 with a decision made thereafter.

With the amendment adopted at the meeting of the Executive Council of the ISE dated November 18th, 2009, approved at the meeting of the Board dated December 24th, 2009 and No. 1142 and put into effect as of the same date, the principles of discount in "Annual Listing" or "Annual Registration" fees were amended in such a way that annual listing or annual registration fees would be calculated with a 50% discount in the first two years the companies are initially included in the ISE CG Index, a 25% discount in the two years that succeed, and a 10% discount in the years thereafter.⁵

² Capital Markets Board's "Communiqué on Principles Governing Rating Activity in the Stock Market and Rating Agencies", Series: VIII, No: 51 (Republic of Turkey Official Gazette dated 07.12.2007, No. 26580).

³ Ayca Sandikcioglu, "Corporate Governance Compliance Rating", CMB Qualification Study, November 2005, <http://www.spk.gov.tr/yayingoster.aspx?yid=374&ct=f&action=displayfile&ext=.pdf>, January 2008, p. 27.

⁴ Istanbul Stock Exchange's Circular Letter dated 02.23.2005 and No. 237 "Basic Rules of ISE Corporate Governance Index", <http://www.imkb.gov.tr/Regulations/Circulars.aspx>, June 2008.

⁵ Istanbul Stock Exchange, Exchange Daily Bulletin, 29.12.2009, <http://www.imkb.gov.tr/Daily-Bulletin/DailyBulletin.aspx>, December 2009.

The CG Index inclusion criteria were met by Vestel Elektronik Sanayi ve Ticaret A.S. on March 7th, 2007, by Y ve Y Gayrimenkul Yatirim Ortakligi A.S. on April 20th, 2007, by Tofas Turk Otomobil Fabrikasi A.S. on May 28th, 2007, and by Dogan Yayin Holding A.S. on August 2nd, 2007. When Turk Traktor ve Ziraat Makinalari A.S., a company listed in the ISE National Market, achieved the corporate governance rating required for inclusion in the CG Index as stated in its material disclosure which was sent on August 23rd, 2007 and was announced on the ISE Daily Bulletin the same day, and therefore the number of companies meeting the said criteria reached five, the CG Index was started to be calculated effective from August 31st, 2007. The initial value of the CG index was set as 48,082.17 which was the closing value of the ISE National-100 (ISE-100) Index on August 29th, 2007. However, in the time period from the date the index was initially calculated until December 30th, 2011, the value of the CG Index followed a lower course than that of the ISE-100 Index. On December 30th, 2011, the value of the ISE-100 Index was 51,266.62 whilst the value of CG index was 48,337.81, representing a difference of 2,928.81 points between the two indices.

It is expected that the companies implementing corporate governance principles and included in CG Index due to their high corporate governance scores should have higher price returns and performances than other companies. However, contrary to expectations, CG Index where the initial value of the ISE-100 Index with a value index was lower. Therefore, the price performance of the companies involved in CG Index was lower than the companies involved in the ISE-100 Index.

No academic study has been conducted as regards the reasons of this apparently low performance. Among the many views put forward about the reason of such low performance, two views stand out. Advocates of the first view stated that the legal problems attributable to tax debts and fines experienced by Dogan Group companies (Dogan Sirketler Grubu Holding A.S. (Dogan Holding), Dogan Yayin Holding A.S. (Dogan Yayin Holding) and Hurriyet Gazetecilik ve Matbaacilik A.S.(Hurriyet)) which had significant weight in the index particularly during the initial days of the calculation of the index produced important negative effects on the market values (MV) of the company and this was an important factor in the downward movement of the CG Index.

Advocates of the second view stated that the CG Index remained low because banks which had an important weight in ISE market capitulation and ISE indices were not sufficiently represented in the CG Index. Banks have higher

weights than the indices calculated by the ISE. As of December 30th, 2011, 10 banks are included in the ISE-100 Index with a total weight of 37%. Therefore, the effect of the performance of banks' stock prices in the ISE-100 index will be very stronger as of 30.12.2011, there are six banks traded both in ISE-100 and CG Index and their weight is 24% in the CG Index. The weight of the banks in CG Index remained lower than that of ISE-100 Index. In this situation, the performance of banks' stock prices has relatively limited impact on the value of CG Index.

However, no academic study and/or report which has been announced to public could be found to verify any of the two views.

The purpose of this paper is to question both views separately to verify the two views which are put forward as to the reasons of the low performance of the CG Index against the ISE-100 Index, and to set forth the causes of the difference with the help of new indices to be created.

Studies in the literature, corporate governance practices of companies are examined and each application is scored and weighted, and corporate governance rating is calculated for each company. The calculated scores for more than one company are used to compare scores for the performance of companies. Also, scored companies form an index and their performance and stock returns are compared to other companies that are not included in this index. The companies in Turkey use corporate governance principles determined by the Board. Companies' corporate governance practices are evaluated and scored by independent rating agencies authorized by the Board. There is only one CG Index calculated and announced by the Istanbul Stock Exchange and a company who wants to be included in the CG Index must obtain a score from one of these independent rating agencies authorized by the Board. Therefore, it is possible to make an analysis of corporate governance practices in Turkey without having to prepare a separate set of corporate governance principles, the rating of the practices and the creation of an index with given scores. In this article CG Index calculated by ISE is analyzed. Because of aforementioned reasons, the number of companies included in the calculation of the index is varied and the resulting performance differences between the newly calculated indices and the existing one is investigated.

The first section of the paper examines the studies in the literature which were carried out to describe the corporate governance principles and the effects which indices created with a view to revealing the success of such practices have

on the returns, performances and other variables of the companies. A large set of literature studies have been used to uncover all different points of view about corporate governance practices and their consequences.

The second section of the paper includes information about the calculation of the ISE stock indices including the CG Index.

The third section of the paper presents the development and current state of the companies which were included in the CG Index at the beginning and thereafter with reference to their corporate governance ratings and rating agencies. The third section of the paper presents information about the performances which the CG Index exhibited.

The fifth section of the paper presents information about the developments experienced by Dogan Group companies and the banks that are listed on the ISE during the period under review.

The sixth section of the paper describes the creation process of the CG Index – Dogan Group Index and KG Index + banks index which are newly created.

The seventh section of the paper compares the ISE-100 Index against the index which is re-calculated starting from the initial calculation date of the CG Index after excluding Dogan Group companies from the CG index for the purpose of questioning the first view. To question the second view, the ISE-100 Index is compared with the CG index in which all banks included in the ISE-100 Index are included and which is re-calculated starting from the date the index was first calculated.

The conclusion section of the paper includes detailed conclusions for both indices which have been newly created.

Some data in the form of summarized tables prepared for use in the analysis are attached to the paper.

II. Literature Review

Gompers, Ishii and Metrick (2003) used 24 corporate governance rules to create a corporate governance index to demonstrate representatively the rights of shareholders in about 1,500 major companies in 1990s. In the years chosen as example, they showed that a strategy of buying the stocks of companies holding the strongest shareholding rights which constitute 10% of the index and selling the stocks of companies holding the poorest shareholding rights which constitute 10% of the index could produce an abnormal return of 8.5% per year provided it is applied every year. From this point of view, they reached the result that

companies where strong shareholder rights were granted achieved higher firm value, higher profits, higher sales and higher growth rate and enjoyed lower capital expenditures, and experienced fewer takeovers.

Fodor and Diavatopoulos (2010) reexamined the findings of Gompers, Ishii and Metrick, and reached the conclusion that the relationship between the corporate governance practices and company stock returns presented in the said study was very weak. They expanded the period of examination which was used in the previous study to include the data of the years before 1990 and the years in early 2000s in the analysis. They found a reverse relationship between the corporate governance practices and stock returns when such periods were included. They expressed that the high returns achieved by the stocks of well-governed companies was partly the consequence of the positive performances of major companies due to the Nasdaq bubble seen during the said period.

Drobetz, Schillhofer and Zimmermann (2003) calculated corporate governance ratings for German companies, and proved that there existed a positive relationship between the rating and the firm value. In the analysis performed, they reached strong conclusions demonstrating that there was a negative correlation between the expected return and rating if dividend returns and price/earning ratios were used to represent the capital cost. They showed that an abnormal return of 12% could be achieved if an investment strategy of buying stocks of companies with a high rating and selling stocks of companies with a low rating was pursued every year throughout the representative term.

Viggósson (2011) created a corporate governance index comprised of 18 exchange-listed Irish companies that applied important corporate governance principles, and reached the conclusion that the returns on the stocks of well-governed companies and a portfolio comprised of such companies would be higher. However, he stated that the conclusions of the analysis should be approached cautiously and further studies were needed as the analysis was only limited to 18 companies.

Moorman (2005) showed that the conclusion he arrived at as a result of his research was not consistent with the efficient markets and that corporate governance data were not included in market data properly. Using a number of matching criteria and governance indices, no abnormal returns were found related to trading strategies based on corporate governance. He pointed out that the effect of a change in governance on firm value was mixed, but some support was found for poor corporate destroying firm value significantly.

Brown and Caylor (2004), based on a database provided by Institutional Shareholder Services (ISS), constituted a wide range of corporate governance assessment criteria from a combination of 51 factors covering eight sub-categories as audit, board of directors, charter/bylaws, director education, executive and director compensation, stock ownership, progressive practices and state of incorporation. Then corporate governance scores were linked to performances, market values and profit dividends paid to shareholders of 2,327 companies. In the analysis they found that better governed companies were more profitable, more valuable, and paid more cash dividends to their shareholders. They suggested that the eight sub-categories of the corporate governance score were directly related to the firm performance; the corporate governance score calculated for the executive and director compensation group was more often linked to better performance of the company; the corporate governance score calculated for the charters/bylaws group was more often linked to bad firm performance.

Ping (2008) created an index to measure the quality of corporate governance practices of the biggest 100 companies listed in China between 2004-2006 and the companies which comprised the four major indices in Hong Kong between 2002-2005. As a result of the analysis, he concluded that the companies in China and Hong Kong recorded important developments in the corporate governance area. In this context, he showed that there was a positive relationship between the market values of Chinese companies and the corporate governance practices as a whole. In the Hong Kong market, he found that there was a positive relationship between the corporate governance rating scores and the values used to measure firm performance.

Zheka (2006) created indices and sub-indices using a database which showed corporate governance preferences of more than five thousand companies that represent approximately half of the publicly-traded companies in Ukraine in the three-year-term between 2000-2002. The sub-indices created included shareholders rights, transparency and disclosure, independence of board members, independence of the chairman, and shareholder agreements. He found strong evidences that corporate governance practices could be used in estimating the firm performances. He concluded that a rise of one point in the index that covers corporate governance practices increased the firm performance by 0.5 points. Additionally, he statistically and economically demonstrated that corporate governance practices regarding shareholder rights, transparency and

independence of board members had strong impact on the firm performance, whereas independence of the chairman had negative effects.

Bhaga, Bolton and Romano (2008) analyzed the effectiveness of the corporate governance index in estimating firm performances. As a result of their analysis, they found that there was no stable relationship between the measures used in firm performance and corporate governance index. Therefore, they stated that there was no “best” measure that measures the quality of corporate governance practices, and the most effective corporate governance system was dependent upon the company’s specific condition and the conditions of the industry where the company operates.

Koerniadi, Krishnamurti and Tourani-Rad (2010) tried to prove the beneficial impact of firm level corporate governance practices on riskiness of firm’s stock returns. To that end, they used a corporate governance index which they created, and found that well-governed New Zealand companies experienced lower levels of unsystematic risk, *ceteris paribus*. They stated that board composition, shareholder rights and disclosure practices were associated with lower levels of the said risk.

Yildirtan and Ozun (2011) used Arfima-Figarch model to analyze the informative effect of a corporate governance index created with companies having corporate governance scores in the Turkish capital markets, and empirically demonstrated that the governance index could not achieve long-term effects, and thus exhibited weaker effectiveness.

Gompel (2011) performed a multi-factor time series regression analysis in relation to the period between December 1998 - December 2008, and applied the resulting model to two specific crisis periods, i.e. the period between September 2000 - September 2002 and the period between January 2007 – December 2008. As a result of his analysis, he could not reach any statistical conclusion that substantiates the question “Does investing in the stocks of well-governed firms offer shareholders a significant better return on investment during a financial crisis or a stock market downturn than the stocks of poorly governed firms?”. Nevertheless, he demonstrated that there were differences in terms of firm performances between portfolios comprised of well-governed firms and poorly-governed firms during crisis and non-crisis times. He showed that poorly-governed firms exhibited a significantly lower firm performance.

Bae, Lim and Wei (2006) analyzed the return data of more than 14 thousand companies in the markets of 38 developing countries and found that the positive deviations in stock returns were much deeper in poorly-governed markets.

Khatab et al (2011) analyzed the relationship between the performance (profitability) and corporate governance practices of 20 companies listed on the Karachi Stock Market between 2005 - 2009, and demonstrated that well-governed firms exhibited better performance than poorly-governed firms, or firms that did not adopt corporate governance.

Masulis, Wang and Xie (2005) examined whether anti-takeover provisions established by a company affected acquisition or not, and found that if companies with more anti-takeover provisions are acquired, the stock return would be much lower than the stock return to be obtained by acquiring a company with less anti-takeover provisions, and consequently, anti-takeover provisions reduced the value of stocks in which shareholders invest.

Bhagat and Bolton (2008) analyzed the relationship between corporate governance, firm performance, corporate capital structure and the shareholding structure of the company. Firstly, they suggested that there was a significantly positive correlation between the present and future firm performance when board members owned stocks and also when CEO and the board chairman were different persons. Secondly, they concluded that none of the corporate governance measures were correlated with future stock market performance. Thirdly, given poor firm performance, stock ownership of board members and board independence were much effective.

III. Calculation of ISE Stock Market Index

Stock indices calculated include both the price and return indices. While price indices reflect the variation in prices, return indexes are based on dividend payments. Stock indices are a general indicator of stock markets, and provide general information about “market performance” based on the prices of stocks covered by the index. Increases or decreases in the value of the created index portfolio represents increases and decreases in the index.

Market values of companies, rates of shares outstanding (Central Registry Agency (CRA) rates), and market values of shares outstanding are used as basis for index calculations. Market value is calculated by multiplying total number of stocks that represent the capital by the stock price. The Board defines CRA rate as a concept showing free-float rate of the stocks traded on the ISE stock markets, and CRA rates are calculated and announced by CRA. CRA MV is

calculated by multiplying the total market value by the rate of shares outstanding.⁶

Stock indices are calculated as weighed market value of stocks of index-listed companies which have CRA-registered shares outstanding and eligible for purchase and sale (CRA MV). The most recent registered prices are used in the calculation of indices.⁷

The following formula is used in the calculation of indices.⁸

$$E_t = \frac{\sum_{i=1}^n F_{it} * N_{it} * H_{it}}{B_t}$$

E_t =Value of the index at period t

n =Number of stocks (companies) included in the index

F_{it} =Price of the stock “i” at period t

N_{it} =Total number of stock “i” at period t

H_{it} =Rate of shares outstanding of the stock “i” at period

B_t =Divider value of the index at period t

If there occurs any change in the market value of companies included in the index, the divider value of the index is adjusted and the index value is maintained. The adjusted divider value of the indices is calculated using the following formula:

$$B_{t+1} = (1 + \frac{\Delta PD}{PD_t}) * B_t$$

⁶ Istanbul Stock Exchange, “**Stock Indices: Definitions and General Rules**”, <http://www.imkb.gov.tr/Indexes/StockIndexesHome/SelectionCriteria.aspx>, December 2011.

⁷ Istanbul Stock Exchange, “**ISE Basic Information Guide: Indices**”, <http://www.imkb.gov.tr/Publications/TrainingSets2.aspx>, December 2011, p.380.

⁸ Istanbul Stock Exchange’s Circular Letter dated 06.23.2011 and No. 370 “**Basic Rules of ISE Stock Indices**”, <http://www.imkb.gov.tr/Regulations/Circulars.aspx>, December 2011, p.5-7.

B_{t+1} = Adjusted divider value to be used on day $t+1$

ΔPD = Total change in market value of shares outstanding of the stock

PD_t = Total market value of the shares outstanding of the stocks included in the index on day “ t ” calculated over the closing price

B_t = Divider value of the index at period t

Events which require adjustment in divider value of the index are as follows:

- Cash dividend payment (only for return indices)
- Capital increase in cash through or without rights issue
- Inclusion of new stocks in indices
- Exclusion of stocks from indices
- Change in rate of shares outstanding
- Company mergers
- Company demergers

IV. Current State of ISE CG Index

Five companies have been authorized by the Board for corporate governance rating:⁹

TCR Kurumsal Yönetim ve Kredi Derecelendirme A.S. (TCR)
 Saha Kurumsal Yönetim ve Kredi Derecelendirme Hizmetleri A.S. (Saha)
 Kobirate Uluslararası Kredi Derecelendirme ve Kurumsal Yönetim Hizmetleri A.S. (Kobirate)
 JCR Avrasya Derecelendirme A.S. (JCR Eurasia)
 RiskMetrics Group Inc. (RiskMetrics)

Information about the companies included in the CG Index as of December 30th, 2011 are given in tabulated form below including the first date they received a rating, the first rating they received, the rating company, and the date of inclusion in CG index (full names of the companies are given in Appendix 1).

⁹ Capital Markets Board, “Authorized Rating Agencies”, <http://www.spk.gov.tr/indexcont.aspx?action=showpage&showmenu=yes&menuid=6&pid=10&subid=1&submenuheader=10>, December 2011.

Table 1: Rating details of the companies included in CG Index ranked by their inclusion dates

	Firm	Notification Date	Rating Received (%)	Rating Allocated	Rating Company	Index Inclusion Date
1	Vestel Elektronik	07.03.2007	75,91	7,50	ISS Europe (*)	31.08.2007
2	Yeşil GYO	20.04.2007	78,83	7,88	Saha	31.08.2007
3	Tofaş Türk Otomobil	28.05.2007	75,72	7,57	Saha	31.08.2007
4	Doğan Yayın Holding	02.08.2007	85,88	8,50	ISS Europe (*)	31.08.2007
5	Türk Traktör	23.08.2007	75,17	7,52	Saha	31.08.2007
6	Hürriyet Gazetecilik	24.09.2007	79,67	8,00	ISS Europe (*)	26.09.2007
7	Tüpraş	08.10.2007	79,12	7,91	Saha	09.10.2007
8	Şekerbank	03.03.2008	70,16	7,00	ISS Europe (*)	04.03.2008
9	Otokar Otobüs	20.03.2008	79,40	7,94	Saha	21.03.2008
10	Dentaş Ambalaj	12.05.2008	70,75	7,08	Saha	13.05.2008
11	Anadolu Efes	12.06.2008	80,96	8,10	Saha	13.06.2008
12	Asya Katılım Bankası	04.07.2008	75,56	7,56	Saha	07.07.2008
13	Yapı ve Kredi Bankası	29.12.2008	80,21	8,02	Saha	30.12.2008
14	Vakıf MKYO	28.01.2009	78,15	7,81	TCR	29.01.2009
15	Coca-Cola İçecek	01.07.2009	83,04	8,30	Saha	02.07.2009
16	Arçelik	30.07.2009	82,09	8,21	Saha	31.07.2009
17	Tav Havalimanları	04.09.2009	83,34	8,50	RiskMetrics	07.09.2009
18	TSKB	20.10.2009	87,69	8,77	Saha	21.10.2009
19	Doğan Holding	03.11.2009	82,64	8,26	Saha	04.11.2009
20	Petkim Petrokimya	05.11.2009	77,13	7,71	TCR	06.11.2009
21	Logo Yazılım	22.12.2009	80,53	8,05	Saha	23.12.2009
22	İş Finansal Kiralama	28.12.2009	80,24	8,02	Saha	29.12.2009
23	Türk Telekomünikasyon	29.12.2009	80,11	8,01	Saha	30.12.2009
24	Türk Prysmian Kablo	29.12.2009	77,58	7,76	Saha	30.12.2009
25	Turcas Petrol	12.03.2010	75,21	7,52	Saha	15.03.2010
26	Park Elektrik	09.06.2010	86,45	8,65	Saha	10.06.2010
27	Aygaz	30.06.2010	84,61	8,46	Saha	01.07.2010
28	Albaraka Türk	21.10.2010	81,38	8,14	JCR Eurasia	22.10.2010
29	Yazıcılar Holding	08.11.2010	80,44	8,04	Saha	09.11.2010
30	İhlas Holding	28.12.2010	77,09	7,71	JCR Eurasia	29.12.2010
31	İhlas Ev Aletleri	28.12.2010	71,20	7,12	JCR Eurasia	29.12.2010
32	Doğuş Otomotiv	01.03.2011	77,58	7,75	TCR	02.03.2011
33	Mensa Sınai	28.06.2011	75,94	7,59	Saha	29.06.2011
34	Pınar Süt	24.11.2011	83,43	8,34	Saha	25.11.2011
35	Egeli & Co. Yatırım	02.12.2011	82,00	8,20	Saha	05.12.2011
36	Türkiye Halk Bankası	19.12.2011	87,40	8,74	Saha	20.12.2011
37	İş Yatırım	23.12.2011	86,29	8,63	JCR Eurasia	26.12.2011
38	Global Yatırım Holding	28.12.2011	83,64	8,36	Saha	29.12.2011

(*) The name of “ISS Europe S.A.” was changed to “RiskMetrics Group Inc.” in March 2008.

Source: www.kap.gov.tr, www.turkkredirating.com, www.saharating.com,
www.jcravasyarating.com, www.kobirate.com.tr, www.riskmetrics.com

The index which was originally calculated with five companies on August 31st, 2007 included two companies in 2007, six companies in 2008, eleven companies in 2009, seven companies in 2010, and seven companies in 2011, and the number of companies in the index climbed to 38. Currently the number of companies that are included in the CG index but not listed in ISE-100 Index is 14. Those companies that are not included in the ISE-100 Index have a weight of 9.52% in the CG Index as of December 30th, 2011.

The most probable reason of the decrease in new companies included in the index in the last two years is said to be the gradual change in 50% discount rate initially applicable to annual listing/registration fees which is now applied as 50% for the first two years of inclusion, 25% in the two years that succeed, and 10% in the years thereafter.

Below are details regarding the ratings, dates and rating institutions of the companies included in the CG Index as of December 30th, 2011.

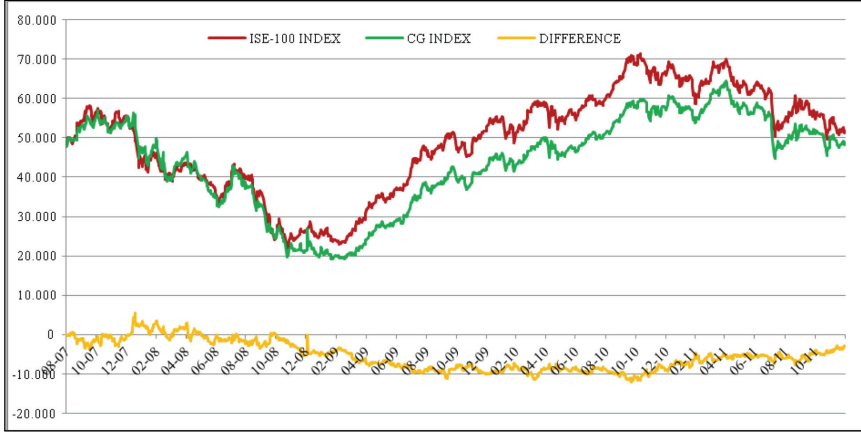
Table 2: Rating details of the companies included in CG Index as at December 30th, 2011

	Company	Date	Part 1	Part 2	Part 3	Part 4	General Average	Rating Allocated	Rating Company
1	Albaraka Türk	21.10.2011	77,08	90,04	81,02	79,47	82,80	8,28	JCR Eurasia
2	Anadolu Efes	01.06.2011	88,19	92,72	93,92	67,49	85,46	8,55	Saha
3	Arçelik	01.08.2011	88,73	93,01	95,23	67,55	85,91	8,59	Saha
4	Asya Katılım Bankası	01.07.2011	73,52	89,07	95,59	74,65	82,56	8,26	Saha
5	Aygaz	30.06.2011	89,11	90,70	90,51	69,39	84,95	8,50	Saha
6	Coca-Cola İçecek	01.07.2011	80,32	95,27	96,43	68,28	84,96	8,50	Saha
7	Dentaş Ambalaj	11.05.2011	84,03	89,38	81,66	64,26	80,60	8,06	Saha
8	Doğan Holding	03.11.2011	87,13	94,05	89,00	71,27	85,87	8,59	Saha
9	Doğan Yayın Holding	01.08.2011	90,39	98,24	79,18	79,62	88,76	8,87	RiskMetrics
10	Doğuş Otomotiv	18.02.2011	68,60	88,20	86,70	66,20	77,58	7,75	TCR
11	Egeli & Co. Yatırım	02.12.2011	79,42	83,10	90,47	77,94	82,00	8,20	Saha
12	Global Yatırım Holding	28.12.2011	82,33	88,08	91,63	73,94	83,64	8,36	Saha
13	Hürriyet Gazetecilik	23.09.2011	86,87	91,87	83,17	76,78	85,54	8,55	RiskMetrics
14	İhlas Ev Aletleri	20.12.2011	68,07	80,36	68,33	73,97	73,88	7,39	JCR Eurasia
15	İhlas Holding	20.12.2011	78,90	87,46	68,24	74,19	79,11	7,91	JCR Eurasia
16	İş Finansal Kiralama	28.12.2011	81,54	95,04	92,97	72,79	85,79	8,58	Saha
17	İş Yatırım	23.12.2011	81,26	91,18	82,44	86,81	86,29	8,63	JCR Eurasia
18	Logo Yazılım	19.12.2011	82,06	87,01	92,10	71,31	82,61	8,26	Saha
19	Mensa Sınai	28.06.2011	78,68	82,80	86,83	57,07	75,94	7,59	Saha
20	Otokar Otobüs	18.03.2011	89,06	89,53	97,62	65,77	84,68	8,47	Saha.
21	Park Elektrik	08.06.2011	86,80	94,69	89,86	73,35	86,66	8,67	Saha
22	Petkim Petrokimya	24.08.2011	84,00	93,62	95,12	68,63	85,19	8,52	Kobirate.
23	Pınar Süt	24.11.2011	83,32	90,56	91,71	68,61	83,43	8,34	Saha
24	Şekerbank	07.02.2011	85,43	89,42	97,89	81,04	87,60	8,76	RiskMetrics
25	Tav Havalimanları	26.08.2011	90,63	93,41	96,82	84,36	90,96	9,09	RiskMetrics
26	Tofaş Türk Otomobil	23.11.2011	80,45	92,17	95,23	76,69	85,83	8,58	Saha
27	Turcas Petrol	08.03.2011	83,00	88,30	87,80	65,36	81,17	8,12	Kobirate
28	Tüpraş	05.10.2011	85,03	92,19	97,20	72,40	86,20	8,62	Saha
29	Türk Prysmian Kablo	22.12.2011	87,14	87,27	92,85	60,95	81,50	8,15	Saha
30	Türk Telekomünikasyon	28.12.2011	80,67	93,10	93,31	67,94	83,73	8,37	Saha
31	Türk Traktör	18.08.2011	80,46	90,93	97,62	73,81	85,04	8,50	Saha
32	Türkiye Halk Bankası	19.12.2011	86,22	95,39	96,58	71,90	87,40	8,74	Saha
33	TSKB	18.10.2011	87,84	97,90	97,30	80,78	91,02	9,10	Saha
34	Vakıf MKYO	19.01.2011	82,00	88,30	85,37	79,74	84,15	8,41	Kobirate
35	Vestel Elektronik	25.02.2011	85,05	85,28	93,96	82,69	85,87	8,58	RiskMetrics
36	Yapı ve Kredi Bankası	28.12.2011	87,14	92,46	95,38	78,18	88,00	8,80	Saha
37	Yazıcılar Holding	03.11.2011	79,88	92,95	96,43	64,15	83,00	8,30	Saha
38	Yeşil GYO	18.04.2011	87,52	94,82	79,11	74,59	85,58	8,56	Saha

Source: www.kap.gov.tr, www.turkkredirating.com, www.saharating.com,
www.icravasyarating.com, www.kobirate.com.tr, www.rikmetrics.com

V. Performance of the CG Index

The graph depicting the changes of value of the CG Index and the ISE-100 Index between August 31st, 2007 - December 30th, 2011, is presented below.

Graph 1: Performance comparison of the CG Index and ISE-100 Index

Source: www.ise.gov.tr

The CG Index which followed a course parallel to the ISE-100 Index at the times when it was initially calculated started to remain below the value of the ISE-100 Index in the last quarter of 2008. In the subsequent periods, the index value difference between the two indices increased in 2009 and 2010, and decreased in 2011. On December 30th, 2011, the value of the ISE-100 Index was 51,266.62 whilst the value of the CG Index was 48,337.81, representing a difference of 2,928.81 points between the two indices.

The highest positive difference between the CG Index and the ISE-100 Index, i.e. 5,440.43 was seen on January 15th, 2008. At such date, the value of the CG Index was 55,817.77 while the value of the ISE-100 Index was 50,377.34. For a total of 101 days between August 31st, 2007 - December 30th, 2011, the value of CG Index was higher than the value of the ISE-100 Index.

The highest negative difference between the CG Index and the ISE-100 Index, i.e. 12,099.50 was seen on October 22nd, 2010. At such date, the value of the CG Index was 58,907.32 while the value of the ISE-100 Index was 71,006.82. For a total of 987 days between August 31st, 2007 - December 30th, 2011, the value of CG Index was lower than the value of the ISE-100 Index.

VI. Information about Dogan Group Companies and Banks

6.1. Information about Dogan Group Companies

Dogan Group companies included in CG Index are Dogan Sirketler Grubu Holding A.S., Dogan Yayin Holding A.S. and Hurriyet Gazetecilik ve Matbaacilik A.S.

The MV variations used were derived from comparisons of the performance of Dogan Group companies as of their date of inclusion in the CG Index against the index and other index companies. While the CRA MVs of the companies are used in the calculation of the index, changes in the CRA rates which occur during the analysis period prevent a full understanding of the performance of the companies based on their stock prices. If MVs are found, it is possible to see the loss in values which occur subject to stock prices of the companies. Additionally, a further adjustment was not made as the resource obtained from rights issues of index companies was added to the market values. In the period between August 31st, 2007 - December 30th, 2011 Dogan Group companies realized rights issues amounting to TL 1,473,500,000, whereas other CG Index companies realized rights issues amounting to TL 872,533,387.

Information about value variations in annual average MVs of Dogan Group companies and other index companies as of the dates of their inclusion in the CG Index and the variations in the CG index are presented in the table below. In calculating the annual averages, the variation rates between the values at the index inclusion date and at the end of the year were taken into account as the annual variation (For further information, see Appendix 2).

Table 3: Performance comparisons of Dogan Group companies and other CG Index companies

(%)	Dogan Yayin Hol.	Hurriyet	Dogan Holding	Average Variation in Other Companies	ISE -100 Index	CG Index
General	-63,96	-75,85	-49,52	43,78	6,62	0,53
2007	6,10	-4,77	-	2,89	15,51	15,23
2008	-86,13	-80,38	-	-48,42	-51,63	-51,51
2009	173,09	245,23	-1,90	95,45	96,64	58,84
2010	75,82	-2,67	8,74	45,14	24,95	33,94
2011	-48,98	-61,54	-52,68	-5,57	-22,33	-15,42

Source: www.ise.gov.tr

As evident from the above table, Dogan Group companies exhibit a variation from the other CG Index companies in terms of market value throughout the analysis period since the date of their inclusion in the index. However, significant declines in MVs of Dogan Group companies are seen between the date of inclusion in the index and December 30th, 2011, with MVs of Dogan Yayin Holding, Hurriyet, and Dogan Holding falling 63.96%, 75.85%, and 49.52%, respectively. In the same period, Dogan Yayin Holding and Hurriyet carried out rights issues amounting to TL 1,381,500,000 and 92,000,000, respectively, but could not avoid a drop in MV. It is seen that the average increase in the MVs of other CG Index companies was 43.78% in the same period. This suggests that Dogan group companies did not demonstrate a good performance against the CG Index and in terms of variation in MV when compared with other index-listed companies.

In the period between August 31st, 2007 - December 30th, 2011, the rises seen in the ISE-100 Index and the CG Index were 6.62% and 0.53%, respectively.

In the CG index value which is found by dividing the total CRA MVs of index-listed companies by the divider value, the weights of the companies change according to the size of the CRA MV they have. Thus, companies with a high CRA MV will have a higher rate in the CRA MV of the CG Index, in which case any variation in a company's CRA MV value will have a higher impact on the value of the CG Index.

The following table presents the course of change which the weights of Dogan Group companies within the index went through between the analysis period, i.e. August 31st, 2007 - December 30th, 2011 in terms of their CG Index inclusion dates and years (For a detailed table, see Appendix 3).

Table 4: Variation of the weights of Dogan Group companies within the CG Index

(%) Date	Dogan Yayin Holding	Hurriyet	Dogan Holding	Total	Number of Companies
29.08.2007	44,98	0	0	44,98	5
26.09.2007	35,06	21,70	0	56,76	+ Hürriyet
31.12.2007	14,24	8,67	0	22,91	7
31.12.2008	1,78	1,53	0	3,31	13
04.11.2009	2,02	2,04	4,95	9,01	+ Doğan Holding
31.12.2009	1,66	1,81	3,77	7,24	24
31.12.2010	1,34	0,76	3,06	5,16	31
30.12.2011	0,68	0,29	1,50	2,47	38

Source: www.ise.gov.tr

As seen above, the addition of each company to the index reduces the weights of the other companies within the index according to the size of the CRA MV of that company. During the initial periods for which the CG index was calculated, the number of companies was low, thus the weights of the index companies within the index was high.

The initial weight of Dogan Yayin Holding, a company of Dogan Group, was initially 44.98% at the date when the CG Index was first calculated, and was thereafter reduced as new companies were included in the index. On September 26th, 2007, the date when Hurriyet was included in the Index, the weight of Dogan Group was slightly raised, and became 56.76%. Finally, on November 4th, 2009, the date when Dogan Holding was included, the weight of Dogan Group in the Index became 9.01% because companies with high CRA MVs were included in the index and the number of companies in the index was 14. In the subsequent periods, further companies were included in the index, and as a consequence, the weights of Dogan Group companies decreased, and declined to 2.47% on December 30th, 2011.

Adverse developments in Dogan Group companies which had a higher weight in the index during its initial periods and the consequential decreases in stock prices and MVs which declined at higher rates compared with the other companies in the index caused the CG Index to have a lower value than the ISE-100 Index in the succeeding periods. Such decline which occurred in the initial periods caused the span between the CG Index and the ISE-100 Index to expand further.

Although the negative performances of those companies with a high weight in the CG Index was reversed to positive in the subsequent periods and the weights of the said companies within the index were lowered with the inclusion of new companies in the index, the positive change which the latter caused in the index remained quite limited.

6.2. Information about Banks

The banks listed on the ISE have great weights in the market capitulation of the ISE. Thus, the stock performances of the banks are quite dominant on the market capitulation and indices. However, only 6 out of the 17 ISE-listed banks are included in the CG Index. When banks are included in the CG Index, the performance of bank stocks may have distinctive effect on the CG Index due to the high capital and CRA MVs they have. The following table presents

information about the index inclusion dates of the banks included in the CG Index, the MVs and CRA MVs of the banks not included in the CG Index and the MVs and CRA MVs of the companies in the CG Index as of December 30th, 2011.

Table 5: Size comparisons of the Banks included and not included in the CG Index

Bank (Index Inclusion Date)	MV (TL)	CRA MV (TL)
Sekerbank (March 4 th , 2008)	900,000,000	135,000,000
Asya Katilim Bankasi (July 7 th , 2008)	1,431,000,000	729,810,000
Yapi ve Kredi Bankasi (December 30 th , 2008)	11,693,567,954	2,104,842,232
TSKB (October 21 st , 2009)	1,464,000,000	570,960,000
Albaraka Turk (October 22 nd , 2010)	846,230,000	177,708,300
T. Halk Bankasi (December 20 th , 2011)	12,375,000,000	3,093,750,000
Total	28,709,797,954	6,812,070,532
Other Banks Not Included in the Index	93,960,262,300	25,509,707,026
All Banks	122,670,060,254	32,321,777,558
CG Index	105,975,397,718	27,763,831,181
Ratio of Index Banks to CG Index	27.09	24.54
Ratio of other Banks to CG Index	88.66	91.88
Ratio of Index Banks to Other Banks	30.56	26.70

Source: www.ise.gov.tr

As it is seen from the table above, the ratios of the MVs and CRA MVs of the banks in the CG Index to the MV and CRA MVs of the CG Index are 27.09 and 24.54%, respectively. However, it is seen that the ratios of the banks included in the CG Index to the total MVs and CRA MVs of the other ISE-listed banks are 30.56% and 26.70%, respectively. Therefore, when the banks not included in the CG Index are included in the Index, the MV and CRA MV of the CG Index will increase by about two folds.

VII. Creation Process of New Indices

7.1. CG Index-Dogan Group Index

Dogan Yayin Holding has been included in the Index since August 31st, 2007, the first date of the CG Index. Hurriyet and Dogan Holding were included in the CG index on September 26th, 2007 and November 4th, 2009, respectively.

To reveal the performance the index would exhibit if the said companies were not included in the CG Index, the companies in question should be excluded from the CG Index and the index should be re-calculated.

To that end, the CRA MVs of Dogan Group companies that were used at their CG Index inclusion dates were subtracted from the index. In that case, the divider values which were used from August 31st, 2007, the first calculation date of the CG Index until December 30th, 2011 and which were necessary to re-calculate the index had to be adjusted. When calculating the divider values, the divider values were re-calculated in each case taking into account the operations which require adjustment of the divider value, i.e. addition of new companies to the index, variations in CRA rates, rights issues, and acquisitions/mergers relating to companies other than Dogan Group companies. In this framework, a sum of 48 divider adjustments was made.

7.2. CG Index + Banks Index

For the purpose of identifying companies for the ISE indices, studies are carried out to identify the companies to be included in and/or excluded from the indices normally four times a year. In some years, the number of such studies may exceed four. In this framework, studies aimed at identifying the companies eligible for the index were carried out and announced to the public for four times in 2007, five times in 2008, seven times in 2009, six times in 2010, and five times in 2011. The summarized table showing the indices in which the banks were included during the period under review is presented below (full names of the banks are given in Appendix 4).

Table 6: Information about the ISE Indices in which the stocks of the ISE-listed banks are traded during the period under review

		2007	2008	2009	2010	2011	
1	Akbank	ISE -30	ISE -30	ISE -30	ISE -30	ISE -30	+
2	Albaraka Türk		ISE -50	ISE -50	ISE -100		+
3	Alternatifbank						-
4	Asya Katılım Bankası	ISE -30	ISE -30	ISE -30	ISE -30	ISE -30	+
5	Denizbank						-
6	Fortis Bank	ISE -50	ISE -100	ISE -100	ISE -100		+
7	Finansbank	ISE -100					-
8	Garanti Bankası	ISE -30	ISE -30	ISE -30	ISE -30	ISE -30	+
9	İş Bankası (A)						+
	İş Bankası (B)						+
	İş Bankası (C)	ISE -30	ISE -30	ISE -30	ISE -30	ISE -30	+
10	Şekerbank	ISE -30	ISE -30	ISE -30	ISE -30	ISE -100	+
11	T. Ekonomi Bankası	ISE -100	ISE -50	ISE -30	ISE -30	ISE -50	+
12	T. Halk Bankası	ISE -30	ISE -30	ISE -30	ISE -30	ISE -30	+
13	T. Kalkınma Bankası						-
14	T.S.K.B.	ISE -30	ISE -30	ISE -50	ISE -50	XU100	+
15	Tekstilbank	ISE -100	ISE -100	ISE -100	ISE -100	ISE -100	+
16	Vakıflar Bankası	ISE -30	ISE -30	ISE -30	ISE -30	ISE -30	+
17	Yapı ve Kredi Bankası	ISE -30	ISE -30	ISE -30	ISE -30	ISE -30	+
						Total	13

Source: www.ise.gov.tr

Among the banks listed above, Albaraka Turk, Asya Katilim Bankasi, Sekerbank, T. Halk Bankasi, T.S.K.B and Yapi ve Kredi Bankasi are banks that are included in the CG Index.

As the performances of the newly created CG Index and the ISE-100 Index would be compared, the other banks included in the ISE Index other than the currently CG Index-listed banks during the period in which the CG Index was calculated were included in the new CG Index in order to make a meaningful comparison.

Among the banks listed on the ISE, Finansbank was not included after the year 2007 and Alternatifbank, Denizbank and T. Kalkinma Bankasi were not included throughout the period under review in the ISE-30, ISE-50 or ISE-100 Indices particularly due to low CRA rates and consequently low CRA MVs. Fortisbank was included in the said indices before its acquisition by TEB in the first half of 2011. As it was wholly transferred to TEB after the merger, it was not included in the last-year indices, but the CRA MV it held prior to the transfer is included in TEB's CRA MV. Due to this fact and the fact that Fortisbank was included in the ISE-50 and ISE-100 Indices in the years except 2011, it was included in the new CG Index. Albaraka was included in the new CG Index because of the fact that it was included in the ISE-50 and ISE-100 Indices in most of the period under review except 2007 and 2011 and it was a bank currently included in the CG Index. Taking into account the fact that corporate governance rating was given to the relevant company, and the values of all stock groups of that company which were traded on the ISE were included in the index, Group A and Group B stocks of Is Bankasi were included in the new index although the company was not included in the ISE-100 Index.

Accordingly, the stocks of 13 out of the 17 ISE-listed banks were included in the new CG Index created.

Therefore, the new index values were calculated on the assumption that in addition to the banks that are currently included in the CG Index, banks mostly listed on the ISE-100 Index during the period in which the CG index was calculated were included in the index since the first date the CG index was calculated.

In this context, new divider values were calculated as done with the other alternate index calculation, and using these values, the new CG Index was calculated. Similarly, when calculating the divider values, the divider values were re-calculated in each case taking into account the operations which require adjustment of the divider value, i.e. addition of new companies to the index,

variations in CRA rates, rights issues, and acquisitions/mergers for all banks. In this framework, a sum of 59 divider adjustments was made.

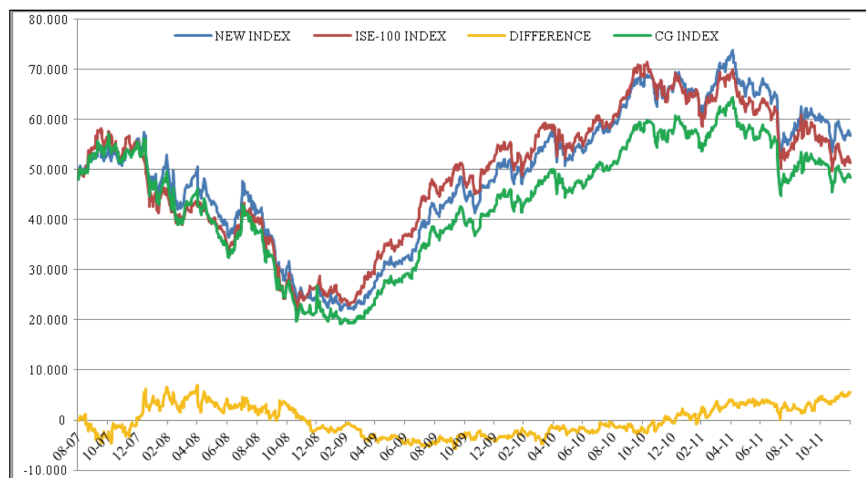
VIII. Evaluation of New CG Indices

A comparison of ISE-100, current and new CG indices as a function of the dates the companied joined the CG index on a weekly basis is shown in Appendix 5.

8.1. Evaluation of CG Index-Dogan Group Index

The following is the graph of the new index which was calculated by excluding Dogan Yayin Holding since August 31st, 2007, the initial date of the CG Index, Hurriyet since September 26th, 2007 and Dogan Holding since November 4th, 2009.

Graph 2: Comparison of CG Index and ISE-100 Index with CG Index-Dogan Group Index



Source: www.ise.gov.tr

While the CG Index – Dogan Group Index was lower than the ISE-100 Index during the first months in which the CG Index was initially calculated, it reached higher values starting from 2008, and remained at low levels again starting from the beginning of 2009. Starting from the beginning of 2011, the CG Index – Dogan Group Index again reached higher levels that that of the ISE-100 Index. Towards the end of 2011, the CG Index – Dogan Group Index

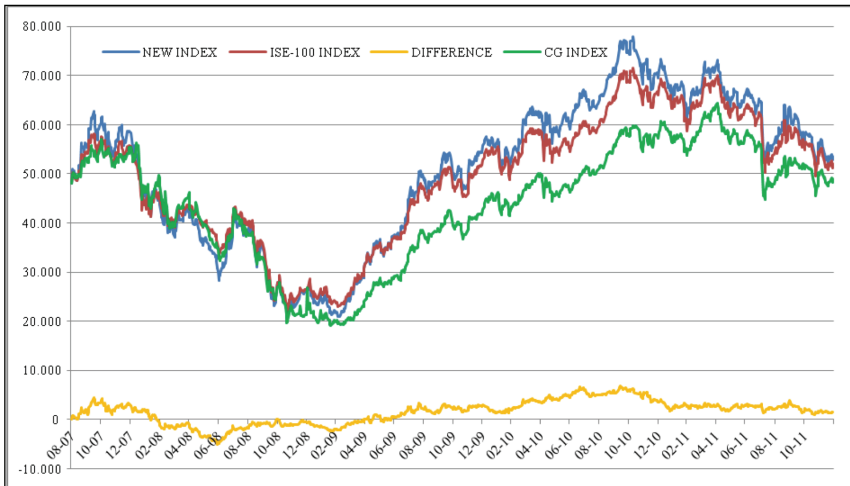
appeared to have a better performance than the ISE-100 Index, and the difference between the index values continued to increase. On December 30th, 2011, the value of the ISE-100 Index was 51,266.62 whilst the value of the CG Index-Dogan Group Index was 56,786.59, representing a difference of 5,519.96 points between the two indices. At the same date, the value of the CG Index was 48,337.81 points.

The highest positive difference between the CG Index-Dogan Group Index and the ISE-100 Index, i.e. 7,062.13 was seen on April 30th, 2008. At such date, the value of the CG Index-Dogan Group Index was 50,530.25 while the value of the ISE-100 Index was 43,468.12. For a total of 505 days between August 31st, 2007 - December 30th, 2011, the value of CG Index-Dogan Group Index was higher than the value of the ISE-100 Index.

The highest negative difference between the CG Index-Dogan Group Index and the ISE-100 Index, i.e. 5,708.99 was seen on October 12th, 2009. At such date, the value of the CG Index-Dogan Group Index was 45,293.99 while the value of the ISE-100 Index was 51,002.98. For a total of 583 days between August 31st, 2007 - December 30th, 2011, the value of CG Index-Dogan Group Index was lower than the value of the ISE-100 Index.

8.2. Evaluation of the CG Index + Banks Index

Graph 3: Comparison of CG Index and ISE-100 Index with CG Index+ Banks Index



Source: www.ise.gov.tr

While the CG Index + Banks Index was higher than the ISE-100 Index during the first months in which the CG Index was initially calculated, it remained at lower levels starting from the beginning of 2008, but followed a parallel course until the midst of 2009. Starting from 2009, the CG Index+Banks Index reached higher levels than those of the ISE-100 Index, and followed a parallel course until December 30th, 2011. On December 30th, 2011, the value of the ISE-100 Index was 51,266.62 whilst the value of CG Index+Banks Index was 52,850.32, representing a difference of 1,583.69 points between the two indices. At the same date, the value of the CG Index was 48,337.81 points.

The highest positive difference between the CG Index+Banks Index and the ISE-100 Index, i.e. 6,812.96 was seen on October 13th, 2010. At such date, the value of the CG Index+Banks Index was 76,979.86 while the value of the ISE-100 Index was 70,166.89. For a total of 779 days between August 31st, 2007 - December 30th, 2011, the value of CG Index+Banks Index was higher than the value of the ISE-100 Index.

The highest negative difference between the CG Index+Banks Index and the ISE-100 Index, i.e. 5,036.26 was seen on June 27th, 2008. At such date, the value of the CG Index+Banks Index was 30,793.14 while the value of the ISE-100 Index was 35,829.40. For a total of 309 days between August 31st, 2007 - December 30th, 2011, the value of CG Index+Banks Index was lower than the value of the ISE-100 Index.

IX Conclusion

The CG Index followed a lower course than that of the ISE-100 Index during the most of the time period from August 31st, 2007, the date the index was initially calculated, until December 30th, 2011. On December 30th, 2011, the value of the ISE-100 Index was 51,266.62 whilst the value of CG index was 48,337.81, representing a difference of 2,928.81 points between the two indices.

New indices were calculated to verify the views put forward for the reasons of the present situation which occurred despite the expectation that the CG Index should have a higher value than the ISE National-100 Index. Firstly, the index was re-calculated by excluding Dogan Group companies from the CG Index in order to reveal the negative effects on the CG Index which were caused by the legal problems attributable to the tax debts and fines suffered by Dogan Group companies which had important weight in the index particularly during the initial days of calculation of the index. Secondly, for the purpose of questioning the

view that those banks which had a significant weight in the ISE market capitulation and the ISE indices were not adequately represented, the index was re-calculated by including in the CG Index those banks that were included in the ISE-100 index starting from the date the CG Index was initially calculated. It was revealed that as of December 30th, 2011 the first and the second indices were higher than the ISE-100 Index by 5,519.96 and 1,583.69 points, respectively, whereas the first and the second indices were higher than the current CG Index by 8,448.78 and 4,512.51 points, respectively.

It appeared that the new index which was calculated by excluding Dogan Group companies was higher than the new index which was calculated by including the banks. Whilst the high rate impairment experienced by companies which had significant weight in the index during the times the index was initially calculated had a negative impact on the index, the appreciation seen in the companies whose weight later decreased with the inclusion of new companies in the index could not raise the index at the same rate. Therefore, the extraordinary situation that occurred in Dogan Group companies had a negative impact on the subsequent performance of the CG Index.

A higher index value was achieved when banks were included in the index since the date of first calculation of the CG Index. However, the difference in between might not be much meaningful. The inclusion of banks which do not have a corporate governance rating in the index without performing any inquiry about the corporate governance practices will conflict with the logic behind the creation of the index.

In the recent periods, the difference between the CG Index and the ISE-Index has been reduced in favor of the CG Index. The increase in the number of companies in the CG Index will carry the ISE Index to higher values than the ISE-100 Index in the subsequent periods.

Aside from the issues mentioned above, it will be meaningful to bear in mind some important points in comparing the CG Index with the ISE-100 Index. The CG Index was started to be calculated when five companies were awarded ratings. However, the number of companies required to calculate the index could be higher. Because the calculation of the CG Index started with five companies, any positive or negative development in the market value of a company which has significant weight in the index will have a high impact on the index. For that reason, if the calculation of the CG Index had been started with 10 or 15 companies, we would have seen a different performance and would have made a much accurate performance comparison.

The number of companies included in the CG Index as of December 30th, 2011 is 38. 14 out of these companies are companies that are not included in the ISE-Index while their weights in the CG Index are not much high. Those companies that are not included in the ISE-100 Index have a weight of 9.52% in the CG Index as of December 30th, 2011. Thus, when comparing the performance of the CG Index, the use of the ISE-All Index instead of the ISE-100 Index will be useful to reach much accurate results.

One of the most important deficiencies of the CG Index is that the corporate governance rating scores which the companies of the index are awarded do not have any effect on the index. While it is sufficient for a company having 7 or a higher rating score to be included in the CG Index, the index is calculated without taking account of the ratings. Therefore, companies with a rating between 7 and 9.5 are included in the index without performing any additional weighting with regards to the ratings they are awarded. For that reason, the ratings awarded to the companies can also be weighted, and the impact of the high or relatively low ratings on the index can be established. In that case, it will be possible to reflect to the index the performance effects arising from the differences in terms of ratings between the companies included in the CG Index.

The new indices which were re-calculated for the purpose of uncovering the real performance of the CG Index and performing a much meaningful comparison against the ISE-100 Index enable to exclude components which were likely to present asymmetrical data about the performance of the CG Index, and suggest that companies that are well-governed, are awarded a rating score, and are included in the CG Index exhibit, though slightly, a better performance than the companies included in the ISE-100 Index.

References

- Ayca Sandikcioglu, "Corporate Governance Compliance Rating", CMB Qualification Study, November 2005, <http://www.spk.gov.tr/yayingoster.aspx?yid=374&ct=-f&action=displayfile-&ext=.pdf>, January 2008, p. 27.
- Bae, Kee-Hong; Lim, Chanwoo and Wei, K. C. John, "Corporate Governance and Conditional Skewness in the World's Stock Markets", *Journal of Business*, 2006, Volume: 79, No: 6, University of Chicago, <http://kee-hong.schulich.yorku.ca/papers/JB-paper.pdf>, December 2011.
- Bhagat, Sanjai and Bolton, Brian, "Corporate Governance and Firm Performance", *Journal of Corporate Finance*, Year: 2008, No: 14, pp. 257–273, April 2008, <http://leeds-faculty.colorado.edu/bhagat/GovernancePerformance-JCF-June2008.pdf>, December 2011.
- Brown, Lawrence D. and Caylor, Marcus L., "Corporate Governance and Firm Performance", Working Paper, December 2004, http://papers.ssrn.com/sol3/papers.-cfm?abstract_id=586423, December 2011.
- Cakmur Yildirtan, Dina and Ozun, Alper, "Does Corporate Governance Matter for Market Efficiency? Evidence from Turkish Markets", *Journal of Management Research*, Number:3, No, 1, 2011, <http://www.macrothink.org/journal/index.php-/jmr/article/view/532/409>, December 2011.
- Drobetz, Wolfgang; Schillhofer, Andreas and Zimmermann, Heinz, "Corporate Governance and Expected Stock Returns: Evidence from Germany", University of Basel, Department of Finance, Department of Finance, Working Paper No: 2/03, February, 2003. <http://www.econbiz.de/en/search/detailed-view/doc/corporate-governance-and-expected-stock-returns-evidence-from-germany-drobetz-wolfgang/10005858708/>, December 2011.
- Fodor, Andy and Diavatopoulos, Dean, "Does Corporate Governance Matter For Equity Returns?", Working Paper, February 2010, <http://www.fma.org/NY/NYProgram2.htm>, December 2011.
- Gompel, van J., "Corporate Governance and Stock Returns in US Markets 1998-2008", Maastricht University School of Business and Economics, Master Thesis, April 2011, <http://arno.unimaas.nl/show.cgi?fid=21957>, December 2011.
- Gompers, Paul A.; Ishii, Joy L. and Metrick, Andrew, "Corporate Governance and Equity Prices", *Quarterly Journal of Economics*, Volume: 118,

- No: 1, pp 107-155, February 2003,
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=278920,
December 2011.
- Hakan Guclu, "Corporate Governance Compliance Rating", ISE Publications,
Istanbul, 2010.
- Istanbul Stock Exchange, "Stock Indices: Definitions and General Rules",
<http://www.imkb.gov.tr/Indexes/StockIndexesHome/SelectionCriteria.aspx>, December 2011.
- Istanbul Stock Exchange, "ISE Basic Information Guide: Indices",
<http://www.imkb.gov.tr/Publications/TrainingSets2.aspx>,
December 2011, p.380.
- Istanbul Stock Exchange's Circular Letter dated February 23rd, 2005 and No. 237
"Basic Rules of ISE Corporate Governance Index",
<http://www.imkb.gov.tr/Regulations/-Circulars.aspx>, June 2008.
- Istanbul Stock Exchange's Circular Letter dated June 23rd, 2011 and No. 370
"Basic Rules of ISE Stock Indices",
<http://www.imkb.gov.tr/Regulations/-Circulars.aspx>, December
2011, p.5-7.
- Istanbul Stock Exchange, Exchange Daily Bulletin, December 29th, 2009,
<http://www.imkb.gov.tr/Daily-Bulletin/DailyBulletin.aspx>,
December 2009.
- JCR Avrasya Derecelendirme A.S.; <http://www.jcravrsyarating.com>.
- Khatab, Humera et al., "Corporate Governance and Firm Performance: A Case
study of Karachi Stock Market", International Journal of Trade,
Economics and Finance, Volume:2, No:1, February 2011,
<http://www.ijtef.org/papers/76-F499.pdf>, December 2011.
- Kobirate Uluslararası Kredi Derecelendirme ve Kurumsal Yönetim Hizmetleri
A.S.; <http://www.kobirate.com.tr>.
- Koerniadi, Hardjo; Krishnamurti, Chandrasekhar and Tourani-Rad, Alireza,
"Corporate Governance and the Variability of Stock Returns:
Evidence from New Zealand Companies", Finance and Corporate
Governance Conference 2010 Paper, Ocak 2010,
<http://eprints.usq.edu.au/19809>, December 2011.
- Masulis, Ronald W.; Wang, Cong and Xie, Fei, "Corporate Governance and
Acquirer Returns", May 2005, European Corporate Governance
Institute-Finance Working Paper No: 116/2006, Journal of
Finance, [http://papers.ssrn.com/sol3/papers.cfm?abstract_id=-](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=-697501)
697501, December 2011.
- Moorman, Theodore Clark, "Corporate Governance and Long-Term Stock
Returns", Master Thesis, Wheaton College, Texas A&M

- University, May 2005, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.180.6400&rep=rep1&type=pdf>, December 2011.
- Ping, Jiang, “Does Corporate Governance Matter? Evidence from China and Hong Kong”, City University Of Hong Kong, Department of Economics and Finance, Ph.D. Thesis, August 2008, <http://arno.unimaas.nl/show.cgi?fid=21957>, December 2011.
- RiskMetrics Group Inc.; <http://www.riskmetrics.com>.
- Romano, Roberta; Bhagat, Sanjai and Bolton, Brian, "The Promise and Peril of Corporate Governance Indices", Faculty Scholarship Series, Paper: 1920, January 2008, http://digitalcommons.law.yale.edu/fss_papers/1920, December 2011.
- Saha Kurumsal Yonetim ve Kredi Derecelendirme Hizmetleri A.S.; <http://www.saharating.com>.
- Capital Markets Board, “Authorized Rating Agencies”, <http://www.spk.gov.tr/-indexcont.aspx?action=showpage&showmenu=yes&menuid=6&pid=10&subid=1&submenuheader=10>, December 2011.
- Capital Markets Board’s “Communiqué on Principles Governing Rating Activity in the Stock Market and Rating Agencies”, Series:VIII, No: 51 (Republic of Turkey Official Gazette dated July 12th, 2007, No. 26580).
- TCR Kurumsal Yonetim ve Kredi Derecelendirme A.S.; <http://www.turkkredirating.com>.
- Viggósson, Páll Snorri, “Corporate Governance and Firm Performance: Evidence from Iceland”, Master Thesis, May 2011, http://skemman.is/stream/get/1946/8194-/21686/3/MS_Thesis_Pall_Viggosson.pdf, December 2011.
- Zheka, Vitaliy, “Corporate Governance and Firm Performance in Ukraine”, Centre For Economic Reform And Transformation, School of Management and Languages, Heriot-Watt University, Discussion Paper 2006/05, May 2006, <http://www.sml.hw.ac.uk/cert-repec/wpa/2006/dp0605.pdf>, December 2011.

Appendix 1: Full Names of Companies Included in the CG Index

1	Albaraka Türk Katılım Bankası A.Ş.
2	Anadolu Efes Biracılık ve Malt Sanayii A.Ş.
3	Arçelik A.Ş.
4	Asya Katılım Bankası A.Ş.
5	Aygaz A.Ş.
6	Coca-Cola İçecek A.Ş.
7	Dentaş Ambalaj ve Kağıt Sanayi A.Ş.
8	Doğan Şirketler Grubu Holding A.Ş.
9	Doğan Yayın Holding A.Ş.
10	Doğuş Otomotiv Servis ve Ticaret A.Ş.
11	Egeli & Co. Yatırım Holding A.Ş.
12	Global Yatırım Holding A.Ş.
13	Hürriyet Gazetecilik ve Matbaacılık A.Ş.
14	İhlas Ev Aletleri İmalat Sanayi ve Ticaret A.Ş.
15	İhlas Holding A.Ş.
16	İş Finansal Kiralama A.Ş.
17	İş Yatırım Menkul Değerler A.Ş.
18	Logo Yazılım Sanayi ve Ticaret A.Ş.
19	Mensa Sınai Ticari ve Mali Yatırımlar A.Ş.
20	Otokar Otobüs Karoseri Sanayi A.Ş.
21	Park Elektrik Üretim Madencilik Sanayi ve Ticaret A.Ş.
22	Petkim Petrokimya Holding A.Ş.
23	Pınar Süt Mamulleri Sanayii A.Ş.
24	Şekerbank T.A.Ş.
25	Tav Havalimanları Holding A.Ş.
26	Tofaş Türk Otomobil Fabrikası A.Ş.
27	Turcas Petrol A.Ş.
28	Tüpraş-Türkiye Petrol Rafinelerini A.Ş.
29	Türk Prysmian Kablo ve Sistemleri A.Ş.
30	Türk Telekomünikasyon A.Ş.
31	Türk Traktör ve Ziraat Makinaları A.Ş.
32	Türkiye Halk Bankası A.Ş.
33	Türkiye Sınai Kalkınma Bankası A.Ş.
34	Vakıf Menkul Kıymetler Yatırım Ortaklığı A.Ş.
35	Vestel Elektronik Sanayi ve Ticaret A.Ş.
36	Y ve Y Gayrimenkul Yatırım Ortaklığı A.Ş.
37	Yapı ve Kredi Bankası A.Ş.
38	Yazıcılar Holding A.Ş.

Appendix 2: Variation in MVs of Doğan Group Companies within the CG Index

	Number of Comp.	4-Doğan Yayın Holding		6-Hürriyet Gazetecilik		19-Doğan Şirketler Gr. Hol.		DOĞAN GRUBU	
		MV	Cumulative Variation (%)	MV	Cumulative Variation (%)	MV	Cumulative Variation (%)	Total MV	Cumulative Variation (%)
28.08.2007	5	2.774.760.000,00	-					2.774.760.000,00	0
03.09.2007	5	2.884.290.000,00	3,95					2.884.290.000,00	3,95
26.09.2007	6	3.042.500.000,00	9,65	1.600.291.430,78	-			4.642.791.430,78	67,32
01.10.2007	6	3.133.775.000,00	12,94	1.608.626.281,98	0,52			4.742.401.281,98	70,91
09.10.2007	7	3.133.775.000,00	12,94	1.700.309.645,20	6,25			4.834.084.645,20	74,22
01.11.2007	7	3.681.425.000,00	32,68	1.675.305.091,60	4,69			5.356.730.091,60	93,05
03.12.2007	7	3.072.925.000,00	10,75	1.516.942.918,76	-5,21			4.589.867.918,76	65,41
02.01.2008	7	2.931.690.000,00	5,66	1.490.340.000,00	-6,87			4.422.030.000,00	59,37
01.02.2008	7	2.238.970.000,00	-19,31	1.330.360.000,00	-16,87			3.569.330.000,00	28,64
03.03.2008	7	1.867.870.000,00	-32,68	1.187.220.000,00	-25,81			3.055.090.000,00	10,10
04.03.2008	8	1.806.020.000,00	-34,91	1.161.960.000,00	-27,39			2.967.980.000,00	6,96
21.03.2008	9	1.410.180.000,00	-49,18	959.880.000,00	-40,02			2.370.060.000,00	-14,59
01.04.2008	9	1.583.360.000,00	-42,94	917.780.000,00	-42,65			2.501.140.000,00	-9,86
01.05.2008	9	1.657.580.000,00	-40,26	934.620.000,00	-41,60			2.592.200.000,00	-6,58
13.05.2008	10	1.509.140.000,00	-45,61	909.360.000,00	-43,18			2.418.500.000,00	-12,84
02.06.2008	10	1.280.295.000,00	-53,86	858.840.000,00	-46,33			2.139.135.000,00	-22,91
13.06.2008	11	1.039.080.000,00	-62,55	753.590.000,00	-52,91			1.792.670.000,00	-35,39
01.07.2008	11	791.680.000,00	-71,47	564.140.000,00	-64,75			1.355.820.000,00	-51,14
07.07.2008	12	847.345.000,00	-69,46	593.610.000,00	-62,91			1.440.955.000,00	-48,07
01.08.2008	12	1.342.145.000,00	-51,63	875.680.000,00	-45,28			2.217.825.000,00	-20,07
01.09.2008	12	1.224.630.000,00	-55,87	759.000.000,00	-52,57			1.983.630.000,00	-28,51
03.10.2008	12	884.455.000,00	-68,12	598.000.000,00	-62,63			1.482.455.000,00	-46,57
03.11.2008	12	556.650.000,00	-79,94	386.400.000,00	-75,85			943.050.000,00	-66,01
01.12.2008	12	395.840.000,00	-85,73	294.400.000,00	-81,60			690.240.000,00	-75,12
30.12.2008	13	402.025.000,00	-85,51	294.400.000,00	-81,60			696.425.000,00	-74,90
02.01.2009	13	445.320.000,00	-83,95	322.000.000,00	-79,88			767.320.000,00	-72,35
29.01.2009	14	395.840.000,00	-85,73	294.400.000,00	-81,60			690.240.000,00	-75,12
02.02.2009	14	389.655.000,00	-85,96	285.200.000,00	-82,18			674.855.000,00	-75,68
02.03.2009	14	284.510.000,00	-89,75	211.600.000,00	-86,78			496.110.000,00	-82,12
01.04.2009	14	340.175.000,00	-87,74	271.400.000,00	-83,04			611.575.000,00	-77,96
04.05.2009	14	470.060.000,00	-83,06	354.200.000,00	-77,87			824.260.000,00	-70,29
01.06.2009	14	692.720.000,00	-75,03	455.400.000,00	-71,54			1.148.120.000,00	-58,62
01.07.2009	14	995.785.000,00	-64,11	570.400.000,00	-64,36			1.566.185.000,00	-43,56
02.07.2009	15	971.045.000,00	-65,00	538.200.000,00	-66,37			1.509.245.000,00	-45,61
31.07.2009	16	1.080.325.000,00	-61,07	547.400.000,00	-65,79			1.627.725.000,00	-41,34
03.08.2009	16	1.104.925.000,00	-60,18	561.200.000,00	-64,93			1.666.125.000,00	-39,95
01.09.2009	16	1.347.360.000,00	-51,44	883.200.000,00	-44,81			2.230.560.000,00	-19,61
07.09.2009	17	1.315.280.000,00	-52,60	872.160.000,00	-45,50			2.187.440.000,00	-21,17
01.10.2009	17	866.160.000,00	-68,78	816.960.000,00	-48,95			1.683.120.000,00	-39,34
21.10.2009	18	850.120.000,00	-69,36	794.880.000,00	-50,33			1.645.000.000,00	-40,72
02.11.2009	18	970.420.000,00	-65,03	1.004.640.000,00	-37,22			1.975.060.000,00	-28,82
04.11.2009	19	1.050.620.000,00	-62,14	899.760.000,00	-43,78	2.572.500.000,00	-	4.522.880.000,00	63,00
06.11.2009	20	1.162.900.000,00	-58,09	899.760.000,00	-43,78	2.670.500.000,00	3,81	4.733.160.000,00	70,58
01.12.2009	20	890.220.000,00	-67,92	949.440.000,00	-40,67	2.303.000.000,00	-10,48	4.142.660.000,00	49,30
23.12.2009	21	962.400.000,00	-65,32	999.120.000,00	-37,57	2.254.000.000,00	-12,38	4.215.520.000,00	51,92
29.12.2009	22	962.400.000,00	-65,32	982.560.000,00	-38,60	2.303.000.000,00	-10,48	4.247.960.000,00	53,09
30.12.2009	24	1.058.640.000,00	-61,85	1.037.760.000,00	-35,15	2.523.500.000,00	-1,90	4.619.900.000,00	66,50
04.01.2010	24	1.106.760.000,00	-60,11	1.043.280.000,00	-34,81	2.499.000.000,00	-2,86	4.649.040.000,00	67,55
01.02.2010	24	1.475.680.000,00	-46,82	1.120.560.000,00	-29,98	3.038.000.000,00	18,10	5.634.240.000,00	103,05
01.03.2010	24	1.339.340.000,00	-51,73	927.360.000,00	-42,05	2.597.000.000,00	0,95	4.863.700.000,00	75,28
15.03.2010	25	1.323.300.000,00	-52,31	932.880.000,00	-41,71	2.695.000.000,00	4,76	4.951.180.000,00	78,44
01.04.2010	25	1.323.300.000,00	-52,31	932.880.000,00	-41,71	2.866.500.000,00	11,43	5.122.680.000,00	84,62
03.05.2010	25	1.464.060.000,00	-47,24	932.880.000,00	-41,71	2.817.500.000,00	9,52	5.214.440.000,00	87,92
01.06.2010	25	1.460.000.000,00	-47,38	767.280.000,00	-52,05	2.817.500.000,00	9,52	5.044.780.000,00	81,81
10.06.2010	26	1.380.000.000,00	-50,27	717.600.000,00	-55,16	2.548.000.000,00	-0,95	4.645.600.000,00	67,42
01.07.2010	27	1.320.000.000,00	-52,43	701.040.000,00	-56,19	2.450.000.000,00	-4,76	4.471.040.000,00	61,13
02.08.2010	27	1.470.000.000,00	-47,02	855.600.000,00	-46,53	2.646.000.000,00	2,86	4.971.600.000,00	79,17
01.09.2010	27	1.280.000.000,00	-53,87	783.840.000,00	-51,02	2.450.000.000,00	-4,76	4.513.840.000,00	62,67
01.10.2010	27	1.420.000.000,00	-48,82	850.080.000,00	-46,88	2.572.500.000,00	-	4.842.580.000,00	74,52
22.10.2010	28	1.480.000.000,00	-46,66	927.360.000,00	-42,05	2.572.500.000,00	-	4.979.860.000,00	79,47
01.11.2010	28	1.450.000.000,00	-47,74	905.280.000,00	-43,43	2.597.000.000,00	0,95	4.952.280.000,00	78,48
09.11.2010	29	1.820.000.000,00	-34,41	999.120.000,00	-37,57	2.817.500.000,00	9,52	5.636.620.000,00	103,14
01.12.2010	29	1.720.000.000,00	-38,01	938.400.000,00	-41,36	2.597.000.000,00	0,95	5.255.400.000,00	89,40
29.12.2010	31	2.050.000.000,00	-26,12	1.054.320.000,00	-34,12	2.768.500.000,00	7,62	5.872.820.000,00	111,65
03.01.2011	31	1.970.000.000,00	-29,00	1.021.200.000,00	-36,19	2.744.000.000,00	6,67	5.735.200.000,00	106,69
01.02.2011	31	2.070.000.000,00	-25,40	1.230.960.000,00	-23,08	2.744.000.000,00	6,67	6.044.960.000,00	117,86
01.03.2011	31	1.840.000.000,00	-33,69	1.026.720.000,00	-35,84	2.866.500.000,00	11,43	5.733.220.000,00	106,62
02.03.2011	32	1.820.000.000,00	-34,41	1.043.280.000,00	-34,81	2.866.500.000,00	11,43	5.729.780.000,00	106,50
01.04.2011	32	2.030.000.000,00	-26,84	1.142.640.000,00	-28,60	2.989.000.000,00	16,19	6.161.640.000,00	122,06
02.05.2011	32	1.810.000.000,00	-34,77	1.087.440.000,00	-32,05	2.964.500.000,00	15,24	5.861.940.000,00	111,26
01.06.2011	32	2.110.000.000,00	-23,96	783.840.000,00	-51,02	2.597.000.000,00	0,95	5.490.840.000,00	97,89
28.06.2011	33	2.070.000.000,00	-25,40	673.440.000,00	-57,92	2.131.500.000,00	-17,14	4.874.940.000,00	75,69
01.07.2011	33	2.130.000.000,00	-23,24	739.680.000,00	-53,78	2.229.500.000,00	-13,33	5.099.180.000,00	83,77
01.08.2011	33	1.840.000.000,00	-33,69	618.240.000,00	-61,37	2.082.500.000,00	-19,05	4.540.740.000,00	63,64
02.09.2011	33	1.300.000.000,00	-53,15	502.320.000,00	-68,61	1.617.000.000,00	-37,14	3.419.320.000,00	23,23
03.10.2011	33	1.420.000.000,00	-48,82	540.960.000,00	-66,20	1.592.500.000,00	-38,10	3.553.460.000,00	28,06

Appendix 3: Weights of Dogan Group Companies within the CG Index

Date	4-Dogan Yayin Holding	6-Hurriyet Gazetecilik	19-Dogan Holding	Total	Other Companies in the Index
29.08.2007	44,98	0	0	44,98	Vestel, YY GYO, Tofaş, Türk Traktör
03.09.2007	44,41	0	0	44,41	
26.09.2007	35,06	21,70	0	56,76	+ Hürriyet
01.10.2007	35,79	21,61	0	57,40	
09.10.2007	15,06	9,61	0	24,67	+ Tüpraş
01.11.2007	17,57	9,41	0	26,98	
03.12.2007	15,44	8,97	0	24,41	
10.12.2007	15,29	8,93	0	24,22	
25.12.2007	14,81	8,87	0	23,68	
02.01.2008	14,46	8,65	0	23,11	
01.02.2008	12,83	8,97	0	21,80	
04.03.2008	8,61	6,51	0	15,12	+ Şekerbank
21.03.2008	7,57	6,06	0	13,63	+ Otokar
01.04.2008	8,21	5,60	0	13,81	
01.05.2008	8,05	5,34	0	13,39	
13.05.2008	7,33	5,20	0	12,53	+ Dentaş Ambalaj
02.06.2008	6,70	5,29	0	11,99	
13.06.2008	4,25	3,63	0	7,88	+ Anadolu Efes
01.07.2008	3,61	3,03	0	6,64	
07.07.2008	3,42	2,82	0	6,24	+ Asya Katılım Bankası
01.08.2008	4,19	3,22	0	7,41	
07.08.2008	4,57	3,29	0	7,86	
01.09.2008	4,39	3,20	0	7,59	
03.10.2008	3,70	2,94	0	6,64	
03.11.2008	2,74	2,24	0	4,98	
01.12.2008	2,42	2,12	0	4,54	
30.12.2008	1,80	1,55	0	3,35	+ Yapı ve Kredi Bankası
02.01.2009	1,90	1,62	0	3,52	
29.01.2009	1,74	1,52	0	3,26	+ Vakıf MKYO
02.02.2009	1,83	1,57	0	3,40	
02.03.2009	1,37	1,20	0	2,57	
01.04.2009	1,61	1,51	0	3,12	
04.05.2009	1,83	1,62	0	3,45	
01.06.2009	1,98	1,78	0	3,76	
01.07.2009	3,06	2,07	0	5,13	
02.07.2009	3,03	1,96	0	4,99	+ Coca-Cola İçecek
31.07.2009	2,78	1,66	0	4,44	+ Arçelik
03.08.2009	2,74	1,64	0	4,38	
04.08.2009	2,94	2,05	0	4,99	
01.09.2009	3,10	2,39	0	5,49	
07.09.2009	2,95	2,30	0	5,25	+ TAV Havalimanları
01.10.2009	1,85	2,05	0	3,90	
21.10.2009	1,59	1,75	0	3,34	+ Türkiye Sınai Kalkınma Bankası
02.11.2009	1,99	2,42	0	4,41	
04.11.2009	2,02	2,04	4,95	9,01	+ Doğan Şirketler Grubu Holding
06.11.2009	2,17	1,98	4,99	9,14	+ Petkim Petrokimya
01.12.2009	1,69	2,12	4,37	8,18	
23.12.2009	1,69	2,07	3,97	7,73	+ Logo Yazılım
29.12.2009	1,50	1,80	3,59	6,89	+ İş Finansal Kiralama
30.12.2009	1,64	1,89	3,91	7,44	+ Türk Telekom ve Türk Prysmian
04.01.2010	1,63	1,81	3,68	7,12	
01.02.2010	2,04	1,82	4,19	8,05	
01.03.2010	1,97	1,61	3,83	7,41	
15.03.2010	1,88	1,56	3,83	7,27	+ Tüccas Petrol
01.04.2010	1,72	1,43	3,73	6,88	
09.04.2010	1,90	1,40	3,68	6,98	
03.05.2010	1,82	1,37	3,50	6,69	
01.06.2010	1,98	1,22	3,82	7,02	
10.06.2010	1,84	1,13	3,40	6,37	+ Park Elektrik
01.07.2010	1,71	1,07	2,89	5,67	+ Aygaz
02.08.2010	1,72	1,18	2,83	5,73	
01.09.2010	1,49	1,07	2,60	5,16	
01.10.2010	1,53	1,08	2,61	5,22	
22.10.2010	1,48	1,09	2,43	5,00	+ Albaraka Türk
01.11.2010	1,47	1,08	2,48	5,03	

Date	4-Dogan Yayın Holding	6-Hurriyet Gazetecilik	19-Dogan Holding	Total	Other Companies in the Index
09.11.2010	1,77	1,14	2,58	5,49	+ Yazıcılar Holding
01.12.2010	1,78	1,14	2,53	5,45	
29.12.2010	2,01	1,22	2,56	5,79	+ İhlas Holding ve İhlas Ev Aletleri
03.01.2011	1,31	0,75	2,99	5,05	
01.02.2011	1,40	0,92	3,03	5,35	
01.03.2011	1,33	0,82	2,83	4,98	
02.03.2011	1,31	0,83	2,82	4,96	+ Doğuş Otomotiv
01.04.2011	1,29	0,80	2,61	4,70	
02.05.2011	1,09	0,73	2,45	4,27	
26.05.2011	1,52	0,58	2,40	4,50	
01.06.2011	1,40	0,57	2,35	4,32	
29.06.2011	1,42	0,52	1,97	3,91	+ Mensa Sınai
01.07.2011	1,40	0,54	2,01	3,95	
01.08.2011	1,25	0,53	1,94	3,72	
02.09.2011	1,00	0,43	2,10	3,53	
03.10.2011	1,01	0,43	1,91	3,35	
01.11.2011	0,94	0,41	1,94	3,29	
25.11.2011	0,84	0,35	1,69	2,88	+ Pınar Süt
01.12.2011	0,80	0,34	1,66	2,80	
05.12.2011	0,82	0,34	1,72	2,88	+ Egeli&Co Yatırım
20.12.2011	0,69	0,30	1,45	2,44	+ T. Halk Bankası
26.12.2011	0,71	0,30	1,52	2,53	+ İş Yatırım Menkul Değerler
29.12.2011	0,69	0,29	1,45	2,43	+ Global Yatırım Holding A.Ş.
30.12.2011	0,68	0,29	1,50	2,47	

Appendix 4: Full Names of ISE-Listed Banks

1	Akbank T.A.Ş.
2	Albaraka Türk Katılım Bankası A.Ş.
3	Alternatifbank A.Ş.
4	Asya Katılım Bankası A.Ş.
5	Denizbank A.Ş.
6	Finansbank A.Ş.
7	Fortis Bank A.Ş.
8	Şekerbank T.A.Ş.
9	T. Garanti Bankası A.Ş.
10	Tekstil Bankası A.Ş.
11	Türk Ekonomi Bankası A.Ş.
12	Türkiye Halk Bankası A.Ş.
13	Türkiye İş Bankası A.Ş.
14	Türkiye Kalkınma Bankası A.Ş.
15	Türkiye Sınai Kalkınma Bankası A.Ş.
16	Türkiye Vakıflar Bankası T.A.O.
17	Yapı ve Kredi Bankası A.Ş.

Appendix 5: A comparison of ISE-100, current and new CG indices as a function of the dates the companied joined the CG index on a weekly basis

Date	ISE-100 Index	Number of Companies	CG Index	Number of Companies	CG Index - Doğan Group	Number of Companies	CG Index + Banking Index	
29.08.2007	48.082,17	5	48.082,17	4	48.082,17	18	48.082,17	Dogan Yayin, Vestel, YGYO, Tofas, Turk Traktor + 13 banks
31.08.2007	50.198,60	5	49.896,19	4	50.182,90	18	51.026,71	
07.09.2007	49.050,42	5	49.216,45	4	49.289,24	18	49.446,04	
14.09.2007	50.620,91	5	49.575,53	4	49.770,99	18	51.734,79	
21.09.2007	53.882,14	5	52.695,34	4	53.048,67	18	55.581,67	
26.09.2007	54.245,83	6	52.777,67	4	52.708,97	19	56.184,55	+ Hurriyet
28.09.2007	54.044,22	6	53.008,57	4	52.097,93	19	56.082,40	
05.10.2007	56.792,97	6	53.339,46	4	52.838,15	19	59.164,93	
09.10.2007	57.910,57	7	55.739,33	5	55.198,10	20	61.371,70	+ Tupras
10.10.2007	57.418,04	7	55.195,85	5	54.200,19	20	60.835,52	
19.10.2007	55.486,84	7	53.303,28	5	52.343,09	20	58.405,84	
26.10.2007	56.446,59	7	54.857,30	5	52.828,75	20	59.740,29	
02.11.2007	56.855,06	7	54.935,30	5	53.204,03	20	60.580,30	
09.11.2007	53.689,08	7	53.875,17	5	53.074,88	20	55.430,96	
16.11.2007	54.304,47	7	54.214,83	5	53.027,28	20	56.337,68	
23.11.2007	52.331,29	7	51.654,34	5	51.056,51	20	54.284,47	
30.11.2007	54.213,82	7	52.493,54	5	51.694,19	20	56.712,63	
07.12.2007	56.490,57	7	54.010,87	5	53.972,43	20	59.375,86	
14.12.2007	54.911,71	7	52.886,67	5	53.110,70	20	57.356,37	
19.12.2007	53.847,36	7	53.053,69	5	53.115,96	20	56.336,89	
28.12.2007	55.698,42	7	55.473,87	5	56.134,42	20	58.782,36	
31.12.2007	55.538,13	7	55.406,17	5	56.158,76	20	58.343,64	
04.01.2008	52.529,88	7	52.550,47	5	53.310,78	20	54.122,65	
11.01.2008	51.920,59	7	56.286,21	5	57.498,71	20	53.863,66	
18.01.2008	48.657,45	7	51.215,06	5	51.398,01	20	50.145,45	
25.01.2008	45.497,24	7	47.755,75	5	48.567,07	20	47.579,76	
01.02.2008	44.452,08	7	46.766,24	5	48.085,61	20	46.251,43	
08.02.2008	41.957,86	7	44.087,93	5	46.089,83	20	42.385,16	
15.02.2008	44.305,27	7	45.164,97	5	47.017,55	20	45.023,51	
22.02.2008	45.592,48	7	48.137,76	5	50.655,81	20	45.673,78	
29.02.2008	44.776,88	7	47.596,42	5	50.684,95	20	43.610,59	
04.03.2008	42.923,03	8	44.533,55	6	47.333,78	20	41.130,12	+ Sekerbank
07.03.2008	41.537,22	8	42.467,75	6	45.397,95	20	39.776,46	
14.03.2008	42.585,91	8	43.329,04	6	46.594,86	20	41.201,82	
21.03.2008	39.719,08	9	38.939,89	7	42.013,96	21	38.277,03	+ Otokar
28.03.2008	39.501,17	9	39.236,96	7	42.465,92	21	37.875,94	
04.04.2008	41.362,71	9	42.612,75	7	46.009,48	21	40.225,46	
11.04.2008	41.980,11	9	43.020,24	7	46.569,72	21	40.626,58	
18.04.2008	42.641,06	9	44.102,84	7	47.824,79	21	41.604,82	
25.04.2008	43.593,80	9	45.031,92	7	48.875,37	21	42.927,56	
02.05.2008	43.425,85	9	42.683,83	7	46.065,93	21	41.623,97	
09.05.2008	42.034,70	9	41.849,47	7	45.371,69	21	39.816,12	
13.05.2008	41.831,11	10	42.799,37	8	46.731,30	22	39.730,67	+ Dentas Ambalaj
16.05.2008	42.498,82	10	43.669,69	8	47.730,89	22	40.468,80	
23.05.2008	39.960,99	10	40.698,00	8	44.509,68	22	36.551,33	
30.05.2008	39.969,63	10	39.758,73	8	43.561,96	22	36.557,40	
06.06.2008	39.645,54	10	39.232,06	8	43.119,75	22	36.114,00	
13.06.2008	38.295,72	11	36.504,60	9	40.573,11	23	34.552,38	+ Anadolu Efes
20.06.2008	37.912,85	11	35.642,35	9	39.666,66	23	33.907,30	
27.06.2008	35.829,40	11	34.819,96	9	39.002,23	23	30.793,14	
04.07.2008	34.300,37	11	32.583,83	9	36.683,28	23	29.817,22	
07.07.2008	35.010,04	12	33.272,74	10	37.369,17	23	30.836,49	+ Asya Katilim Bankasi
11.07.2008	35.006,46	12	33.297,10	10	37.271,08	23	31.079,54	
18.07.2008	37.946,57	12	36.174,05	10	40.396,74	23	35.294,81	
25.07.2008	37.556,95	12	36.821,37	10	40.955,12	23	34.957,30	
01.08.2008	42.984,66	12	42.980,54	10	47.668,08	23	41.218,14	
08.08.2008	40.949,91	12	41.099,23	10	45.405,34	23	39.010,24	
15.08.2008	42.194,42	12	40.679,60	10	44.787,09	23	40.585,65	
22.08.2008	40.894,27	12	39.407,72	10	43.723,59	23	39.040,91	
29.08.2008	39.844,48	12	38.104,76	10	42.201,43	23	38.115,22	
05.09.2008	39.115,63	12	37.446,76	10	41.462,99	23	37.928,11	
12.09.2008	37.033,87	12	35.424,23	10	39.599,81	23	36.337,95	
19.09.2008	36.370,16	12	33.746,11	10	37.815,99	23	35.629,95	
26.09.2008	36.556,61	12	33.051,76	10	36.827,63	23	35.832,73	
03.10.2008	34.553,00	12	32.057,66	10	35.845,76	23	33.893,61	
10.10.2008	28.495,93	12	26.070,06	10	28.991,08	23	27.741,73	
17.10.2008	25.870,17	12	26.247,39	10	29.739,28	23	24.523,94	
24.10.2008	24.176,68	12	24.601,92	10	27.970,78	23	23.180,22	
31.10.2008	27.832,93	12	26.947,85	10	30.669,97	23	27.863,36	
07.11.2008	26.648,17	12	25.603,09	10	29.069,36	23	25.424,60	
14.11.2008	25.425,26	12	23.746,32	10	26.996,94	23	24.476,09	
21.11.2008	21.965,96	12	20.204,49	10	23.023,03	23	20.748,52	
28.11.2008	25.714,98	12	23.119,07	10	26.414,41	23	24.772,65	

05.12.2008	24.034,70	12	21.198,56	10	24.225,97	23	22.967,05	
12.12.2008	24.936,93	12	21.476,97	10	24.530,87	23	23.921,10	
19.12.2008	26.205,40	12	21.193,10	10	24.172,30	23	25.847,03	
26.12.2008	26.498,96	12	21.380,31	10	24.405,18	23	26.032,31	
30.12.2008	26.411,09	13	21.448,34	11	24.489,10	23	25.832,75	+ Yapı ve Kredi Bankası
31.12.2008	26.864,07	13	26.864,07	11	25.097,49	23	26.242,37	
02.01.2009	27.005,63	13	22.405,71	11	25.534,25	23	26.465,71	
09.01.2009	26.470,08	13	21.915,61	11	24.975,44	23	25.516,41	
16.01.2009	25.630,96	13	21.029,51	11	23.987,34	23	24.302,20	
23.01.2009	24.781,83	13	19.721,13	11	22.481,18	23	23.298,09	
29.01.2009	26.162,99	14	21.772,17	12	24.878,61	24	24.847,65	+ Vakıf MKYO
30.01.2009	25.934,37	14	21.118,91	12	24.106,96	24	24.545,06	
06.02.2009	26.735,21	14	21.238,89	12	24.260,92	24	25.093,19	
13.02.2009	25.199,53	14	20.351,72	12	23.231,32	24	23.074,93	
20.02.2009	23.579,48	14	19.280,89	12	22.131,73	24	21.267,79	
27.02.2009	24.026,59	14	20.027,24	12	23.060,58	24	22.011,10	
06.03.2009	23.220,02	14	19.812,27	12	22.773,41	24	21.141,57	
13.03.2009	23.615,25	14	19.542,27	12	22.436,99	24	22.041,73	
20.03.2009	24.038,89	14	19.643,65	12	22.516,51	24	22.525,90	
27.03.2009	25.697,25	14	20.739,88	12	23.812,29	24	24.880,52	
03.04.2009	26.631,06	14	20.363,67	12	23.295,34	24	26.020,26	
10.04.2009	28.838,28	14	21.935,16	12	25.026,67	24	28.408,06	
17.04.2009	29.445,96	14	22.495,54	12	25.713,92	24	29.050,94	
24.04.2009	29.675,54	14	22.920,37	12	26.241,05	24	29.484,04	
30.04.2009	31.651,81	14	24.203,00	12	27.705,43	24	31.773,14	
08.05.2009	32.805,71	14	25.558,56	12	29.154,64	24	32.872,16	
15.05.2009	33.484,52	14	26.278,22	12	29.871,08	24	33.312,39	
22.05.2009	35.014,50	14	27.668,23	12	31.406,41	24	35.993,72	
29.05.2009	35.002,99	14	27.736,00	12	31.420,09	24	35.545,62	
05.06.2009	34.750,19	14	27.787,30	12	31.430,04	24	34.525,86	
12.06.2009	34.816,71	14	27.868,78	12	31.540,06	24	34.972,77	
19.06.2009	35.819,93	14	28.185,81	12	31.926,47	24	35.850,98	
26.06.2009	36.755,90	14	28.762,95	12	32.206,04	24	37.337,80	
02.07.2009	37.038,21	15	28.981,89	13	32.421,61	25	37.684,02	+ Coca-Cola İçecek
03.07.2009	36.797,55	15	29.237,69	13	32.671,32	25	37.278,66	
10.07.2009	36.780,49	15	28.388,02	13	31.948,51	25	37.325,73	
17.07.2009	37.726,69	15	30.152,96	13	33.921,58	25	38.814,47	
24.07.2009	39.395,38	15	31.098,70	13	35.035,61	25	40.910,07	
31.07.2009	42.641,26	16	33.692,32	14	38.032,05	26	44.860,41	+ Arcelik
07.08.2009	44.767,58	16	35.375,86	14	39.820,83	26	46.670,87	
14.08.2009	44.302,92	16	35.126,74	14	39.564,71	26	46.206,19	
21.08.2009	47.170,07	16	37.424,94	14	42.228,36	26	50.442,82	
28.08.2009	47.559,69	16	38.616,49	14	43.212,08	26	49.849,50	
04.09.2009	45.160,51	16	36.683,30	14	41.157,00	26	47.167,06	
07.09.2009	45.273,98	17	36.996,82	15	41.424,40	27	46.922,89	+ TAV Havalimanları
11.09.2009	46.583,50	17	37.818,48	15	42.946,98	27	48.444,27	
18.09.2009	47.161,22	17	37.874,94	15	43.036,20	27	48.440,81	
25.09.2009	47.624,97	17	38.237,23	15	43.562,22	27	49.190,57	
02.10.2009	46.856,94	17	38.153,57	15	43.265,45	27	48.423,38	
09.10.2009	50.217,50	17	39.249,22	15	44.536,82	27	53.043,12	
16.10.2009	49.790,74	17	40.978,59	15	46.670,47	27	52.269,82	
21.10.2009	51.295,19	18	42.573,12	16	48.558,22	27	54.181,61	+ Türkiye Sınai Kalkınma Bankası
23.10.2009	51.380,65	18	42.581,52	16	48.578,94	27	54.226,84	
30.10.2009	47.184,71	18	39.423,38	16	44.731,09	27	49.259,34	
04.11.2009	47.281,44	19	39.398,80	16	44.550,07	28	49.444,60	+ Dogan Sirketler Grubu Holding
06.11.2009	46.969,89	20	39.278,26	17	44.204,55	29	49.087,49	+ Petkim Petrokimya
13.11.2009	48.441,90	20	39.606,95	17	44.709,05	29	50.631,78	
20.11.2009	45.230,95	20	36.772,01	17	41.398,21	29	46.801,70	
26.11.2009	45.350,17	20	37.684,02	17	42.872,46	29	46.971,46	
04.12.2009	50.101,98	20	41.238,95	17	46.973,48	29	52.859,27	
11.12.2009	49.386,42	20	40.978,64	17	46.470,33	29	51.951,13	
18.12.2009	50.138,45	20	40.710,08	17	46.382,84	29	52.618,02	
23.12.2009	51.162,24	21	41.673,34	18	47.626,07	30	53.809,33	+ Logo Yazılım
25.12.2009	51.661,33	21	41.915,10	18	47.928,25	30	54.545,35	
29.12.2009	51.786,04	22	41.695,61	19	47.627,06	31	54.540,27	+ Is Finansal Kiralama
30.12.2009	51.668,41	24	41.875,29	21	47.543,43	33	54.315,46	+ Turk Telekom ve Turk Prysmian
31.12.2009	52.825,02	24	42.669,96	21	48.478,72	33	55.734,27	
08.01.2010	54.797,90	24	45.014,49	21	51.307,13	33	57.470,50	
15.01.2010	54.005,65	24	44.708,01	21	50.601,32	33	55.772,85	
22.01.2010	53.997,49	24	44.642,62	21	50.653,48	33	55.515,52	
29.01.2010	54.650,58	24	45.412,24	21	51.612,35	33	55.975,36	
05.02.2010	51.454,89	24	42.823,08	21	48.222,45	33	53.069,64	
12.02.2010	51.063,82	24	43.316,14	21	48.996,88	33	52.669,58	
19.02.2010	53.318,97	24	44.496,64	21	50.401,09	33	55.356,78	
26.02.2010	49.705,49	24	42.165,86	21	47.835,91	33	51.718,74	
05.03.2010	52.625,63	24	43.831,13	21	49.760,85	33	54.989,22	
12.03.2010	52.232,99	24	43.835,66	21	49.830,45	33	54.633,12	
15.03.2010	51.971,37	25	43.842,57	22	49.712,69	34	54.339,93	+ Turcas Petrol
19.03.2010	53.436,96	25	44.624,90	22	50.566,03	34	56.089,19	
26.03.2010	56.610,66	25	46.634,72	22	53.090,43	34	60.369,52	
02.04.2010	58.059,86	25	47.808,88	22	54.436,86	34	61.828,70	
09.04.2010	59.185,30	25	47.832,40	22	54.530,57	34	63.265,69	
16.04.2010	58.223,53	25	48.488,69	22	55.421,97	34	62.046,75	
22.04.2010	58.338,36	25	49.531,76	22	56.717,02	34	61.986,61	

Comparison of the Performance of ISE Corporate Governance
Index against Performances of Two Newly Created Indices

81

30.04.2010	58.959,10	25	50.087,80	22	57.440,64	34	62.557,50	
07.05.2010	52.686,97	25	45.088,21	22	51.582,83	34	56.161,79	
14.05.2010	55.747,88	25	47.364,67	22	54.319,01	34	59.958,55	
21.05.2010	54.111,60	25	46.543,16	22	53.181,59	34	58.432,39	
28.05.2010	55.233,68	25	45.858,00	22	52.283,05	34	59.357,28	
04.06.2010	54.612,93	25	45.913,57	22	52.502,89	34	58.600,45	
10.06.2010	54.861,83	26	46.133,47	23	52.919,73	35	59.165,70	+ Park Elektrik
11.06.2010	55.131,63	26	46.442,30	23	53.313,94	35	59.545,24	
18.06.2010	57.034,47	26	47.594,32	23	54.547,62	35	61.874,85	
25.06.2010	55.864,24	26	47.395,11	23	54.454,51	35	60.668,50	
01.07.2010	54.534,28	27	46.302,43	24	53.258,35	36	59.112,44	+ Aygaz
02.07.2010	55.636,45	27	46.807,83	24	53.827,34	36	60.684,84	
09.07.2010	57.150,90	27	48.054,78	24	55.134,31	36	62.542,18	
16.07.2010	57.729,36	27	48.192,20	24	55.255,61	36	63.527,26	
23.07.2010	59.299,53	27	49.706,44	24	57.061,22	36	65.390,80	
30.07.2010	59.866,75	27	50.465,71	24	57.877,26	36	65.829,74	
06.08.2010	59.753,02	27	51.383,84	24	59.179,32	36	65.047,00	
13.08.2010	58.479,86	27	49.813,18	24	57.428,11	36	63.190,16	
20.08.2010	58.749,93	27	49.870,26	24	57.578,65	36	63.667,20	
27.08.2010	59.345,93	27	50.772,16	24	58.676,25	36	64.255,84	
03.09.2010	60.998,84	27	51.708,07	24	59.755,94	36	66.038,01	
08.09.2010	60.608,08	27	51.133,35	24	59.080,86	36	65.768,42	
17.09.2010	63.862,03	27	53.928,28	24	62.425,73	36	69.382,31	
24.09.2010	64.241,48	27	54.278,81	24	62.642,18	36	69.624,33	
01.10.2010	64.882,72	27	55.417,62	24	64.089,94	36	70.237,49	
08.10.2010	67.217,24	27	57.104,31	24	66.203,80	36	72.910,43	
15.10.2010	70.101,22	27	58.792,05	24	67.897,36	36	76.661,98	
22.10.2010	71.006,82	28	58.907,32	25	68.237,21	36	77.262,11	+ Albaraka Turk
28.10.2010	68.760,46	28	58.163,94	25	67.368,56	36	74.565,71	
05.11.2010	70.779,15	28	59.267,84	25	68.376,61	36	76.964,46	
09.11.2010	71.543,26	29	59.826,25	26	68.886,24	37	77.858,91	+ Yazicilar Holding
12.11.2010	69.553,08	29	59.480,66	26	68.453,38	37	74.975,76	
15.11.2010	69.998,07	29	59.764,19	26	68.787,08	37	75.276,69	
26.11.2010	66.147,74	29	55.467,35	26	63.804,56	37	70.711,53	
03.12.2010	66.860,19	29	57.539,35	26	66.310,10	37	72.201,81	
10.12.2010	64.759,02	29	55.994,08	26	64.260,44	37	69.374,15	
17.12.2010	63.524,18	29	56.046,30	26	64.420,89	37	67.077,36	
24.12.2010	66.267,34	29	57.899,25	26	66.519,13	37	70.350,01	
29.12.2010	66.719,67	31	57.832,43	28	66.283,98	39	70.551,49	+ Ihlis Holding ve Ihlis Ev Aletleri
31.12.2010	66.004,48	31	57.152,14	28	65.574,75	39	69.505,57	
07.01.2011	68.770,29	31	60.306,54	28	69.155,85	39	72.440,10	
14.01.2011	67.879,62	31	60.210,71	28	69.099,49	39	71.162,94	
21.01.2011	65.927,31	31	58.877,81	28	67.536,29	39	68.463,16	
28.01.2011	63.211,27	31	56.408,01	28	64.651,02	39	65.048,91	
04.02.2011	65.309,00	31	57.317,84	28	65.396,20	39	68.301,54	
11.02.2011	64.730,35	31	57.586,03	28	65.624,37	39	67.193,79	
18.02.2011	65.985,76	31	57.475,59	28	65.168,58	39	68.544,18	
25.02.2011	61.367,34	31	54.867,19	28	62.429,90	39	64.523,18	
02.03.2011	58.664,24	32	53.956,39	29	61.368,95	40	61.492,34	+ Dogus Otomotiv
04.03.2011	61.112,83	32	55.118,42	29	62.700,97	40	63.402,53	
11.03.2011	63.781,67	32	56.542,22	29	64.365,06	40	66.630,60	
18.03.2011	63.839,27	32	57.241,67	29	65.111,39	40	66.594,79	
25.03.2011	64.247,00	32	58.431,15	29	66.556,91	40	66.803,43	
01.04.2011	65.714,40	32	60.914,98	29	69.470,16	40	68.148,15	
08.04.2011	68.093,26	32	61.851,57	29	70.689,66	40	71.039,43	
15.04.2011	68.450,46	32	62.194,96	29	71.139,57	40	71.594,07	
22.04.2011	68.691,77	32	62.788,10	29	71.859,71	40	71.370,34	
29.04.2011	69.250,14	32	63.773,18	29	73.033,95	40	71.825,31	
06.05.2011	68.240,93	32	62.256,50	29	71.291,05	40	70.994,21	
13.05.2011	64.585,22	32	58.642,26	29	67.211,77	40	66.540,69	
20.05.2011	63.298,58	32	58.098,91	29	66.738,00	40	65.079,88	
27.05.2011	62.407,42	32	57.173,50	29	65.739,58	40	64.139,03	
03.06.2011	62.806,94	32	57.675,87	29	66.562,59	40	65.136,87	
10.06.2011	63.700,30	32	58.175,38	29	67.177,89	40	66.678,69	
17.06.2011	61.716,68	32	55.856,94	29	64.574,18	40	64.123,90	
24.06.2011	62.072,64	32	56.300,42	29	65.184,50	40	65.003,44	
29.06.2011	63.002,88	33	57.471,85	30	66.475,54	41	65.797,72	+ Mensa Sinai
01.07.2011	63.264,51	33	57.765,06	30	66.795,82	41	66.063,67	
08.07.2011	63.596,17	33	57.995,43	30	67.167,18	41	66.487,40	
15.07.2011	62.635,13	33	57.499,34	30	66.472,76	41	65.392,69	
22.07.2011	59.802,32	33	54.468,80	30	63.095,64	41	62.189,82	
29.07.2011	62.295,68	33	56.044,25	30	64.958,61	41	64.985,10	
05.08.2011	56.265,52	33	49.489,32	30	57.725,58	41	58.141,38	
12.08.2011	52.188,65	33	46.925,88	30	54.570,85	41	54.203,90	
19.08.2011	53.061,74	33	48.486,39	30	56.550,95	41	55.495,69	
26.08.2011	53.707,56	33	47.890,60	30	55.811,94	41	55.797,65	
02.09.2011	55.375,28	33	49.320,54	30	57.531,68	41	57.548,07	
09.09.2011	55.902,98	33	50.086,31	30	58.421,05	41	58.487,08	
16.09.2011	57.896,50	33	51.545,68	30	60.119,49	41	60.614,89	
23.09.2011	56.323,38	33	49.376,47	30	57.637,18	41	58.801,30	
30.09.2011	59.693,43	33	53.217,09	30	62.269,63	41	63.589,83	
07.10.2011	57.338,78	33	52.081,44	30	60.933,62	41	60.034,85	
14.10.2011	59.300,29	33	52.451,59	30	61.283,40	41	61.973,18	
21.10.2011	56.792,34	33	51.555,05	30	60.314,75	41	58.896,48	

28.10.2011	57.042,36	33	52.170,81	30	61.118,28	41	58.589,43	
04.11.2011	56.180,24	33	51.486,51	30	60.247,42	41	58.133,05	
11.11.2011	56.201,45	33	51.129,93	30	59.847,21	41	58.118,88	
18.11.2011	54.473,90	33	49.211,25	30	57.591,21	41	55.645,76	
25.11.2011	51.071,22	34	46.699,45	31	54.821,78	42	52.389,84	+ Pinar Sut
02.12.2011	54.769,25	34	50.212,77	31	59.004,49	42	56.455,57	
05.12.2011	55.195,81	35	50.610,40	32	59.419,81	43	56.998,20	+ Egeil&Co Yatirim
09.12.2011	53.834,91	35	49.898,95	32	58.571,72	43	55.437,34	
16.12.2011	51.665,78	35	48.043,57	32	56.436,84	43	53.326,20	
20.12.2011	52.126,94	36	48.294,99	33	56.765,75	43	53.510,27	+ T. Halk Bankasi
23.12.2011	51.948,62	36	48.496,75	33	56.957,17	43	53.254,03	
26.12.2011	52.517,25	37	48.840,25	34	57.354,49	44	53.774,59	+ Is Yatirim Menkul Degerler
29.12.2011	52.053,62	38	48.913,44	35	57.488,45	45	53.565,03	+ Global Yatirim Holding
30.12.2011	51.266,62	38	48.337,81	35	56.786,59	45	52.850,32	