



Yirmi Beşinci Yıl
Twenty Fifth Year

**Financial Reporting for the Repo Transactions and
the Impact of Proposed Amendments in IAS 39 and IFRS 7**
İhsan Uğur Delikanlı

**Investigating Investment Preferences of Institutional
Investors Toward ISE Companies**
Serkan Yılmaz Kandır

**The Effect of Foreign Investors on Security Markets:
The Case of Istanbul Stock Exchange**
Gülzar Kurt Gümüş

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Contact Address: İMKB (ISE), Strategy Development and Research Department,

Reşitpaşa Mah. Tuncay Artun Cd. Emirgan 34467, Istanbul / TURKEY

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

Internet web site: <http://www.ise.org>

E-mail: saadet.oztuna@imkb.gov.tr

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 - Books with more than three authors:
²Mendenhall, W., et al., "Statistics for Management and Economics," Sixth Edition, WPS Kent Publishing Company, Boston, 1989, p.54.
 - Articles:
³Harvey, Campbell R., "The World Price of Covariance Risk," The Journal of Finance, Vol.XLVI, No.1, March 1991, pp. 11-157.
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Reşitpaşa Mah., Tuncay Artun Cad.
Emirgan 34467 Istanbul-TURKEY
Tel: +90 212 298 21 71 Fax: +90 212 298 21 89

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FINANCIAL REPORTING FOR THE REPO TRANSACTIONS AND THE IMPACT OF PROPOSED AMENDMENTS IN IAS 39 AND IFRS 7

İhsan Uğur DELİKANLI*

Abstract

Financial reporting of the repo and reverse repo transactions is assessed in this study taking into account international accounting and financial reporting standards. Firstly, the related principles envisaged in IAS 32, IAS 39 and IFRS 7 are considered and then the question of whether financial reporting practices of the banks and the intermediary institutions operating in Turkey are compliant with these principles or not is searched. Lastly, proposed amendments regarding the derecognition of the financial assets in IAS 39 and IFRS 7 by IASB are assessed in order to develop answers for the questions of what they will change the financial reporting of repo and reverse repo transactions how they will effect the accounting practices of the banks and intermediary institutions and repo and reverse repo market. It looks that some grey areas in the proposed amendments need the reassessment.

I. Introduction

Repurchase transaction (also known as a repo) is an agreement between two parties whereby one party sells the other a security at a specified price with a commitment to buy the security back at an agreed price at some later date. Repos are classified as a money-market instrument and are usually used to raise short-term capital by the banks and intermediary institutions. On the other hand, reverse repurchase transaction (also known as reverse repo) has an investment feature as it is the purchase of securities with an agreement to sell them at a higher price at some later date.

* İhsan Uğur Delikanlı, Banking Regulation and Supervision Agency, Atatürk Bulvarı, No: 191, B Blok 06680, Kavaklıdere, Ankara.

Tel. (0312) 455 65 28 E-Mail: idelikanli@bddk.org.tr

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Keywords : Repurchase Agreement (Repo), Reverse Repo, IAS 39, IFRS 7.

JEL Classification : M41, M48, G21, G24.

Repo and reverse repo transactions in Turkey can only be undertaken by the banks and the intermediary institutions. Those institutions are obliged to apply Turkish Accounting and Financial Reporting Standards, which are in full compliance with the International Accounting and Financial Reporting Standards as the Turkish translation of them, and closely follow the developments in this regard.

The principles for the financial reporting of repo and reverse repo transactions are determined by International Accounting Standard (IAS) N. 32- “Financial Instruments: Presentation”, IAS N.39- “Financial Instruments: Recognition and Measurement” and International Financial Reporting Standard (IFRS) N.7- “Financial Instruments: Disclosures”. But, the International Accounting Standards Board (IASB) has issued an Exposure Draft on derecognition of financial assets and liabilities and proposed amendments to IAS 39 and IFRS 7. If these proposals are accepted, the need of revision for the financial reporting of repo and reverse repo transactions will occur.

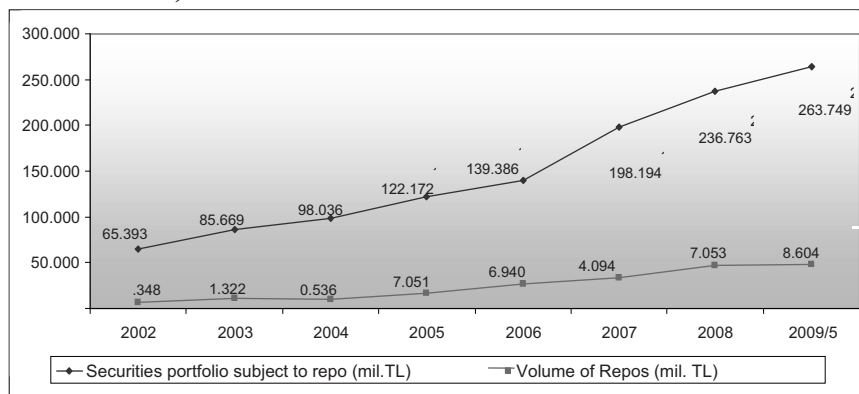
In this study, it is aimed to assess the effect of IASB proposals introduced in its exposure draft on repo transactions. In the first part, Turkey’s regulatory framework for repo and reverse repo transactions is discussed. The second part will be dedicated to the questions of what are the general principles of IAS 39 and IFRS 7 for repo transactions and whether accounting practices of the Turkish banks and the intermediary institutions are compatible with those standards and there are differences between these institutions or not. In the third part, the IASB’s proposals and their possible impact will be assessed.

II. Turkish Regulations on Repo Transactions

Graph 1 shows the development in total amount of Turkish banks’ securities portfolio that can be subject to repo transactions and those transactions between 2002 and May 2009. It is to be seen that the securities used for repo transactions was only the 9.7 percent of the banks’ securities portfolio. But, this ratio has risen to 18.4 percent by the end of May 2009.

Total amount of short-term funding through repo transactions has reached 6.3 percent of banking sector’s balance sheet by the end of May 2009. According to Istanbul Stock Exchange (ISE)’s daily bulletin, by July 2009, daily volume of repo transactions based on bonds and bills market has exceeded 11 billion TL.

Graph 1: Amount of Total Banking Securities Portfolio Subject to Repo and Volume of Repo Transactions by the Turkish Banks (2002–May 2009)



Source: BRSA (2009); (Total amount of “Securities portfolio subject to repo” was calculated by extracting the amount of shares, mutual funds participation certificates, liquidity notes issued by Central Bank, credit link notes and other securities from the total amount of securities using numbers released in “6.2.1. Securities” part of Monthly Bulletin of BRSA and finally the amount of securities used in repo transactions was added).

2.1. Regulations of Capital Market Board

Article 30 of Capital Markets Law defines repo and reverse repo transactions as capital market instruments. According to article 22 of the same Law, Capital Markets Board has the authority and duty to regulate the agreements for the purchase or sale of capital market instruments with a commitment to resell or repurchase; to adopt market transaction rules related to these contracts; and to determine operating rules and principles related to these transactions.

2.1.1. Framework

Principles and procedures regarding repo and reverse repo transactions are regulated by Capital Markets Board (CMB)’s Serial:V N.7- Communiqué on Repurchase and Reverse Repurchase Agreements.

Repo and reverse repo transactions can only be undertaken by the banks and the intermediary institutions operating within the framework of capital market legislation, authorized to intermediate in buying and selling of previously issued capital market instruments and having capital no less than the amount required in CMB’s capital adequacy regulations.

Securities that can be subject to repo and reverse repo transactions are exclusively as follows: Government bonds, Treasury bills, bank bills and bank guaranteed bills, debt securities issued by Privatization Administration of Turkey, debt securities issued by local administrations and their related administrations, undertakings and establishments in accordance with the Capital Markets Law, asset backed securities, debt securities registered with the Stock Exchange or traded on securities exchanges or other organized markets. The common feature of those securities is that they are financial instruments based on interest rates. The maturity of repo and reverse repo transactions can be determined freely with the condition that the maturity does not exceed the redemption date of the related securities. The interest rate to be charged in repo and reverse repo transactions can also be determined freely by the parties.

However, in order to engage in repo transactions, a written contract engagement regulating the general principles of transactions must be concluded between the parties and the security subject to repo and reverse repo transaction must be “deposited (pledged)” by the bank or intermediary institution in accordance with the regulations to be made by the Central Bank of Republic of Turkey (TRCB). But, deposit requirement is not required for Government Domestic Debt Instruments purchased through reverse repo that are subject to outright sale.

The securities subject to repos are not delivered physically to the purchaser. The transactions are realized in book entry form. The securities purchased through reverse repos can be resold through repo transaction in the period between the trading date and due date with the condition that the maturity does not exceed the maturity of reverse repo. Institutions authorized as market maker by the Undersecretariat of Treasury can trade in Government Domestic Debt Instruments purchased through reverse repo transaction, on ISE’s Bonds and Bills Market.

2.1.2. Legal Relationship

Although repo or reverse repo transaction is accepted as a mixed transaction which includes both collateralized loan and exchange of security in US, it is described as a mixed transaction which includes both certain sale/buying and obligation of buy/sale back in Turkey (Yetim, 1997).

The ownership of the security is transferred to the purchaser in the transaction of repo. And also, its returns belong to purchasing person or institution, if there is no contrary provision in the framework agreement (Tanör,

1999). On due date, the ownership of the security shall be transferred back to the bank or intermediary institution with the payment of the predetermined price of the security.

In the reverse repo transaction, there exists a legal relationship in the form of which transfers the ownership of security to the bank or intermediary institution; returns of the security belong to related institution if there is no contrary provision in the framework agreement and on due date, the ownership of the security shall be transferred back to the counter party with the payment of the pre-determined price of the security.

In this respect, either in the transaction of repo or in the transaction of reverse repo, basic principle is the transfer of the ownership of the security to the other party. In other words, these transactions are based on the transfer of the ownership.

The ownership right is one of the types of private right which arise from private law and clarifies the rights of the real persons to each others. And it is classified in the group of property rights as mental rights and tangible, receivable rights measured by the money (Öztañ, 2004). The ownership right is independent and transferable and not dependent on any other right. In addition, there are some judgements about the ownership at the first part of the Commodity Law which constitutes the forth book of the Turkish Civil Law. Although there isn't any definition in these judgements, it is accepted that the ownership right can be set up on a commodity and is a sort of the real rights which can be alleged to everyone, contains the power that enables its owner to control directly and to use, to benefit from its yield, to deplete –to transfer the commodity to another person- to constitute another limited-real right on the commodity, to destroy (Öztañ, 2004). In the decision of the Turkish Constitutional Court dated 21/6/1989 and main numbered 1088/34 and 1989/26 by saying, *“Although it was mentioned openly that everyone has ownership right, there isn't any explanation of the characteristic of this right. Therefore it must be displayed by utilizing the rules in the laws and doctrine. In this respect, the ownership right gives the power which enables its owner to use a commodity however he wants or to benefit from its yields or to dispose (to transfer, to change the figure, to consume and even to abolish) it by the condition of without damaging the others' rights and conforming the limits designated by the laws.”* it was emphasized that ownership right had these accepted characteristics in the doctrine (Nazalı and Demirci, 2009).

Because of having the ownership right of the security for a foreseen period to buy or sell-back by repo or reverse repo transaction, it is accepted in the doctrine that the related party will use the right stemming from it. But, if there is a specific provision in the framework agreement, the party who will have security's ownership right cannot be given permission to benefit from its returns.

2.2. Regulations of Central Bank of Turkish Republic

The principles and procedures determining the maximum amount of the repo and reverse repo transactions which can be implemented by the banks and intermediary institutions and how the securities subject to these transactions will be deposited are set by TRCB.

2.2.1. Transaction Limits

The net repo remainder, the difference between the repo remainder and the reverse repo remainder of the bank or intermediary institution, is limited to 20 times of their own equities. And the net repo remainder of the same real or natural person is limited to 2 times of the equity of the related institution. But mentioned limits are not implemented for the repo and reverse repo transactions actualized in ISE or with TRCB in this scope.

2.2.2. The Rules for the Pledge of the Securities Subject to Transactions

It is compulsory that the securities subject to repo and reverse repo transactions which will be traded outside of ISE by the banks with their individual clients, are deposited by them in Istanbul branch of TRCB; government bonds and treasury bills which would be subject to repo or reverse repo transactions by the banks at ISE and other securities subject to the same transactions at ISE or outside are required to be deposited in the custody of ISE Settlement and Custody Bank Inc. (Takasbank) on behalf of each bank's own account (Repo Deposit- Reverse Repo Deposit).

For the intermediary institutions, it is compulsory to deposit the securities subject to the repo and reverse repo transactions in the custody of Takasbank without making any distinction regarding whether it is performed at ISE or not.

Takasbank keeps the securities given to its custody because of the repo and reverse repo transactions in an account at the Istanbul Branch of TRCB.

To determine the nominal values of the securities which will be deposited by the banks and brokerage institutions depending on the repo transactions performed with the individual clients, daily values published at the Official

Gazette by TRCB on the transaction day are used for the government bonds and treasury bills, discounted (50 %) market prices are taken into account for the other securities.

The daily values published at the Official Gazette are calculated by forming a regression equation between the related securities' yield and maturity to estimate its yield and then, estimated value is put into the present value formula. The values calculated by this approach may differentiate a little bit from the prices realized in the market on transaction day even the average of these prices (Ersel, 1992). It is also confirmed in the negotiations with TRCB competents, that the same method is used currently. For instance, the price of Treasury Bill tendered for a contract on 9.3.2009 and which compound interest rate's is 13,1 % (Turkish Treasury, 2009) maturity of 9.9.2009, description of TRB090909T11, the amount of 100 TL, is published as TL 98,834 in the Official Gazette on 19.7.2009. The redeemed cost value for the same day is calculated as TL 98,168 by using the formula of $\text{capital}/(1+[(\text{Interest rate} \times \text{maturity})/365])$ on said interest rate. As can be seen, the prices of the securities published by TRCB everyday reflects the very close value to market price.

There isn't any requirement to deposit additional security because of the possible changes in the daily values published at the Official Gazette during the maturity of repo. However, it is required to deposit (pledge) additional security taking into account the daily value of the security subject to repo published at the Official Gazette on the date of when its coupon payments are received by the related bank or brokerage house during the repo maturity.

If the securities cannot be deposited by the banks or intermediary institutions for the repo transactions as much as required by TRCB, the amount over the deposited securities is to be assessed as time deposit.

The nominal value of the securities to be deposited for the repo transactions between the banks and intermediary institutions is determined by considering the conditions of agreements.

III. Financial Reporting of the Repo and Reverse Repo Transactions and Turkish Case

The security subject to repo and reverse repo transactions are considered as financial asset for the party who gets it and financial liability for the party who issued it. Financial assets and liabilities are defined as financial instruments in IAS 32. IAS 39 and IFRS 7 respectively determines the principles of accounting and subsequent measurement and the issues which should be disclosed to the

public. But, IASB proposed amendments to the principles for derecognition of financial instruments mentioned in IAS 39 and IFRS 7. This is why, before the assessment of the impact of these amendments it is needed to look at principles set out in IAS and IFRS and to assess whether the existing accounting practices for repo and reverse repo transactions of the banks and intermediary institutions in Turkey are compatible with them or not.

3.1. The Principles of IAS 32 and 39 for Repo and Reverse Repo Transactions

Repo or reverse repo transactions should be considered as a type of financial instrument according to the paragraph AG7 of Application Guidance annexed to IAS 32 which states that a contractual right or contractual obligation to receive, deliver or exchange financial instruments is itself financial instrument. Paragraph 19 of IAS 32 defines such obligations as financial liability if an entity does not have an unconditional right to avoid delivering cash or another financial asset to settle a contractual obligation. It is given as an example of financial liability for a contractual obligation that is conditional on a counterparty exercising its right to redeem similar to repo transactions. So, the funds raised through repo transactions should be considered as financial liability as well.

The point needed to be clarified is that whether the securities subject to repo transactions will be derecognized in the financial statements or not. This would constitute an answer for a similar question of whether the securities bought by reverse repo transactions will be recognized among the assets.

It is seen that paragraph 17 of IAS 39 sets the conditions for the derecognition of the securities subject to repo transactions and defines the financial assets not only in IAS 32 but also in IAS 39 and IFRS 7. These are the expiration of contractual rights to the cash flow from the financial asset and the conditions set out in paragraph 18 and 19 of the standard, Some of these conditions are the transfer of the contractual rights to receive the cash flows of the financial asset and the existence of contractual obligation to pay the cash flows to one or more recipients although retaining the contractual rights to receive the cash flows of the financial asset.

On the other hand, paragraph 20 of IAS 39 requires the evaluation of the extent of whether it is continued to be retained the risks and rewards of ownership of the financial asset. The financial asset should be continued to be recognized if all risks and rewards are retained substantially resulting from its ownership. Derecognition principle will be applied if all the risks and rewards of

ownership of the financial asset are transferred substantially and any rights and obligations created or retained in transfer should be recognized separately as asset or liability. It is suggested to make an assessment whether the control of financial asset is retained or not if it is not possible to determine whether all the risks and rewards of ownership of financial asset are transferred or retained substantially. The transferee's ability to sell the financial asset would be considered as in the transfer of securities subject to repo and reverse repo transactions. Paragraph 23 of IAS 39 states that if the transferee has the right the practical ability to sell the asset in its entirety to an unrelated third party and is able to exercise that ability unilaterally and without needing to impose additional restrictions on the transfer, the party has not retained control, in all other cases the entity has retained control.

Paragraph 29 of IAS 39 requires that the transferred asset should be continued to be recognized in its entirety and received amount should be considered as financial liability if a transfer does not result in derecognition because of retaining substantially all the risks and rewards of ownership of the transferred asset. In subsequent periods, any income on the transferred asset and any expense incurred on the financial liability should also be recognized.

Among the examples for retaining substantially all the risks and rewards of ownership, a sale and repurchase transaction where the repurchase price is a fixed price or the sale price plus a lender's return is given in paragraph AG 40 of Application Guidance annexed to IAS 39. Similar to this paragraph, repurchase agreements and securities lending, repurchase agreements and securities lending-assets that are substantially the same are given as the examples for the application of derecognition principle in paragraph AG 51 of Application Guidance annexed to IAS 39. According to these examples, if a financial asset is sold under an agreement to repurchase it at a fixed price or at the sale price plus a lender's return or is loaned under an agreement to return it to the transferor it should not be derecognized because of the fact that the transferor retains substantially all the risks and rewards of ownership. This is in fully compliant with the paragraph 35 of Framework which clarifies the principle of substance over form giving the example that the reporting of a sale would not represent faithfully the transaction entered into if an entity continues to enjoy the future economic benefits embodied in the asset which had been sold an to another entity. Transferor has to reclassify the asset in its statement of financial position as a loaned asset or repurchase receivable if the transferee obtains the right to sell or to pledge the asset.

It is shown that the funds raised through repo transactions should be classified as financial liability, the securities subject to repo transactions should be continued to be recognized in the financial statements. But, it looks that an appropriate practice for Turkey will be that the securities shall be classified in the financial statements as a different group of assets resulting from financial assets subject to repo transactions. Because, as mentioned in the legal relationship of repo and reverse repo transactions, transferee has the right to use for a new repo transaction or pledge the security until the end of maturity. Ramirez (2007) has also the same opinion that the securities subject to repo transactions should be reclassified among the collaterals if the transferee is able to sell or pledge them. The party who gets the ownership of security through the reverse repo transaction shall recognize this transaction as a receivable from the reverse repo transaction instead of as financial asset in its financial statements.

3.1.1. Booking of Repo and Reverse Repo Transactions by the Banks

Repo and reverse repo transactions had been considered as final sale and so, they were booked as an off-balance sheet account until February of 2002. They have been accepted as a type of collateralized obligation or collateralized lending because of the amendment in Uniform Accounting Plan for the Banks and booked in the accounts opened among the assets and liabilities of the balance sheet since that date.

Repo transaction,		
----- /-----		
030 Securities held for trading		xxxx
09 Subject to repo transaction		
030 Securities held for trading		xxxx
----- /-----		
----- /-----		
986 Receivables from Repo and Reverse Repo Trans.		xxxx
00 Receivables from Repo Transactions		
(The amount of commitment to buy back)		
988 Liabilities for Repo and Reverse Repo Trans.		xxxx
00 Liabilities for Repo Transactions		
----- /-----		

The funds raised through repo transactions,

----- /-----		
010	Cash	xxxx
	332	Funds borrowed by Repo Transactions
		xxxx
----- /-----		

Pledge of the securities subject to repo transaction (using its face value),

----- /-----		
998	Other Off-Balance Sheet Acc. Liabilities	xxxx
	996	Other Off-Balance Sheet Acc. Receivables
		Securities Portfolio
		xxxx
----- /-----		
----- /-----		
982	The Assets given for Custody and Pledge	xxxx
	984	The Assets given for Custody and Pledge
		xxxx
----- /-----		

Are booked as shown (Yıldırım, 2008).

The principal and interest which will be paid at the maturity date of repo transaction

----- /-----		
332	Funds borrowed by Repo Transactions	xxxx
628	Interest paid for Repo Transactions	xxxx
	010	Cash
		xxxx
----- /-----		

are booked as such (tax obligations are omitted) and reverse bookings shown for the repo transaction itself and the pledge of the security at the beginning of the transactions are made (Yıldırım, 2008).

For the repo transactions not due at the end of each monthly period

A gain arising from a change in the fair value of the securities subject to repo transactions,

----- /-----		
222	Other Interest and Income Discounts	xxxx
	The Securities subject to Repo Transactions	xxxx
580	Interest Gains from the Securities	xxxx
----- /-----		

Interest expense for the funds borrowed by repo transactions,

----- /-----		
628	Interest paid for Repo Transactions	xxxx
360	Interest and Expense Discounts	xxxx
	Interest Expense Discount for Repo Trans.	
----- /-----		

is taken to the financial statements by these records as shown (Yıldırım, 2008). But, the amount of gains booked in account number 220 is shown in the financial statements by adding to the amount of similar group of securities..

For the reverse repo transaction,

The funds given,

----- /-----		
050	Receivables from Reverse Repo Trans.	xxxx
010	Cash	xxxx
----- /-----		

Commitment to re-sell (using the amount of commitment),

----- /-----		
986	Receivables from Repo and Reverse Repo Trans.	xxxx
01	Receivables from reverse Repo Transactions	
988	Liabilities for Repo and Reverse Repo Trans.	xxxx
01	Liabilities for Reverse Repo Transactions	
----- /-----		

The security gained its ownership through reverse repo transaction (considering its face value),

----- /-----		
996	Other Off-Balance Sheet Accounts	xxxx
	The securities subject to Reverse Repo Trans.	
998	Other Off-Balance Sheet Accounts	xxxx
----- /-----		

are booked as such (Yıldırım, 2008). At the maturity date of reverse repo transaction, the amount which will be received is booked as below (tax obligations are omitted).

----- /-----		
010	Cash	xxxx
050	Receivables from Reverse Repo Trans.	xxxx
576	Interest Gains from Reverse Repo Trans.	xxxx
----- /-----		

Reverse bookings are made for the commitment to re-sell and the security gained its ownership through reverse repo transactions.

For the reverse repo transactions not due at the end of each monthly period, the amount of the gain for the period is taken to the financial statements as below similar to the repo transactions.

----- /-----		
222	Other Interest and Income Discounts	xxxx
	Reverse Repo Transactions	
576	Interest Gains from Reverse Repo Trans.	xxxx
----- /-----		

These records are compatible with the principles set by IAS 32 and 39. But, the securities subject to repo transactions should be booked and shown under the heading of a different item among the assets, like the receivables from the repo transactions, instead of booking them under the heading of same securities before the transaction like held for trading of available for sale.

3.1.2. Booking of Repo and Reverse Repo Transactions by the Intermediary Institutions

Article 13 of Communiqué On Repurchase and Reverse Repurchase Agreements Serial V, Number 7 issued by CMB specifically sets the principle for the financial reporting of repo and reverse repo transactions. According to that regulation, the commitment and liabilities stemming from the transactions shall be monitored as a separate item under assets and liabilities of the balance sheet and these commitments and liabilities shall be explained in detail in the footnotes as regards their maturity. It has been seen that repo and reverse repo transactions were accepted as final sale or purchase of the securities. Explanation 140 of Financial Accounting Standards Board suggests to assess repo transaction as a final sale if there is no any contractual obligation to protect the party who will transfer the ownership of the security when the other party does not transfer it at the maturity date because of the increase in its value (Stewart and Gren, 2007).

Accounting practices of the intermediary institutions are set by Communiqué On Accounting Plan for The Intermediary institutions and The Procedures for Its Implementation Serial XI, Number 7 by CMB.

Repo transactions which will be entered by the intermediary institutions on behalf of themselves

----- /-----	
Customer	xxxx
5000 Domestic Sales Security	xxxx
----- /-----	

The amount of active weighted average cost of the security

----- /-----	
5200 Cost of Domestic Sales Security	xxxx
1100 Securities Portfolio Security	xxxx
----- /-----	

The commitment to re-pay at the maturity of repo transaction

----- /-----	
9310 Debtors of Repo Commitments	xxxx
Transaction Maturity	
9810 Creditors of Repo Commitments	xxxx
Transaction Maturity	
Customer / Intermediary Institution Name	
----- /-----	

Pledge of the security subject to repo transaction (using its face value)

----- /-----	
Creditors of the Custody Assets	xxxx
Portfolio of the Institution	
Creditors of the Custody Assets	xxxx
Customer Name	
Type of Security	
----- /-----	

Are taken to financial statements as shown (TSPAKB, 2008; TSPAKB, 2009).

At the maturity date of repo transaction the security subject to repo transaction is taken to financial statements booking as below and reverse bookings for the amount of commitment to re-pay and the pledge of the security are made.

----- /-----	
1100 Securities Portfolio	xxxx
Type of security	
Customer	xxxx
----- /-----	

Reverse repo transaction,

1100	Securities Portfolio	xxxx
	Type of Security	
	Customer	xxxx

The amount of commitment to re-sell the security at the maturity date of transaction,

9320	Debtors of reverse Repo Transactions	xxxx
	Transaction Maturity	
	Customer / Intermediary Institution Name	
9820	Creditors of Reverse Repo Transactions	xxxx
	Transaction Maturity	

The security subject to reverse repo transaction (using its nominal value),

	Creditors of the Custody Assets	xxxx
	Customer / Intermediary Institution	
	Creditors of Custody Assets	xxxx
	Portfolio of Institution	

are taken to financial statements through as such (TSPAKB, 2008: TSPAKB, 2009). But it is suggested to book the security subject to reverse repo transaction as receivable from the related party (Akin, 2005). This is fully compliant with IAS 39 as did by the banks.

At the maturity date of reverse repo transaction, account of “Domestic Sales – Type of Security” is credited and customer account is debited similar to the booking of repo transaction. Also, active weighted average cost of the securities subject to reverse repo transaction is debited to account of “Cost of Domestic Sales – Type of Security”, “Securities Portfolio – Type of Security” account is

credited in the same amount of cost. (TSPAKB, 2008: TSPAKB, 2009). Reverse bookings for the commitments to re-sell and the security which will be transferred are made.

It looks that intermediary institutions would book repo transactions not compliant with existing IAS 39 principle of that the securities subject to repo transactions shall not be derecognised. Also, it has been observed that intermediary institutions do not show the funds raised through repo transaction in spite of IAS 32 principle stating that the funds borrowed by the repo transactions shall be considered as financial liability. In addition, active weighted average cost method is not compliant with IAS 39 because it is not one of the measurement methods stated in it.

However, the securities subject to repo transactions have been shown among the related type of securities and liabilities against the parties who gets their ownerships during the time period of transaction respectively in the asset and liability sides of audited financial statements of the intermediary institutions. It has been inferred that the amendments would be made to prepare the financial statements of intermediary institutions to be fully compliant with IAS and IFRS.

On the other hand, the booking of the securities which could be get their ownership through reverse repo transactions by the intermediary institutions as final purchase is not complaint with IAS 39. This is why, some amendments have to be made by the auditors to prepare the financial statements of intermediary institutions and reverse repo transactions have been reported under the heading of cash and cash equivalents as receivables from reverse repo transactions in the audited financial statements as in repo transactions by making an amendment. In addition, the measurement of the cost of the securities which will be sold at the maturity date of reverse repo transactions is not compatible with IAS 39 as in repo transactions.

All of these booking records show that Article 13 of Communiqué On Repurchase And Reverse Repurchase Agreements Serial V, Number 7 issued by CMB stating that the commitment and liabilities stemming from the repo and reverse repo transactions shall be monitored as a separate item under assets and liabilities of the balance sheet should be amended and Communiqué On Accounting Plan for The Intermediary Institutions and The Procedures for Its Implementation Serial XI, Number 7 should also be changed parallel to that amendment. But, it might waited for the finalization of proposed amendments in IAS 39 and IFRS 7 by IASB.

3.2. IFRS 7 Requirements for Repo and Reverse Repo Transactions

Paragraph 13 and 14 of IFRS 7 require the disclosure for each class of financial assets which will be booked according to the principles specified in the paragraphs between 15 and 37 of IAS 39.

The type and amount of securities subject to repo transactions, the risks and rewards which could be incurred through these transactions and the amount of liabilities to buy back have to be disclosed. The fair values of the securities subject to reverse repo transactions and whether they would be sold or repledged and there is an obligation to return it or not, the terms and conditions associated with it should also be disclosed.

Moreover, it is required that a maturity analysis for financial liabilities that shows the remaining contractual maturities and a description of how liquidity risk inherent in these liabilities is managed shall be disclosed. This is why, the maturities of the liabilities stemming from repo transactions and how the problems which would appear during their repayment process can be solved will be given in the financial statements. According to the paragraph B11 of Application Guidance annexed to IFRS 7, the time bands for the contractual maturity analysis might be determined in four groups, as not later than one month, later than one month and not later than three months, later than three months and not later than one year, later than one year and not later than five years. The amounts disclosed in the maturity analysis have to be contractual undiscounted cash flows as specified in paragraph B14 of it. Each amount of commitment to repay the liabilities stemming from repo transactions should be disclosed by grouping them in the same time bands.

IFRS 7 envisages also principles for the disclosure of market risk and sensitivity analysis related to the financial assets. So, interest rate risk of the securities subject to repo transactions and currency risk if the security is denominated in or indexed to foreign currency should be disclosed among the similar type of financial assets and also, be included in sensitivity analysis.

3.2.1. Disclosures by the Banks for the Repo and Reverse Repo Transactions

Banks operating in Turkey are obliged to disclose the needed information on their financial statements prescribed in IAS and IFRS. In addition, Communiqué Standards on Financial Statements and Related Disclosures to be Announced to the Public by the Banks issued by Banking Regulation and Supervision Agency has specifically determined the information which will be given item by item.

Banks are obliged to give information in a table by decomposing assets and liabilities exposed to interest rate and foreign exchange risk according to their maturities. Hence, repo and reverse repo transactions are disclosed in the same table. But it is not shown under a different heading as repo and reverse repo transaction.

Moreover, there is a requirement to disclose the banks' assets in the Communiqué by giving comparative information taking into consideration net values of the securities subject to repo transactions as each group of financial assets (financial assets that the differences of fair value recorded in the profit and loss account, that are available for sale and that are hold to maturity).

Another information which should be disclosed according to the requirements of the Communiqué is that types of risks have to be given under the information related to capital adequacy ratio. Among these disclosures, there are receivables from reverse repo under the heading of credit risk.

However, it is observed that the banks have not disclosed the sensitivity analysis showing the effect of interest rate and foreign exchange risk as envisaged in IFRS 7 in spite of the requirements to implement IAS and IFRS.

3.2.2. Disclosures by the Intermediary Institutions for the Repo and Reverse Repo Transactions

There is no any specific regulation determining the framework for the information which will disclosed in the financial statements for the brokerage houses similar to the banks But, intermediary institutions have to give the disclosures envisaged in IAS and IFRS.

It is observed that the content of the information related to the repo and reverse repo transactions in the financial statements of intermediary institutions is limited with the amount of securities subject to repo transactions and of receivables from reverse repo transactions considering IFRS 7.

IV. Amendments in IAS 39 and IFRS 7 Proposed by IASB, Their Impacts

Proposed amendments regarding derecognition in IAS 39 and IFRS 7 were published to get the comments of related parties by IASB (IASB, 2009b). That's why, it will be helpful to assess these amendments dividing two as accounting practices and disclosure requirements.

4.1. Amendments in IAS 39

In exposure draft, the definition of derecognition in Paragraph 9 of IAS 39 is amended as, "*derecognition of a financial asset or liability is ceasing to recognize that asset or liability in an entity's statement of financial position*" and

a new definition on *transfer* is added. According to this definition, a *transfer* takes place when one party passes, or agrees to pass, to another party some or all of the economic benefits underlying one or more of the assets. Although, the term ‘transfer’ is used broadly to include all forms of sale, assignment, provision of collateral, sacrifice of benefits, distribution and other exchange, it is also stated that a transfer does not necessarily result in derecognition.

In the same draft, Paragraphs of 15–24 are deleted and replaced by paragraphs 15A–24A and with paragraph 17, it is envisaged that an entity shall derecognize the asset if:

- The contractual rights to the cash flows from the asset expire, or
- The entity transfers the asset and has no continuing involvement in it, or
- The entity transfers the asset and retains a continuing involvement in it but the transferee has the practical ability to transfer the asset for the transferee’s own benefit.

Parallel to this, according to draft paragraph 18A, the rule, “*forward, option and other contracts associated with reacquiring the Asset for which the contract (or exercise) price is the fair value of the transferred Asset, does not constitute continuing involvement*” is protected.

In exposure draft’s 19A paragraph, it is stated that for a transfer of all or part of a financial asset that meets the derecognition criteria mentioned in the second and third condition of paragraph 17A and, the transferor shall recognize any new assets obtained or new liabilities assumed in the transfer and initially measure them at fair value. And also in draft paragraph 20A, it is indicated that the transferor shall recognize in profit or loss the difference between the carrying amount of the asset transferred and derecognised and the sum of the consideration received (including any new assets obtained less any new liabilities assumed) and any cumulative gain or loss that the entity had recognized in other comprehensive income.

In the draft, parallel to amendments that will be made in IAS 39, the Implementation Guidance of the standard is also amended. Accordingly, transferee’s ability to transfer the financial asset means the transferee has the practical ability to transfer the asset to an unrelated third party and is able to exercise that ability unilaterally and without needing to impose additional restrictions on the transfer. On the other hand, in case of that the transferor imposes restrictions on the transferred assets and transferee has the right to transfer the assets with the same restrictions to an unrelated third party it is

assumed that the transferee does not have the practical ability to transfer the financial asset for its own benefit. Here, for its own benefit means the transferee has the practical ability to take directly the transfer amount from the third party.

The first example that is given together with these explanations is the repurchase agreement on a financial asset that can be easily attainable and traded on an active market. In this case, it is argued that the financial asset is sold. Since the transferor of the financial assets subject to repo transaction has the continuing involvement on the future performance of the asset, the repurchase agreement should be evaluated as a new derivative financial instrument. It is accepted that a transferee has the ability to transfer such a financial instrument without entering into a repo transaction. Because, at the maturity of repo transaction, financial asset subject to repo can be purchased back from the market and delivered. Therefore, transferor transferring the financial instrument subject to repo transaction also transfers its control over the instrument. 'Control' means, in general terms, the ability to obtain (access) the future cash flows of the asset and the ability to restrict others' access to those future cash flows.

The second example is the repurchase agreement on a financial asset that is not easily attainable or traded on an active market. In this example, again, since the transferor of the financial assets subject to repo has the continuing involvement on the future performance of the asset which will be used for repurchase agreement should be evaluated as a new derivative financial instrument. However, if the transferee has the obligation to physically deliver the instrument at the maturity, financial asset in the repo cannot be purchased back from the market and delivered. Therefore, the transferee does not have the control over the financial asset. In such type of repo transactions, the party transferring the financial asset should continue to recognize the transferred asset and recognize the funds obtained from repo transaction as liabilities. Also, the transferor should recognize the transaction as receivables from the transferor.

As can be seen, with an amendment in IAS 39, a distinction would arise in the accounting of repo transactions for the securities that can be and cannot be traded/quoted in active market. In the first case, i.e. in the repo transactions where securities can be traded in the active market, the asset in question would be removed from the balance sheet by treating the transaction as a sale. In the latter case, i.e. in the repo transactions where securities can be traded in the active market, the asset in question would not be recognized in the balance sheet and the funds obtained would be taken into consideration as financial liability.

Moreover, in both cases, the repo transactions would be accepted as derivative transactions and additional accounting records would be kept. Accordingly, with the amendment, the repo transactions that would take place between the banks or other intermediary institutions and their individual customers or between themselves would lead a situation where the accounting method should be determined based on the distinction whether the security in question can be traded in the active market or not. It is considered that the determination can be made on the basis of the distinction whether the security is being traded in the ISE bonds and bills market-repo and reverse repo transactions market- or not. The security traded in the mentioned market would be derecognized from the balance sheet if it is subject to a repo transaction. In other words, the accounting method (without calculating active weighted average cost) envisaged by CMB would be applied. In case the security subject to a repo transaction does not reveal the mentioned feature, the repo transaction would be taken to the financial statements in a way similar to IAS 39's existing practices which are still applied as the accounting method by the banks. Furthermore, in both cases the off-balance sheet records would be kept for the commitments/obligations/liabilities that would arise from the repo transactions.

However, as envisaged in IG51 paragraph of the Implementation Guideline annexed to the existing IAS 39, there is no explanation whether the security in question should be reclassified or not as a receivable from the repurchase contract in the transferor's balance sheet in cases where transferee obtains the right -limited to the repo period- to sell or to pledge the security subject to the repo which is not possible to be traded in the active market. In my opinion, it would be more accurate to reclassify under these circumstances.

There is no explanation in the IAS 39 regarding the reverse repo transactions. On the other hand, it is possible to infer some implications that would stem from the proposed amendments. It is considered that the security subject to reverse repo transaction should be evaluated along the same criterion about the trading of the security subject to repo in the active market. Because, in case the security being traded in the ISE bonds and bills market -repo reverse repo transactions market- would be subject to reverse repo, it would be possible to extrapolate that the transferee would obtain the control opportunity. In this context, the security in question would be recorded as an asset in type of the mentioned security in the transferee's balance sheet. To put it another way, the accounting method similar to CMB's would be applied. In the reverse case, the transaction would be taken to the financial statements as did by the banks for reverse repo receivable, i.e. in accordance with the accounting practices revealed

according to existing IAS 39. In addition, there would be off-balance sheet records in both cases for the receivables resulting from reverse repo transactions.

4.2. Amendments in IFRS 7

According to the envisaged amendments in IFRS 7, transferred financial assets are divided into two groups, recognized and derecognized, disclosures for these groups are required to be given separately.

When an entity derecognizes financial assets but has continuing involvement in them, the entity is required to disclose information that enables users of its financial statements to evaluate the nature of and risks associated with the entity's continuing involvement in those derecognized financial assets. Thus, it is obliged to make explanations for repo transactions based on the financial assets sold and bought in active markets, in respect of fair value and the method used to determine the fair value and discounted value of cash flows necessary to repurchase related financial assets, maturity, and a sensitivity analysis showing the possible effect on the fair value of the continuing involvement of changes and other related qualitative information. An explanatory example is given below, in table 1 and table 2 (IASB, 2009b).

Table 1: Table for Disclosures on Continuing Involvement with Transferred Financial Assets that Have Been derecognized

Type of continuing involvement	Fair values	Cash flows needed to repurchase	Carrying amount of continuing involvement in balance sheet		Fair value of continuing involvement	Maximum exposure to loss
			Assets	Liabilities		
Repo transaction						

Moreover, disclosures regarding the profit and loss amount of the financial asset at its transfer date, and changes in the value of repo transaction, and if significant part of all transfers takes place at the reporting date, total amount of these transactions and the profit and loss amount resulting from such type of transactions and the date on which significant amount of transfer occurs should be given.

Table 2: Table for the Disclosures on Cash Outflows Due to Repo Commitments for Derecognized Financial Assets with Which the Firm has a Continuing Involvement

Type of continuing involvement	Maturity of continuing involvement						
	Total	Less than 1 month	Less than 3 month	Less than 6 month	Less than 1 year	Between 1 year and 2 years	More than 2 years
Repurchase agreements							

It is also required to disclose information which will enable the users of financial statements to understand the relationship between those assets and associated liabilities after the transfer. So, nature of assets, exposed risks, their carrying amount on the statement of financial position, when the counterparty to the associated liabilities has recourse only to the assets, a schedule that sets out the fair value of the assets, the fair value of the associated liabilities and the net position (IASB, 2009b). An explanatory example is given below, in Table 3 (IASB, 2009b).

Table 3: Table for the Disclosure of Transferred Financial Assets But Recognized in the Financial Statements

	Class of financial asset				
	Financial assets at fair value through profit or loss		Loans and receivables		Available-for sale financial assets
	Trading Securities	Trading derivatives	Mortgages	Consumer loans	Equity investments
Carrying amount of assets					
Carrying amount of associated liabilities					
For those liabilities that have recourse only to specific assets:					
Fair value of assets					
Fair value of associated liabilities					
Net position					

After the amendments in IFRS 7 which will be taken into force, information shown in Table 1 and Table 2 for repo transactions based on the financial assets traded in an active market and information in Table 3 for other types of financial assets which will be subject to repo transactions have to be disclosed.

4.3. Impact of the Amendments in IAS 39 and IFRS 7 Proposed by IASB

If IASB puts into force the amendments in IAS 39 and IFRS 7, it could be thought that repo market of bills and bonds in ISE will be affected negatively. For the financial institutions, the volume of balance sheet has been accepted as both prestige and good indicator of their performances. There will not be any advantage for the banks and intermediary institutions to enter into repo transactions with the securities having an active market because of the fact that they would be derecognized and the total volume of the assets would be decreased depending on the derecognition. So, it is highly probable to see a reduction in the trading volume of the repo market of ISE. Also, it should be taken into account that this response may affect the portfolio choices totally or partly consisting of domestic government bonds by the banks and intermediary institutions and as result, may have inverse effect on the interest rates.

Moreover, regulatory authorities may define a new legal relationship for the repo transactions which will give power to control not only the returns of the securities but also the other rights by the seller instead of the existing legal relationship based on transferring the ownership of securities subject to repo transactions. Such a development will lead to transformation in the general accounting principle based on that economic substance of transactions should be reported to that legal substance should be firstly assessed. But, this transformation will mean that the diverging from the general principle, substance over legal form should be taken into account stated in different accounting and financial reporting standards, could be triggered again by IASB's rule.

On the other hand, although the principle about the control of the securities subject to repo or reverse repo transactions is associated with the possibility of selling or buying them in an active market, there exists some uncertainties. For instance, it may be came into across with a case like that there would not be an active market for the securities subject to repo transactions at the transaction date and then they could be started to be traded in the market. In such cases, it is not certain whether the securities will be reported by derecognizing or not.

Another uncertain point is that which of parties will book the gains of security subject to repo transaction if it is derecognized because of that it has an active market. In spite of this grey area, it is envisaged that off-balance sheet booking shall be made for the funds borrowed by repo transactions considering

them as derivative liabilities. Hence, expenses incurred by the derivative liability during the term period of repo transaction should be taken to financial statements. In my view, it should be taken into account which party will get the cash flows stemming from the security subject to repo transaction before making a decision to book income or valuation difference. If the cash flow is continually acquired by the party who transfers the security, revenue or valuation difference during the time period of repo transaction should be booked by the transferee. For that reason, it is thought that the right approach would be that, in addition to the account of derivative liability for the liabilities related to repo commitments, the account of derivative asset should be created for the securities which will be repurchased, the returns and the valuation differences of the securities subject to repo transactions should be booked in the gains of the derivative assets.

V. Conclusion

It has been seen that accounting practices determined for the intermediary institutions by CMB aren't conformable to IAS 32 and 39 when the accounting principles for repo and reverse repo transactions are considered. This is why, their financial statements have been prepared by the independent auditors by revising. This case is a result of the definition made in Article 13 of Communiqué On Repurchase And Reverse Repurchase Agreements Serial V, Number 7 issued by CMB. It leads to an implementation conflicting with the basic accounting principle that substance of the transaction should be considered instead its legal view. This case would prevail when the amendments proposed in IAS 39 and IFRS 7 will take into force.

It should be preferred to make a change in the financial reporting of both the securities subject to repo transactions according to the existing principles of IAS 39 and the securities that will be subject to repo transactions but not to be derecognized because of the lack of active market after the finalization of amendments in IAS 39 and IFRS 7 proposed by IASB. In this manner, it is considered that the securities subject to repo transactions shall be shown in a new group of assets which could be called as the financial assets that will be repurchased instead of among the same group of securities before the transaction.

Possible impact of the amendments in IAS 39 and IFRS 7 proposed by IASB should be assessed by CMB, ISE, CBRF, BRSA together taking into account the views of the participants of repo and reverse repo market. But, in my opinion, the control criteria which associates derecognition with the active market of the securities subject to repo or reverse repo transactions is needed to be reassessed by IASB.

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INVESTIGATING INVESTMENT PREFERENCES OF INSTITUTIONAL INVESTORS TOWARD ISE COMPANIES

Serkan Yılmaz KANDIR*

Abstract

Institutional investors may be defined as specialized financial institutions that manage savings collectively on behalf of small investors toward specific objectives. Aim of this study is to investigate the factors that affect investment preferences of institutional investors toward ISE companies. Empirical analysis is performed by employing cross-sectional regression model. In the regression model, estimated for the years, 2005, 2006 and 2007, institutional ownership in each company is used as dependent variable, while firm characteristics are used as independent variables. Firm characteristics are, cumulative one-year stock return, standard deviation of stock returns, market value, leverage ratio, firm age, turnover ratio, return-on-assets, dividend payment dummy and ISE-100 index dummy. Analysis results suggest that institutional investors invest prudently in ISE companies. Institutional investors seem to prefer companies with big scale, low level of total risk and stock liquidity, high level of return-on-assets and companies included in ISE-100 index. Institutional investors' preference toward dividend paying and old companies appear to be less evident. On the other hand, institutional investors do not seem to have an explicit investment pattern related with companies' recent stock returns and capital structures.

I. Introduction

Institutional investors are specialized financial institutions that manage savings of small investors toward specific objectives, such as return maximization at an acceptable level of risk and maturity adjustment. All types of mutual funds, closed-end funds, life insurance companies, real estate investment trusts and venture capital investment trusts are referred to as institutional investors (Turkish

* Dr. Serkan Yılmaz Kandir, Cukurova University, Faculty of Economics and Administrative Sciences, Business Department, Balcalı Kampusu, Adana.
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Institutional Investment Managers' Association, http://www.kyd.org.tr/T/kurumsal_yatirimci.aspx, 2008).

Preferences of institutional investors toward corporations are thought to be different from the preferences of other investors. This difference seems to arise from three sources: agency theory, market anomalies and prudent investment hypothesis. After delegating the decision making authority to institutional investors, personal investors could merely monitor the preferences of institutional investors. The second reason of the difference between the preferences of institutional investors and other investors is supposed to be related with market anomalies. As institutional investors are better able to track recent security price movements, they seem to have an advantage of developing a variety of strategies for pursuing security price trends (Gompers and Metrick, 2001). Third, the difference between the preferences of institutional investors and other investors is thought to arise from the obligation of institutional investors to invest prudently. Prudent investment hypothesis necessitates showing a specific level of care, skill, prudence and diligence at which a prudent, diligent and skilled person would show for his/her own investments. Prudent investment hypothesis requires that institutional investors should put the self-interests of clients before that of the managers during the management of the funds (Droms, 1992). Thus, prudent investment hypothesis seem to direct the preferences of institutional investors. Institutional investors avoid showing that they engage with speculative and improper investments (Eakins, et al., 1998). Since institutional investors are obliged to pursue prudent investment principles in all of their investments, there appears a need for measures that can be used for evaluating the suitability of investments to prudent investment hypothesis. These measures are determined by evaluating some firm characteristics. Firm characteristics may be determined by two approaches. First, we may use the firm characteristics that should be considered by institutional investors who invest prudently. Second, we may determine firm characteristics in the light of previous studies. In this study, either of the approaches is used to investigate the determinants of the preferences of institutional investors.

Aim of this study is to investigate the factors that affect investment preferences of institutional investors toward Istanbul Stock Exchange (ISE) companies. The method used to examine the factors that impact investment preferences of institutional investors is cross-sectional regression analysis. The regression model, which is estimated for the years 2005, 2006 and 2007, employs institutional ownership as dependent variable and firm characteristics as

independent variables. Analysis results suggest that institutional investors generally invest prudently in ISE.

The rest of the paper is organized as follows. The first section reviews the literature. The second and the third sections present the methodology, data and empirical results, respectively. The last section concludes the paper.

II. Literature Review

Several empirical studies about investment preferences of institutional investors have been performed. These studies vary according to the countries examined, model employed, variables used and findings obtained. Empirical studies are classified according to whether the examined country is the USA or not.

Badrinath, et al. (1989) investigate the behaviors of the US institutional investors by a cross-sectional regression analysis. Analysis results suggest that institutional investors prefer companies with big size, high historical performance, low total risk, high systematic risk, high liquidity and companies whose stocks are traded for a long time. Cready (1994) compares the preferences of institutional and personal investors toward NYSE stocks by employing cross-sectional regression analysis. Empirical findings reveal that institutional investors opt for big sized, low-dividend paying companies that are included in S&P 500 index. On the other hand, personal investors appear to invest in risky, big-sized and low-dividend paying companies. Falkenstein (1996) examines investments of mutual funds in order to determine the stock preferences of the institutional investors. Regression analysis results show that mutual funds prefer companies whose size, stock price, volatility and liquidity are high and which are old. Badrinath et al. (1996) investigate the characteristics of companies that are held in portfolios of US insurance companies by cross-sectional regression analysis. Analysis results reveal that institutional ownership is negatively related with standard deviation of stock returns and turnover ratio. On the other hand, institutional ownership appears to be positively related with firm size, leverage ratio, dividend yield and firm age. Eakins et al. (1998) examine the relationship between institutional ownership and various characteristics of NYSE and AMEX companies by using a Tobit regression model. Findings suggest that institutional investors prefer companies with high beta, positive current ratio; high dividend payment, big size, high asset turnover ratio, high turnover ratio and companies that are rated by S&P. Clay (2001) investigate the linkages among institutional investments and firm characteristics. Analysis results reveal that institutional investors prefer companies that are listed in S&P 500 index, whose sales and

performance are high. Gompers and Metrick (2001) examine the preferences of institutional investors toward US companies by using correlation and cross-sectional regression analyses. Analysis findings show that institutional investors prefer companies with big size, high level of turnover ratio, high book-to-market ratio, high stock price and low recent historical stock return. Bennett et al. (2003) investigate the preferences of institutional investors toward US common stocks. Regression analysis results show that there is a positive relationship among institutional ownership, risk and liquidity measures. Furthermore, institutional investors seem to prefer old, big-sized, low-dividend paying companies. However, momentum factor appears to share a negative relationship institutional ownership. Bathala et al. (2005) analyze the preferences of institutional investors by employing cross-sectional regression model. Empirical findings reveal that institutional ownership is positively related with beta, momentum factor, return on assets and being traded in NYSE. Nevertheless, institutional ownership seems to share a negative relationship with dividend yield, firm size, price-to-earnings ratio, share of current price-to earnings ratio in estimated price-to-earnings ratio for the following three years. Grinstein and Michaely (2005), tests the relationship between institutional ownership and dividend distribution of US companies for the time period between the years 1980 and 1996. Regression analysis results imply an institutional preference for dividend paying companies. Aggarwal et al. (2005) investigate the stock preferences of actively managed US mutual funds in emerging stock markets. Regression analysis findings show that mutual funds invest in companies with big size, low leverage ratio, high market-to-book ratio, high accounting quality and companies that issue depository receipts and tracked by analysts. Oak and Dalbor (2008) examine the preferences of institutional investors toward US lodging companies. Regression analysis results suggest that institutional investors invest in lodging companies with big size, high level of leverage, high ratio of capital expenditures to assets.

Dahlquist and Robertsson (2001) investigate the investment preferences of foreign and institutional investors in Sweden. Analysis findings reveal that institutional investors invest in companies with big size, high dividend payout ratio, high beta, low stock return, low current ratio, low liquidity, low concentration and companies whose stocks are not traded in foreign markets. Short et al. (2002) test the relationship between institutional ownership and dividend payout ratio for 211 companies whose stocks are traded in London Stock Exchange LSE). Regression findings demonstrate a positive relationship between institutional ownership and dividend payout. Pinnuck (2004) examines

the stock preferences of 35 actively managed mutual funds in Australia by using portfolio and cross-sectional regression analyses. Empirical findings show that institutional investors prefer stocks of companies with big size, high liquidity, low volatility, high recent stock price performance. Covrig et al. (2006) analyze the stock preferences of domestic and foreign institutional investors in 11 developed countries. Regression analysis results reveal discrepancy between the stock preferences of domestic and foreign institutional investors. Domestic mutual fund managers seem to invest in companies with low book-to-market ratio, high dividend yield, and high turnover ratio. Whereas, foreign institutional investors heavily invest in companies with big size, high turnover ratio, high volume of exports. Brands et al. (2006) investigate the factors that affect the investment preferences of stock portfolio managers in Australia by employing cross-sectional regression model. Empirical findings imply existence of neither momentum nor contrarian investment strategies. On the other hand, institutional investors seem to prefer companies with high volatility, high market value, narrow spread and companies whose stocks are tracked by analysts. Furthermore, industries of the companies appear to have a role in investment decisions of institutional investors. Ng and Wu (2006) investigate stock preferences of Chinese personal and institutional investors by using cross-sectional regression analysis. Empirical findings vary due to the type of investors. Personal investors invest in companies with high beta, high variance of error terms, high turnover ratio, high level of public ownership small size, low stock price, low book-to-market ratio. Chinese institutional investors prefer companies with high earnings-per-share, high volatility, high stock price, big size and long history. Bhattacharya and Graham (2007) test the relationship between Finnish institutional ownership and firm performance. Findings imply a two-way relationship between institutional ownership and firm performance. As firm performance affects the preferences of institutional investors, institutional ownership also impacts firm performance. Moreover, institutional ownership seems to share positive relationship with firm size and market risk. On the contrary, leverage appears to be negatively related with institutional ownership.

III. Data and Methodology

This study examines nonfinancial ISE companies for the years 2005, 2006 and 2007. The logic of limiting the sample period with three years depends on significant reasons. First reason arises from the principles of preparing financial statements. After the change in tax law in 2004, financial statements were

adjusted for inflation (Uysal et al., 2005). There are drawbacks of comparing historical financial statements and the ones adjusted for inflation. These drawbacks arise from the fact that inflation accounting classifies financial statement items as either monetary or not monetary. These two types of items are not affected in the same way from the adjustments for inflation (Yüksel, 1997). In this study, to avoid drawbacks of comparing financial statements that are adjusted for inflation and historical ones, financial statements of the year 2004 are not used. Furthermore, there are companies that prepare financial statements according to different principles in the year 2003. So, the financial statements of the year 2003 are also not used. The second reason for limiting the research period with three years is related with the accessibility of institutional investor data. The difference in the principles of financial statement preparation for the years 2003 and 2004 has already been stressed. The institutional investor data prior to 2003 is limited with the April 2002. It is clear that comparing the April 2002 data with the year-end data for the years 2005, 2006 and 2007 will not be proper. Thus, research period is limited with the years 2005, 2006 and 2007. Depending upon the similar reasons with other empirical studies, nonfinancial companies are not included into the sample (Badrinath et al., 1996; Grinstein and Michaely, 2005). Fama and French (1992) states the reason of not including financial companies into their sample as the high level of financial leverage used by financial companies. In this sense, a leverage level which can be accepted as normal for financial companies would be an indicator of financial distress for nonfinancial companies. Another prerequisite for constructing the sample is that accounting data should be declared at the date of the analysis. Declarations of annual financial statements are completed in the first half of the following year (Fama and French, 1992). In this sense, financial statement data of the companies are collected from semiannual financial statements instead of the annual ones. Thus, a consistence is achieved between declaration date of financial statements and institutional investor data which is derived at the year ends. There are three more criteria that are considered during the construction of the sample. The first criterion is related with stock price data. The stocks that do not have a trading record for more than three consecutive months during a year are not included into the sample (Chui and Wei, 1998). The second criterion requires exclusion of companies that have negative book equity at the fiscal year-end (Fama and French, 1995; Chui and Wei, 1998). Third, because of potential problems of defining accounting variables and equity capitalizations, firms with more than one class of ordinary share are not included into the sample (Strong

and Xu, 1997). After taking those criteria into consideration, number of stocks in the sample are 188, 193 and 199 for the years 2005, 2006 and 2007, respectively.

There is a consensus about the definition of institutional ownership in the literature. The common method for determining the level of institutional ownership is to divide the number of institutionally owned shares by the number of shares outstanding (Badrinath et al., 1996; Falkenstein, 1996; Eakins et al., 1998; Gompers and Metrick, 2001). In this study, institutional ownership ratio is computed in the same way and depicted below:

$$IO_i = \frac{NIOS_i}{NTS_i} \quad (1)$$

IO_i = the institutional ownership ratio of company i ,

$NIOS_i$ = the number of shares of company i , owned by institutional investors,

NTS_i = the number of shares outstanding of company i .

The number of institutionally owned shares and the number of shares outstanding of the companies are derived from the internet site of Association of Capital Market Intermediary Institutions of Turkey (<http://www.tspakb.org.tr/veriler/veribanka.htm>).

Prudent investment hypothesis requires that institutional investors should invest in big companies. The reason for such a preference is that big companies would better access capital markets and it is easy to obtain information about them. Thus, big companies are perceived less risky (Eakins et al., 1998). Empirical studies suggest that institutional investor prefer the shares of big companies (Badrinath et al., 1989; Cready, 1994; Falkenstein, 1996; Badrinath, et al., 1996; Eakins et al., 1998; Gompers and Metrick, 2001; Dahlquist and Robertsson, 2001; Bennett et al., 2003; Pinnuck, 2004; Aggarwal et al., 2005; Covrig et al., 2006; Brands et al., 2006; Ng and Wu, 2006; Bhattacharya and Graham, 2007; Oak and Dalbor, 2008). In the majority of the empirical studies, firm size is proxied by two variables. The first one is total assets (Badrinath et al., 1989; Badrinath et al., 1996; Aggarwal et al., 2005). The second proxy is the market value (Cready, 1994; Falkenstein, 1996; Eakins et al., 1998; Gompers and Metrick, 2001; Dahlquist and Robertsson, 2001; Covrig et al., 2006; Ng and Wu, 2006). In this study, firm size is measured by the natural logarithm of the

market value. Market values of the ISE companies are obtained from ISE Annual Bulletins (<http://www.imkb.gov.tr/donemselbulten/veri/yillikraporxls.zip>).

The preferences of institutional investors toward historical returns may be evaluated by the examination of two alternative investment strategies. These strategies are contrarian and momentum investment strategies. Contrarian investment strategy requires the purchase of past losers and sale of past winners. On the other hand, momentum investment strategy necessitates purchase of past winners and sale of past losers. Some empirical studies maintain that institutional investors employ contrarian investment strategy (Gompers and Metrick, 2001; Dahlquist and Robertsson, 2001; Bennett et al., 2003). Some other studies suggest that institutional investors apply momentum investment strategy (Pinnuck, 2004; Bathala et al., 2005). In majority of the empirical studies, cumulative stock returns are used to examine investment preferences of institutional investors (Falkenstein, 1996; Dahlquist and Robertsson, 2001; Aggarwal et al., 2005; Ng and Wu, 2006). In this study, cumulative stock returns of the most recent year are used. Stock return data are adjusted for dividend payouts and stock splits. Stock return data come from the internet site of ISE (http://www.imkb.gov.tr/sirket/fiyat_getiri.htm). Cumulative stock returns of the most recent year are computed by the formula provided below (Feibel, 2002; Forner and Marhuenda, 2004):

$$CR_i = \left[\prod_{t=1}^{12} (1 + R_{i,t}) \right] - 1 \quad (2)$$

CR_i = cumulative return of stock i in the most recent year,

$R_{i,t}$ = return of stock i in the month t.

According to prudent investment hypothesis, institutional investors should bear a reasonable level of risk during their investment activities. There are two reasons. First, high level of risk would cause big losses and deteriorate the performance of the managed portfolio. Second, the big losses that arise from bearing high level of risk would cause legal obligations for portfolio managers. Thus, a negative relationship is hypothesized between institutional ownership and risk (Badrinath et al., 1989). Risk preferences of institutional investors vary among empirical studies. Several studies suggest that institutional investors prefer low level of risk (Badrinath et al., 1989; Badrinath et al., 1996; Pinnuck,

2004). Some other studies reveal institutional investors' preference for risky stocks (Dahlquist and Robertsson, 2001; Bennett et al., 2003; Bathala et al., 2005; Grinstein and Michaely, 2005; Brands et al., 2006; Ng and Wu, 2006). There are various risk measures in the literature. Some of the studies employ systematic risk (Cready, 1994; Badrinath et al., 1996; Dahlquist and Robertsson, 2001; Bathala et al., 2005; Grinstein and Michaely, 2005; Ng and Wu, 2006). In some of the studies, variance of stock returns is used as the risk measure (Falkenstein, 1996; Gompers and Metrick, 2001; Covrig et al., 2006; Brands et al., 2006). On the other hand, there are several studies that use standard deviation of stock returns as a risk measure (Badrinath et al., 1989; Badrinath et al., 1996; Bennett et al., 2003; Pinnuck, 2004; Bhattacharya and Graham, 2007; Oak and Dalbor, 2008). In this study, the standard deviation of the stock returns for the most recent two years is used as a risk measure. Standard deviation of stock returns is computed by the formula below (Feibel, 2003; Beaumont, 2004):

$$SD_i = \sqrt{\frac{\sum_{t=1}^n (r_{it} - R_i)^2}{n}} \quad (3)$$

SD_i = standard deviation of stock returns of company i ,

r_{it} = stock return of company i for the period t ,

R_i = mean return of company i during period n ,

n = length of the period.

A positive relationship is hypothesized to exist between financial leverage ratio and the total risk of a company. In this sense, there should be a negative relationship between institutional ownership and leverage ratio. As high level of risk would induce big losses, bearing high level of risk does not seem to be consistent with prudent investment hypothesis (Badrinath et al., 1989). However, if institutional investors seek for high return instead of obeying prudent investment principles, there will be a positive relationship between institutional ownership and leverage ratio. Because higher return is expected from the companies that employ higher leverage (Eakins et al., 1998). Some empirical studies obtain findings that are in line with prudent investment hypothesis (Aggarwal et al., 2005; Bhattacharya and Graham, 2007). Nevertheless, some other studies find evidence of institutional investors' preference toward highly

leveraged companies (Badrinath et al., 1996; Oak and Dalbor, 2008). In this study, leverage ratio of each company is computed by dividing total liabilities by total assets. This calculation method of leverage is also used by Badrinath et al. (1989), Badrinath et al. (1996), Eakins et al. (1998), Oak and Dalbor (2008). Total liability and total asset data are derived from balance sheets declared in the internet site of ISE (<http://www.imkb.gov.tr/malitablo.htm>).

Firm age is hypothesized to impact the perception of investors toward companies (Falkenstein, 1996; Gompers and Metrick, 2001; Bennett et al., 2003; Ng and Wu, 2006). Investing in an old firm seems to be consistent with prudent investment hypothesis (Badrinath et al., 1989). Most of the empirical studies suggest that institutional investors prefer old companies (Badrinath et al., 1989; Falkenstein, 1996; Badrinath et al., 1996; Bennett et al., 2003). In this study, firm age is computed by the natural logarithm of the period that spans from the first trading date in ISE to the analysis date. The first trading dates of companies are obtained from the internet site of ISE (http://www.imkb.gov.tr/sirket/sermaye_temettu.htm).

Prudent investment hypothesis suggests that institutional investors should invest in stocks with high level of liquidity. If institutional investors invest in stocks with low level of liquidity, this will cause price pressure. Since institutional investors tend to avoid price pressure risk, they will opt for high liquidity (Badrinath et al., 1989). Most of the empirical studies show that institutional investors prefer highly liquid stocks (Badrinath et al., 1989; Badrinath et al., 1996; Eakins et al., 1998; Gompers and Metrick, 2001; Bennett et al., 2003; Pinnuck, 2004; Covrig et al., 2006). In majority of the empirical studies, turnover ratio is used as a proxy of liquidity (Badrinath et al., 1989; Falkenstein, 1996; Badrinath et al., 1996; Eakins et al., 1998; Gompers and Metrick, 2001; Dahlquist and Robertsson, 2001; Bennett et al., 2003; Pinnuck, 2004; Covrig et al., 2006; Ng and Wu, 2006; Oak and Dalbor, 2008). Similarly, this study employs mean annual turnover ratios of ISE companies as a proxy of liquidity. Annual turnover ratio data come from ISE annual bulletins.

Investing in shares of companies that have high performance allegedly obeys prudent investment hypothesis (Eakins et al., 1998). In the literature, profitability and performance terms are used together and the results obtained show diversity. Some of the empirical studies find that institutional investors exclusively invest in high performance companies (Clay, 2001; Bathala et al., 2005). On the contrary, Bhattacharya and Graham (2007) detect a preference of

institutional investors toward companies with low performance. Empirical studies employ different measures of performance. Dahlquist and Robertsson (2001), Aggarwal et al. (2005) and Covrig et al. (2006) use return-on-equity as performance measure; whereas; Eakins et al. (1998) and Bathala et al. (2005) proxy profitability by return-on-assets (ROA). On the other hand, Ng and Wu (2006) and Brands et al. (2006) employ earnings-per-share; while Bhattacharya and Graham (2007) use Tobin Q ratio as performance indicators. In this study, ROA is used as measure of corporate performance. ROA is computed by dividing net income by total assets of the company. Net income data of the ISE companies are obtained from ISE annual bulletins, whereas total asset data are derived from balance sheets declared in the internet site of ISE (<http://www.imkb.gov.tr/malitablo.htm>).

There are empirical studies that assign dividend policy a role in investment decisions of institutional investors. Findings of these studies suggest that institutional investors prefer dividend-paying and high dividend yielding companies (Badrinath et al., 1996; Eakins et al., 1998; Dahlquist and Robertsson, 2001; Short et al., 2002; Grinstein and Michaely, 2005). On the contrary, some empirical studies assert that institutional investors tend to invest in companies that do not pay dividend and whose dividend yield is at low levels (Bennett et al., 2003; Bathala et al., 2005). Some empirical studies use amount of dividend payouts in their analyses (Badrinath et al., 1996; Aggarwal et al., 2005). Some other studies evaluate dividend policies of the firms by dividing dividend payout amount by market value (Dahlquist and Robertsson, 2001; Gompers and Metrick, 2001; Bathala et al., 2005; Covrig et al., 2006). Another strand of literature evaluates dividend policy with a dummy variable (Eakins et al., 1998; Grinstein and Michaely, 2005). Since the number of companies that do not pay dividends is at a high level, I do not employ amounts or ratios in order to evaluate dividend policies of the companies. Companies are classified into two parts as dividend payers and nonpayers. In this sense, a dummy variable is constructed by assigning "1" to payers and "0" to nonpayers. Dividend data of ISE companies are derived from ISE annual bulletins (<http://www.imkb.gov.tr/donemselbulten/veri/yillikraporxls.zip>).

Investment preferences of institutional investors are hypothesized to be affected by whether the companies are included in stock indices. Prudent investment principles require institutional investors to invest in companies that are listed in stock indices. In this sense, a positive relationship is expected between institutional ownership and being included in stock indices (Gompers

and Metrick, 2001) This positive relationship is based on investor recognition theory. Empirical studies reveal that investor recognition is an important factor for institutional investors in their investment decisions (Cready, 1994; Gompers and Metrick, 2001; Clay, 2001). In this study, it is examined whether the companies are included in ISE-100 index. A dummy variable is assigned for considering this situation. Dummy variable is set equal to one if the firm is included in the ISE-100 index, zero otherwise. Contents of ISE-100 index are updated quarterly. As annual data are used in the study, a criterion of being included in ISE-100 index for at least three quarters in a year is constructed. Content of ISE-100 index is obtained from internet site of ISE (http://www.imkb.gov.tr/Endeksler/endeks_sirketler.htm).

Cross-sectional regression model is employed to examine the factors that affect the investment preferences of institutional investors toward ISE companies. Three cross-sectional regression models are constructed for the years 2005, 2006 and 2007. In the cross-sectional regression models, institutional ownership ratios are used as dependent variables, whereas firm characteristics are used as independent variables. The cross-sectional regression model estimated for the years 2005, 2006 and 2007 is formulated below:

$$IO_i = \beta_0 + \beta_1 CR_i + \beta_2 MV_i + \beta_3 LEV_i + \beta_4 AGE_i + \beta_5 TURN_i + \beta_6 SD_i + \beta_7 ROA_i + \beta_8 DD_i + \beta_9 ID_i + \varepsilon_i \quad (4)$$

IO_i = institutional ownership ratio of company i ,

CR_i = cumulative return of stock i in the most recent year,

MV_i = natural logarithm of the market value of company i ,

LEV_i = leverage ratio of company i ,

AGE_i = natural logarithm of the period that spans from the first trading date in ISE to the analysis date of company i ,

$TURN_i$ = turnover ratio of company i ,

SD_i = standard deviation of stock returns of company i ,

ROA_i = return-on-asset of company i ,

DD_i = dummy variable assigned according to the dividend policy of company i ,

ID_i = dummy variable assigned according to whether company i is included in ISE-100 index,

ε_i = residual error of the regression.

An important concept in regression models is to denote all of the variables either in logarithmic or rational forms. Since institutional ownership variable is

specified as a ratio, other variables are suggested to be denoted either in logarithmic or in rational form (Gompers and Metrick, 2001). Thus, firm size and firm age are specified in logarithmic form; whereas other variables are expressed as ratios. As dividend policy and being included in ISE-100 index are considered by dummy variables, logarithmic or rational representations of these two variables do not seem to be necessary.

A serious problem that arises during the estimation of regression models is multicollinearity. One of the most prominent methods to detect the existence of multicollinearity is to examine the correlation coefficients among independent variables. A high level of correlation coefficient (absolute value that exceeds 80%) among independent variables is an indicator of the existence of multicollinearity (Kennedy, 1998). Heteroscedasticity is another problem that arises when studying with cross-sectional data. Presence of heteroscedasticity is tested by “White General Heteroscedasticity Test” (White, 1980). Adjustments for heteroscedasticity are made by using “Heteroscedasticity-Consistent Standard Errors” suggested by White (1980).

IV. Empirical Findings

In this section, preferences of institutional investors toward ISE companies are investigated. First, summary statistics of the variables used in the analysis are examined. Second, investment preferences of institutional investors are analyzed by cross-sectional regression model. Summary statistics are depicted in Table 4.1. for the years 2005, 2006 and 2007.

Table 4.1: Summary Statistics (2005)

	Minimum	Maximum	Mean	Standard Deviation	Observations
IO	0,000	0,803	0,095	0,152	188
CR	-0,866	3,160	0,447	0,680	188
MV	14,939	23,445	18,623	1,536	188
LEV	0,012	0,934	0,420	0,201	188
AGE	6,518	8,896	8,287	0,483	188
TURN	0,163	72,862	13,903	12,353	188
SD	0,059	0,828	0,160	0,074	188
ROA	-0,293	0,240	-0,009	0,057	188

Notes: IO: institutional ownership ratio of the relevant company, CR: cumulative return of the relevant stock in the most recent year, MV: natural logarithm of the market value of the relevant company, LEV: leverage ratio of the relevant company, AGE: natural logarithm of the period that spans from the first trading date in ISE to the analysis date of the relevant company, TURN: turnover ratio of the relevant company, SD: standard deviation of stock returns of the relevant company, ROA: return-on-asset of the relevant company.

Table 4.1 reveals a diverse structure among the summary statistics of the variables. According to standard deviations, IO, LEV, SD and ROA show relatively stable distributions. Among the other variables, particularly TURN exhibits a great variability. The difference between the minimum and maximum values of TURN also confirms this assertion. Thus, ISE companies display discrepancy in terms of liquidity. Although institutional investors do not invest in some of the companies, institutional ownership ratio is at about 80% for some other companies. Companies exhibit significant annual return diversity. While the biggest loser bear a loss of 90%, the biggest winner's return exceeds 300%. Although firm size and firm age show variability in their original forms, variability is lessened after the logarithmic transformation. Leverage also exhibits a volatile structure. Beside the companies that even do not use debt, there are some companies that are almost completely financed by debt. Average debt ratio is about 40%. These volatile structures cannot be observed for risk and performance. Although minimum and maximum values are different, standard deviations do not display such a discrepancy. Thus, risk and performance structures of the companies appear to be similar.

Table 4.2: Summary Statistics (2006)

	Minimum	Maximum	Mean	Standard Deviation	Observations
IO	0,000	0,798	0,094	0,147	193
CR	-0,931	1,581	-0,098	0,415	193
MV	14,648	23,479	18,600	1,604	193
LEV	0,043	0,897	0,454	0,221	193
AGE	6,688	8,945	8,330	0,533	193
TURN	0,120	58,613	11,026	10,308	193
SD	0,055	0,405	0,150	0,053	193
ROA	-0,218	0,521	0,010	0,086	193
Notes: IO: institutional ownership ratio of the relevant company, CR: cumulative return of the relevant stock in the most recent year, MV: natural logarithm of the market value of the relevant company, LEV: leverage ratio of the relevant company, AGE: natural logarithm of the period that spans from the first trading date in ISE to the analysis date of the relevant company, TURN: turnover ratio of the relevant company, SD: standard deviation of stock returns of the relevant company, ROA: return-on-asset of the relevant company.					

Statistics of the year 2006 depicted in Table 4.2 show great similarities with the statistics of the year 2005. However, there are slight changes in some variables. Volatility of stock returns is diminished when it is compared with the

year 2005. Moreover, total risk and return variability of stocks returns are reduced. On the other hand, investors lose an average of 10% during the year. On the contrary, a different pattern is observed for firm performance. ROA values of the year 2006 become more volatile when they are compared with the year 2005. The high level of variability of turnover ratio is somewhat lessened.

Table 4.3: Summary Statistics (2007)

	Minimum	Maximum	Mean	Standard Deviation	Observations
IO	0,000	0,784	0,115	0,158	199
CR	-0,763	1,973	0,158	0,499	199
MV	14,600	24,061	18,834	1,611	199
LEV	0,000	0,902	0,438	0,217	199
AGE	6,428	8,991	8,355	0,588	199
TURN	0,134	76,421	11,660	13,451	199
SD	0,041	0,993	0,143	0,080	199
ROA	-0,274	0,506	0,032	0,085	199
Notes: IO: institutional ownership ratio of the relevant company, CR: cumulative return of the relevant stock in the most recent year, MV: natural logarithm of the market value of the relevant company, LEV: leverage ratio of the relevant company, AGE: natural logarithm of the period that spans from the first trading date in ISE to the analysis date of the relevant company, TURN: turnover ratio of the relevant company, SD: standard deviation of stock returns of the relevant company, ROA: return-on-asset of the relevant company.					

The summary statistics of the year 2007 presented in Table 4.3 show great similarities with the previous two years. There are only slight differences. Stock returns in 2007 are greater than the stock returns of the year 2006. Differing from the year 2006, mean return becomes positive. While investors lose 10% in 2006, they earn 15% in 2007. However, an increase in risk level accompanies this improvement in stock returns. There is also an improvement in the performance of the companies when it is compared with the previous two years. Other data do not display any significant change.

When the summary statistics of the three years are evaluated together, one cannot observe significant differences among the years. IO, LEV, SD and ROA have more stable structures than the other variables. On the contrary, TURN is the most volatile variable. Furthermore, institutional ownership increases by 2 percent between 2005 and 2007. Cross-sectional regression analysis results for the years 2005, 2006 and 2007 are presented below.

Table 4.4: Cross-Sectional Regression Analysis Results (2005)

	Regression Coefficients
Constant term	-1,009 (0,000)**
MV	0,049 (0,000)**
TURN	-0,114 (0,072)*
ROA	0,313 (0,033)**
LEV	-0,001 (0,984)
DD	0,024 (0,386)
AGE	0,275 (0,093)*
ID	0,037 (0,092)*
CR	-0,008 (0,521)
SD	-0,200 (0,022)**
Adjusted R²	0,391
F Statistic	14,318 (0,000)**
Durbin-Watson Statistic	1,934
White Test Statistic	1,741 (0,043)**
Note:	In the regression model, IO (institutional ownership ratio of the relevant company) is the dependent variable. CR: cumulative return of the relevant stock in the most recent year, MV: natural logarithm of the market value of the relevant company, LEV: leverage ratio of the relevant company, AGE: natural logarithm of the period that spans from the first trading date in ISE to the analysis date of the relevant company, TURN: turnover ratio of the relevant company, SD: standard deviation of stock returns of the relevant company, ROA: return-on-asset of the relevant company, DD: dummy variable assigned according to the dividend policy of the relevant company, ID: dummy variable assigned according to whether the relevant company is included in ISE-100 index.
	*, ** denote significance at 5% and 1% levels, respectively.
	The figures in parentheses are the probability (p) values of the relevant coefficient.
	Probability values of coefficients are adjusted by White Heteroscedasticity-Consistent Standard Errors.

Cross-sectional regression analysis results presented in Table 4.4 suggest that preferences of institutional investors are impacted by firm size, liquidity, firm age, firm performance, total risk of stocks and being included in ISE-100 index. Institutional investors seem to invest in companies with big size, a long history in ISE, good performance, liquid stocks and low level of total risk. They also select companies included in ISE-100 index. Capital structure, dividend policy and cumulative stock returns do not seem to affect investment preferences of institutional investors.

Table 4.5: Cross-Sectional Regression Analysis Results (2006)

	Regression Coefficients
Constant term	-0,733 (0,007)**
MV	0,045 (0,000)**
TURN	-0,010 (0,089)*
ROA	0,269 (0,007)**
LEV	0,052 (0,257)
DD	0,018 (0,364)
AGE	-0,030 (0,878)
ID	0,045 (0,051)*
CR	-0,000 (0,989)
SD	-0,077 (0,574)
Adjusted R²	0,355
F Statistic	12,718 (0,000)**
Durbin-Watson Statistic	1,812
White Test Statistic	2,254 (0,005)**
Note:	In the regression model, IO (institutional ownership ratio of the relevant company) is the dependent variable. CR: cumulative return of the relevant stock in the most recent year, MV: natural logarithm of the market value of the relevant company, LEV: leverage ratio of the relevant company, AGE: natural logarithm of the period that spans from the first trading date in ISE to the analysis date of the relevant company, TURN: turnover ratio of the relevant company, SD: standard deviation of stock returns of the relevant company, ROA: return-on-asset of the relevant company, DD: dummy variable assigned according to the dividend policy of the relevant company, ID: dummy variable assigned according to whether the relevant company is included in ISE-100 index.
	*, ** denote significance at 5% and 1% levels, respectively.
	The figures in parentheses are the probability (p) values of the relevant coefficient.
	Probability values of coefficients are adjusted by White Heteroscedasticity-Consistent Standard Errors.

Cross-sectional regression analysis results depicted in Table 4.5 demonstrate similarities with the results of the year 2005. Institutional investors persist to invest in companies with big size, high performance and low liquidity. They also opt for companies included in ISE-100 index. On the other hand, although firm age and total risk seem to impact institutional investors' preferences in the year 2005, they do not appear to have role in the investment behaviors of institutional investors in 2006. Other variables, like in 2005, do not appear to influence investment decisions of institutional investors in 2006.

Table 4.6: Cross-Sectional Regression Analysis Results (2007)

	Regression Coefficients
Constant term	0,099 (0,627)
MV	0,600 (0,008)***
TURN	-0,030 (0,002)***
ROA	0,166 (0,058)*
LEV	0,102 (0,163)
DD	0,050 (0,095)*
AGE	0,024 (0,156)
ID	0,125 (0,000)***
CR	0,024 (0,284)
SD	-0,123 (0,043)**
Adjusted R²	0,383
F Statistic	9,435 (0,000)
Durbin-Watson Statistic	1,975
White Test Statistic	1,667 (0,009)
Note:	In the regression model, IO (institutional ownership ratio of the relevant company) is the dependent variable. CR: cumulative return of the relevant stock in the most recent year, MV: natural logarithm of the market value of the relevant company, LEV: leverage ratio of the relevant company, AGE: natural logarithm of the period that spans from the first trading date in ISE to the analysis date of the relevant company, TURN: turnover ratio of the relevant company, SD: standard deviation of stock returns of the relevant company, ROA: return-on-asset of the relevant company, DD: dummy variable assigned according to the dividend policy of the relevant company, ID: dummy variable assigned according to whether the relevant company is included in ISE-100 index.
	*, ** denote significance at 5% and 1% levels, respectively.
	The figures in parentheses are the probability (p) values of the relevant coefficient.
	Probability values of coefficients are adjusted by White Heteroscedasticity-Consistent Standard Errors.

Regression analysis findings of the year 2007 reported in Table 4.6 are not so different with the findings of the previous two years. Institutional investors maintain their interest in the companies with big size, low liquidity, high performance and low level of risk. They also invest in ISE-100 index companies. Like the previous years, capital structure, firm age and recent stock performance do not seem to have a role in investment attitudes of institutional investors in 2007. The only exception is the dividend policy. Contrary with the situation in the previous years, dividend policy appears as an important factor for institutional investments in 2007.

Table 4.7: Cross-Sectional Regression Analysis Results (General Evaluation)

	2005	2006	2007
Constant term	-1,009	-0,733	0,099
MV	0,049	0,045	0,600
TURN	-0,114	-0,010	-0,030
ROA	0,313	0,269	0,166
LEV	-0,001	0,052	0,102
DD	0,024	0,018	0,050
AGE	0,275	-0,030	0,024
ID	0,037	0,045	0,125
CR	-0,008	-0,001	0,024
SD	-0,200	-0,077	-0,123
Note:	In the regression model, IO (institutional ownership ratio of the relevant company) is the dependent variable. CR: cumulative return of the relevant stock in the most recent year, MV: natural logarithm of the market value of the relevant company, LEV: leverage ratio of the relevant company, AGE: natural logarithm of the period that spans from the first trading date in ISE to the analysis date of the relevant company, TURN: turnover ratio of the relevant company, SD: standard deviation of stock returns of the relevant company, ROA: return-on-asset of the relevant company, DD: dummy variable assigned according to the dividend policy of the relevant company, ID: dummy variable assigned according to whether the relevant company is included in ISE-100 index.		
Statistically significant coefficients are typed bold.			

Cross-sectional regression findings of the three years depicted in Table 4.7 reveal that specific factors impact investment preferences of institutional investors. Institutional investors invest in companies with big size, low liquidity, and high performance in a stable manner. They also prefer companies included in ISE-100 index. These findings are generally in line with the literature and prudent investment hypothesis. There are several studies that suggest a positive relationship between institutional ownership and firm size (Badrinath et al., 1989; Cready, 1994; Falkenstein, 1996; Badrinath et al., 1996; Eakins et al., 1998; Gompers and Metrick, 2001; Dahlquist and Robertsson, 2001; Bennett et al., 2003; Pinnuck, 2004; Aggarwal et al., 2005; Covrig et al., 2006; Brands et al., 2006; Ng and Wu, 2006; Bhattacharya and Graham, 2007; Oak and Dalbor, 2008). Likewise, some studies assert that institutional investors prefer companies included in stock indices (Cready, 1994; Clay, 2001; Gompers and Metrick, 2001). Thus, institutional investors pay attention to investor recognition and direct their investments in this way. The preference of institutional investors toward high performance companies is also consistent with prudent investment hypothesis and the literature (Clay, 2001; Bathala, Ma and Rao). This finding is also compatible with efficient-monitoring hypothesis. The efficient-monitoring

hypothesis suggests that institutional investors have greater expertise and information and can monitor management at lower cost than small investors can do. By using these advantages, institutional investors may positively impact performance of the companies they prefer (Bhattacharya and Graham, 2007). According to prudent investment hypothesis, institutional investors should invest in highly liquid firms (Badrinath et al., 1989). However, in this study, institutional investors appear to invest in companies with low liquidity. This finding is not compatible with most of the empirical studies (Badrinath et al., 1989; Badrinath et al., 1996; Eakins et al., 1998; Gompers and Metrick, 2001; Bennett et al., 2003; Pinnuck, 2004; Covrig et al., 2006). Only, Dahlquist and Robertsson (2001) detect a preference of institutional investors toward companies with low liquidity. The preference of institutional investors toward companies with low liquidity may be related with investment horizons of institutional investors. A number of empirical studies find that institutional investors develop long-term investment strategies rather than focusing on short-term investments (Hansen and Hill, 1991; Kochhar and David, 1996; Bushee, 1998; Wahal and McConnell, 2000). In this sense, preference of institutional investors toward ISE companies with low liquidity may be the result of their long-term investment strategies.

In some years, institutional investors seem to prefer old and less risky ISE companies. Institutional investors should bear a reasonable level of risk according to prudent investment principles (Badrinath et al., 1989). In this study, institutional investors invest in less risky stocks in the years 2005 and 2007. This finding is in line with the previous studies (Badrinath et al., 1989; Badrinath et al., 1996; Pinnuck, 2004). In the same manner, investing in an old company is conjectured to be consistent with prudent investment hypothesis (Badrinath et al., 1989). However, results of this study confirm this suggestion only for the year 2005. There is no apparent preference for firm age in the other years. The role of firm age on investment decisions are based on investor recognition and risk. Old companies are hypothesized to be more recognized and have lower level of risk (Ng and Wu, 2006). However, it has already been stated that institutional investors consider total risk of the companies when they make investment decisions. In this context, institutional investors appear to prefer variability of stock returns to firm age as a risk measure. Likewise, institutional investors seem to opt for being included in ISE-100 index as an investor recognition measure rather than firm age.

Capital structure, dividend policy and stock return performance of companies do not seem to have a role in investment decisions of institutional investors. This finding is not in line with the literature and prudent investment hypothesis (Badrinath et al., 1996; Aggarwal et al., 2005; Bhattacharya and Graham, 2007; Oak and Dalbor, 2008). Risk perception of institutional investors may be the reason of the lack of any linkage between leverage ratio and institutional ownership. The preference of institutional investors toward less risky stocks has already been demonstrated. In this sense, institutional investors may be thought as focusing on aggregate risk rather than concentrating on the components. Thus, total risk rather than financial risk may have a more prominent role in the investment decisions of institutional investors. In this study, dividend policy seems to impact investment decisions of institutional investors merely in 2007. Thus, although the preference is not so strong, institutional investors appear to invest in dividend paying companies. This finding is compatible with prudent investment hypothesis and the findings of previous studies that maintain a preference for dividend paying and high dividend yielding companies (Badrinath et al., 1996; Eakins et al., 1998; Dahlquist and Robertsson, 2001; Short et al., 2002; Grinstein and Michaely, 2005). In this study, historical stock returns do not have statistically significant coefficients. Thus, institutional investors seem to employ neither contrarian nor momentum investment strategies. This finding is not in line with the literature (Gompers and Metrick, 2001; Dahlquist and Robertsson, 2001; Bennett et al., 2003; Pinnuck, 2004; Bathala et al., 2005). Historical stock returns do not have a role in investment decisions of institutional investors.

White test results imply the existence of heteroscedasticity in all of the three regression models estimated. So, probability values of regression coefficients are adjusted by White Heteroscedasticity-Consistent Standard Errors. On the other hand, all of the correlation coefficients observed for three years are below 80 percent. Thus, there is not multicollinearity problem. Adjusted R^2 values of three years vary between 35 and 40 percent. As R^2 values are at low levels, explanatory power of the regression models would be considered low. Nevertheless, it is suggested to accept low R^2 values natural when studying with large cross-sectional samples (Gujarati, 2003).

V. Conclusion

Institutional investors are specialized financial institutions that manage savings on behalf of small investors toward specific objectives. These objectives would

be related with risk level, return and maturity of the investment (Davis and Steil, 2001). Preferences of institutional investors toward companies are conjectured to vary from the preferences of other investors. This difference appears to originate from three sources: agency theory, market anomalies and prudent investment hypothesis. Agency theory effect arises from the fact that institutional investors act as agents of other investors. After delegating the decision making authority to institutional investors, personal investors can only monitor the preferences of institutional investors. The reason of the market anomaly effect is that institutional investors allegedly channel their investment behaviors according to market anomalies. Since institutional investors have sufficient sources and expertise for tracking recent security price movements, they seem to have an advantage of exploiting these anomalies. Prudent investment hypothesis maintains that institutional investors should possess the funds of small investors prudently. Institutional investors should manage the acquired funds by obeying the contract and protecting the rights of small investors. These obligations may direct the investment patterns of institutional investors.

In this study, the factors that affect investment preferences of institutional investors toward ISE companies are investigated. The method used for examining the factors that impact investment preferences of institutional investors is cross-sectional regression analysis. Regression model is estimated for the years 2005, 2006 and 2007. In the cross-sectional regression models, institutional ownership ratio of each company is used as dependent variable, whereas firm characteristics are used as independent variables. Firm characteristics are, cumulative one-year stock return, standard deviation of stock returns, natural logarithm of market value, leverage ratio, firm age, turnover ratio, return-on-assets ratio, dividend payment dummy and ISE-100 index dummy.

Analysis results suggest that institutional investors invest prudently in ISE companies. During the 2005-2007 period, institutional investors seem to prefer companies with big size, low level of total risk and stock liquidity, high level of return-on-assets and companies listed in ISE-100 index. Institutional investors' preference toward dividend paying and old companies seem to be less apparent. On the other hand, recent stock returns and capital structures do not appear to have any roles in the investment decisions of institutional investors.

Demand of institutional investors toward companies with big size, high performance, low total risk and companies included in ISE-100 index appears to be consistent with prudent investment principles. Prudent investment hypothesis

suggests that investors should avoid risky investments and prefer safe ones. Investing in companies with big size, low risk, high performance and recognition among investors is obviously compatible with these priorities. Big companies have opportunities of having more transparent structures and easily reaching capital markets. Investing in companies with low risk both limits the possibility of bearing big losses and enhances the portfolio performance. The companies included in ISE-100 index are assumed to be big sized and recognized by investors. As institutional investors tend to invest in high performance companies, efficient monitoring hypothesis seems to be valid. The efficient-monitoring hypothesis maintains that institutional investors have greater expertise and information and can monitor management at lower cost than small investors can do. By using these advantages, institutional investors may positively impact performance of the companies they invest. However, demanding stocks with low liquidity is not in line with prudent investment hypothesis. The preference of institutional investors toward companies with low liquidity may be related with investment horizons. Empirical studies assert that institutional investors generate long-term investment strategies rather than focusing on short-term investments. Thus, preference of institutional investors toward ISE companies with low liquidity may be the result of having long-term investment strategies.

Preferences of institutional investors toward old and dividend paying companies are assumed to be compatible with prudent investment hypothesis. Finally, institutional investors do not seem to have explicit preference about historical stock returns and capital structure. This finding is not consistent with the assumptions of prudent investment hypothesis that requires investing in companies with large historical stock returns and low levels of debt. Findings of this study reveal that stock returns of the recent year do not have role in the preferences of institutional investors. In other words, institutional investors apply neither contrarian not momentum investment strategies. Thus, institutional investors concentrate on risk rather than focusing on returns. Risk perception of institutional investors may be the factor lying behind nonexistence of a relationship between institutional ownership and leverage ratio. The preference of institutional investors toward less risky stocks has already been examined. However, institutional investors do not seem to consider financial risk. In this sense, institutional investors may be thought as focusing on total risk rather than engaging with components.

Findings of this study are expected to contribute both finance literature and capital market agents. Contribution to the literature arises from the originality of the study. This study is one of the first studies that examine preferences of institutional investors toward ISE companies. In this sense, findings of this study would be useful for new studies that would examine effects of institutional investors on ISE companies. Capital market investors would also benefit from the results of this study. First, personal investors would observe the degree to which institutional investors obey prudent investment hypothesis by examining portfolio compositions of institutional investors. Thus, personal investors will be able to evaluate performance of institutional investors not only by performance measures but also by examining portfolio compositions. Second, personal investors would channel their own investments toward more efficient areas by monitoring portfolio compositions of institutional investors.

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THE EFFECT OF FOREIGN INVESTORS ON SECURITY MARKETS: THE CASE OF ISTANBUL STOCK EXCHANGE

Gülizar KURT GÜMÜŞ*

Abstract

The study aims at analyzing the effect of foreign portfolio investment on Istanbul Stock Exchange (ISE). ISE-100 index, price/earnings ratio, value of share trading and market capitalization are studied as indicators related with ISE. Foreign portfolio investment is examined as two subgroups: purchases and sales. Unit root tests, cointegration analysis and causality tests are employed in the study, which covers the period of 1997-2007.

The results show that there is a long-run relation (cointegration) between purchases and sales of foreign investors, and ISE-100 index, trading volume and market capitalization. The purchases of foreign investors have a positive effect and the sales of foreign investors have a negative effect on these indicators, and their explanatory power is quite high.

I. Introduction

Globalization is the most popular and matter in question concept in new world order. Financial globalization has arisen as a result of globalization. In 1980's, most of developing countries dismantled restrictions for foreign investors. The fact that reaching information has become more easier especially with developments in communication in 1990's provides formation of a commerce system and integration of financial markets in the world, as globalization sense (Frenkel, 2003). The financial liberalization and globalization in Turkey is a part of economic adaptation process that has started in the beginning of 1980's. With

* Asst. Prof. Dr. Gülizar Kurt Gümüş, Dokuz Eylül University, Faculty of Business, Department of Business Administration, Kaynaklar Yerleşkesi, Buca-İzmir.

Tel: 0 232 412 82 52 Fax: 0 232 453 50 62 E-mail: guluzar.kurt@deu.edu.tr

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the aim of paying debts and closing current account deficit and budget deficit, an open economy model has been applied under government control (Akyüz, 1990).

Globalization and as a result of it, financial globalization and financial liberalization processes have brought about the concept of foreign investment. Foreign investment which foreign capital flow enables to have rights of other countries' individuals and corporations in a country's tangible and intangible capital assets basically divides into two parts as foreign direct investment and foreign portfolio investment. Foreign direct investment is making a long term investment of an investor, except his own country, with the aim of having an active position in enterprise management (Karaçuka, 2001). When stocks are bought for investment, it is classified as foreign portfolio investment (Gökkent, 1997). Since it is more short term capital flow opposed to foreign direct investment, it is also defined as hot money.

Investors' making investments on assets and securities of other countries' stock markets is theoretically based on international capital asset pricing model (CAPM) and arbitrage pricing model. Because investors invest on international markets, foreign portfolio investment provides them to have more opportunities and options (Solnik and McLeavey, 2003).

In Turkey, foreign investors' portfolio investments have started after establishment of IMKB. From the opening of stock markets in 1989 to today, net portfolio investment has generally been positive and the purchases of foreign investors have become more and more. In last years, foreign investors' portfolio investments have entered to show a rising tendency. Although note payables' weight is pretty much in foreigners' portfolio investment, portfolio investments have shown a huge increase in last period. Recently, foreign investors have given a big part to stocks in their portfolio. Funds have the highest portfolio value within foreign groups making investments in Turkey and funds have been followed by legal entities.

Portfolio investments that have strong place in all markets and have been improving in value in each year are effected by diversified ways. According to literature researches, portfolio investments have generally effect on the security market development, price, earning, volatility, and capital costs and liability structure of firms (Bekaert and Harvey, 2003; Hargis and Ramanlal, 1997).

The aim of this study; is to search in detail portfolio investments' direction, development and changing by years that have reached in high values in Turkey and to show the effect of foreign portfolio investment on Istanbul Stock

Exchange (ISE) in different ways. The effect of foreign portfolio investment on ISE has been tried to be listed by using time-series analysis. The findings that are achieved from the study are targeted to state guiding results for investors and legislators.

The study; is an original project that is analysed in a detailed way by monthly data of foreign portfolio investments and is set the relationship between foreign portfolio investment and market value, trading value, index, and price/earning ratio. Besides, analysing the effects of foreign investors' portfolio investments into two separate subjects as purchases and sales provides more detail identification. At this point, the study is different from studies that merely analyse net foreign portfolio investment. In literature research, it is seen that there is no other study in this content and is thought that this study will fill in the gap in literature in Turkey.

In the study, first, the effects of foreign portfolio investments are analysed in terms of world literature and literature in Turkey. In latter chapters, the information about the method is given and the findings of analysis are discussed. In conclusion, there is a general evaluation.

II. The Effect of Foreign Portfolio Investment on Stock Market: Literature Review

Foreign portfolio investments have generally effect on development of stock market, price, earning, volatility and capital cost and liability structure of firms. There have been such studies for these effects also in literature. Studies that are done in literature about capital flows and foreign portfolio investments are the researches about the reasons and effects of restrictions for foreign investors and why investors prefer making investment in their own countries while making investment (Cooper and Kaplanis, 1994; Stulz and Wasserfallen, 1995; Kang and Stulz, 1997; Hiraki, Ito and Kuroki, 2003); studies that search for effects of foreign investment on economy (Chuhan, Claessens and Mamingi, 1998); studies that search for effects of foreign investment on stock market [effects on stock market development Levine and Zervos, 1996b; Levine and Zervos, 1998; Demeritte, 2000); effects of yields in stock market (Bohn and Tesar, 1996); Bekaert and Harvey, 1998) and effects on volatility (Choe, Kho and Stulz, 1998; Khambata, 2000)]; studies that search for the aim of making portfolio investment (making investment with the aim of international capital assets pricing model, international portfolio diversification and reducing risk) and studies analysing

the factors that affect on making investment in other countries (Taylor and Sarno, 1997; Bailey, Chung and Kang, 1999) as can be classified.

It is difficult to separate strictly and classify studies about the effects of foreign portfolio investment on security markets due to high relevance of the areas being searched. Basically studies in literature are in two groups as studies discussing the effects of security markets development and studies discussing the effects of yields and volatility on firms.

2.1. The Effect of Foreign Portfolio Investment on Stock Market Development

Hargis (1998), reaches a finding that foreign investment affects positively on market capitalization, trading volume and turnover ratio which are the indicators of stock market development. The findings are shown correlation with the studies of Levine and Zervos (1995b; 1996a; 1998) who find a relative relation between capital flow liberalization and security development index. Errunza (2001) finds effects of foreign portfolio investment on correlation between security market development (market value, trading volume, trading firm number), capital market integration, capital cost and markets.

Chue (2002), based on results of his study, defines that when developing countries' markets have become more integrated, returns of these markets become more sensitive against the external shocks - these shocks do not even affect these markets directly.

Bae, Bailey and Mao (2006) find that stock markets are applied less earnings management and forecasting earnings is more difficult after opening to foreign investors. Also, information is declared to public has become more and foreign investors have increased their assets in domestic markets.

Economists often declare financial market's development is an important factor that precipitates economic growth. (Hargis, 1998). Many writers and researchers display with their studies that there is a positive correlation between economic growth and financial markets development (Atje and Jovanovic, 1993; King and Levine, 1993; Levine and Zervos, 1995a). Klein and Olivei (2001; 2005) find a relation between liberalization and financial development. However, this relation is valid especially for developed markets. According to Knight' study (1998) about developing countries including also Turkey, there is a relation between stock market's capitalization and economic diversification. According to Demirgüç-Kunt and Levine's findings (1995), there is a high

correlation between the level of security market development and development of banks, defined as financial intermediary, and financial corporations except banks (finance firms, investment funds, intermediary corporations, and private pension funds).

In studies analysing effects of foreign portfolio investment on stock market and economy, market value, trading volume, firm number variables as the indicators about stock exchange development and financial development have been used. Generally, findings are shown that there is a change positively in variables about stock exchange after financial markets' openings. There are also results that there is a positive effect of stock market and financial market development on economy.

2.2. The Effect of Foreign Portfolio Investments on Firms, Stock Prices and Volatility

It is defended that investor has an important role in stock markets (Tversky and Kahneman, 1974; Lee, Shleifer and Thaler, 1991; Daniel, Hirshleifer and Subrahmanyam, 1998; Shleifer, 2000). According to this theory, while foreign capital flows and domestic stock earnings are moving together in short term, in long term they are moving back.

Demeritte (2000) and Bekaert and Harvey (1998) find that volatility in earnings decreases after liberalization. Kwain and Reyes (1997) also find that liberalization decreases volatility in Taiwan stock exchange and distribution of stock earnings is changed after liberalization. According to Kim and Singal's (2000b) results, although stock prices have increased after opening to foreign investors, they do not increase the volatility of security market. Stulz (1999) could not find a strong proof about a negative effect of capital flows on stock market performance. Tesar and Warner (1993) and Hamao and Mei (2001) could not find significant relation between Americans' transactions in foreign stocks and stock earnings. According to Jayasuriya (2005), in some developing countries volatility has increased after liberalization but, in some, it has decreased. Christoffersen, Chung and Errunza (2006) find that there is not change in market level in correlation neither developing countries' volatility nor world markets after liberalization. According to results of firm analysis, there are bigger drops in big firms' volatility when compared to small firms. Chiang and Kuo (2004) find that Taiwan Derivative Exchange has increased after liberalization. Huang and Yang (2001) find that trading volume explains

earning's volatility in Taiwan Stock Exchange. Lin (2006) finds that capital flows and market volatility have become stronger after Asian crisis.

Henry (2000) finds that in developing countries generally index earnings have increased after liberalization. Lin and Swanson (2007) find that volatility in developing countries is higher than volatility in developed countries. They also find that portfolio investments have a relation with earnings. Bowe and Domuta (2001) come to conclusion that both domestic and foreign investors are really important as a channel that connects price volatility together in Asian and American markets. Besides, they emphasize that this connection between Asian and American markets is independent situation from Asian markets' opening to foreign investors.

Dahlquist and Robertsson (2002) come to conclusion that net foreign purchases are relative with increase in price. The finding is also found that there is strong relation between the strenght in prices and firm's foreign owners, so, as foreigner's share in firm increases, the effects on price is more felt.

Tai (2007), Dahlquist and Robertsson (2002) show that capital cost decreases after liberalization and the analysed countries are more integrated with world markets. Bekaert and Harvey (2003) define that liberalization causes a little increase in correlation with world markets and a decrease in dividend yield. This decrease shows a decrease in capital cost and an improvement in growth opportunity. Demirgüç-Kunt (1992) find a positive and significant relation between firms' leverage level and stock market development. Schumkler and Vesperoni (2003) reason out that there is a decrease in long term liabilities of firms after liberalization. Mitton (2006) finds that liberalization provides important economic benefits while he analyses firms in 28 countries. They reach such positive results that the firms whose stocks can be invested by foreign investors show more growth, higher investment, higher profitability, more efficiency and lower leverage.

In summary, studies that is handled in this part analyse the effects of foreign portfolio investment on market returns, stock returns, volatility and firms. Generally, findings show decrease of volatility and capital cost of firms after liberalization.

2.3. Studies in Turkey

When the studies about foreign capital are analysed in Turkey, it is seen to be studied the effects of financial liberalization on capital markets and stocks with economic growth and foreign debt; (Akyüz and Boratav, 2002; Uygur, 2001;

Uluengin and Yentürk, 2001; Yüce, 1997; Güloğlu, 2003; Şimşek, 1995; Yılgör, 2006; Demir, 2004). In addition to effects of foreign investments, efficiency of international capital flows for Turkey is analysed within foreign capital subject (Kula, 2003). There are also studies about investment strategies applied by foreign investors and their performance (Somuncu and Karan, 2005; Dönmez, Karataş and Kiraz, 2004). Besides, the factors that cause capital flows are analysed (Balkan, Biçer and Yeldan, 2002).

Studies in Turkey analyse the effects of foreign portfolio investment on economy, savings, and crises with foreign investors' investment strategies and factors that are determined foreign portfolio investments. Generally, it is found that there is a negative effect of foreign investors on savings; they have effects on crises; they increase integration and they also create herd effect.

III. Data and Methodology¹

The basic aim of study is to show the effect of foreign portfolio investment on ISE. With the aim of finding effect on ISE at all points, new variables are also included in analysis in addition to the ones that are used in literature. Basis variables and their explanations are defined below:

- **Foreign Portfolio Investment:** In this study, the numbers are used recorded by ISE as foreign investment, evaluated under this subjects, signified as foreign investment in statistics. ISE publishes foreign portfolio investment of foreign investors in two categories as purchases and sales. As it is thought that the effect enables to identify at all points, two datas are used separately and their results are compared with each other.
- **Index:** In this study, index data given by ISE is going to be used. The effect on ISE-100 index is analysed.
- **Trading Volume:** Monthly trading value is used
- **Market Value:** End-of-month market value is used.
- **Price/Earnings Ratio:** Price/earning ratio is used in order to see the effect of foreign investors on both price and earning.

Because proportion and value based variables are used together in the analysis, value based (foreign investors' purchases, foreign investors' sales trading volume and market value) are analysed by being converted natural logs. The abbreviations about variables used in study are defined in Table 3.1:

¹ Detailed explanation about unit root tests, cointegration tests and causality tests take place in the appendix part.

Table 3.1: Variables and Abbreviations

Variable	Abbreviation
Foreign Portfolio Investment (Purchase)	YPYALIS
Foreign Portfolio Investment (Sales) ²	YPYSATIS
Market Value	PD
Trading Volume	ISLHAC
ISE-100 Index	ENDEKS-100
Price/Earning ratio	FKAZ

In study, the period between January-1997 and August-2007 is analysed. Monthly data is used. All variables are used in dollar value. Foreign portfolio investments, index values (ISE-100) and price/earnings ratio are had from ISE monthly bulletins and periodic bulletins. Market value and trading volume are taken from statistics of World Federation of Exchanges (WFE).

Descriptive statistics are done in order to show the effect of foreign portfolio investment on index, trading volume, transaction number, market value and price/earnings ratio. The effect of an independent variable on dependent variable is able to be analysed with regression analysis. However, superior regression can be seen when serials that belong to variables contain time-series feature. Also, in the form of discovering cointegration, regressions that contain unstatic variables do not have a meaning and regression analysis gives an information about long term relation of these variables (Enders, 1995). For this reason, time-series analysis is preferred as a method. The relation between variables is shown in a detail way by using causality analysis, cointegration analysis and unit root tests as time series analysis. Applied cointegration analyses provide to discover how much time the effect of shocks takes to repair that results from causes except these variables in relation between ISE and foreign portfolio investments.

The effect of portfolio investments (purchase and sale) of foreign investors on index (ISE-100), market value, trading volume and price/earning ratio is tested by two-tier cointegration analysis. In order to be able to carry out cointegration analysis, first of all serials is became stationary by being deseasonalized and also it is checked whether serials contain unit root or not. Series that contains same level of unit root is subject to cointegration test. Series that does not contain unit root is made regression analysis. And for the series that is not discovered cointegration is made causality test.

² Foreign investors' sales are included in analysis as positive values in order to make analysis. However, while results are being evaluated, they are taken into account as negative values and findings are commented as negative values

IV. Findings

4.1 Descriptive Statistics

1997 – 2007 monthly averages according to Table 4.1 and 4.2 in which there are descriptive statistics related to used variables: It is happened as foreign investors' purchases (1638.47 million \$), foreign investors' sales (1566.50 million \$), ISE-100 (954.69), price/earnings ratio (29.96), trading volume (10878.71) and stock market value (80957.35 million \$)

Table 4.1: Descriptive Statistics

Variables	Mean	Median	Maximum	Minimum	Std. Dev.	N
ENDEKS100	954,69	801,94	2413,39	292,41	507,7	128
FKAZ	29,96	14,38	591,91	5,8	68,3	128
ISLHAC (million\$)	10878,71	8720,02	34118,25	2117,92	6842,96	128
PD (million\$)	80957,35	60112,65	239063,8	24797,32	51625,33	128

Table 4.2. Descriptive Statistics (II)

	YPYALIS (million \$)	YPYSATIS (million \$)
Mean	1638,47	1566,50
Median	829,56	833,76
Maximum	9603,46	9170,67
Minimum	132,53	118,64
Std. dev.	1704,41	1600,06
N	128	128

Even though foreign investment decreases in analysed period, it never stops at all. Foreigners continue consistently their purchases in these times. The average of purchases and sales in foreign portfolio is very close to each other. According to this, purchases of foreign investors display continuity as well as sales of foreign investors. As per descriptive statistics, propensity-to-purchase of foreign investors on ISE is higher than propensity-to-sale.

4.2. Unit Root Results

According to unit root results in Table 4.3, each of all series of index-100, Price/earnings ratio, trading volume, market value, foreign portfolio investments (purchase) and foreign portfolio investments (sale) contain one unit root. For this reason, these series are stationary in first difference and it is defined as I(1)

Table 4.3. Augmented DF Unit Root Results

Variable	Augmented DF Unit Root (No Trend)
INDEX-100	
Level	-0,660
The first difference	-11,118***
PRICE/EARNINGS	
Level	-2,779
The first difference	-7,098***
TRADE VOLUME	
Level	0,674
The first difference	-11,531***
MARKET VALUE	
Level	-0,651
The first difference	-12,173***
FOREIGN PORTFOLIO INV. (PUR.)	
Level	1,191
The first difference	-10,910***
FOREIGN PORTFOLIO INV. (SALE)	
Level	0,477
The first difference	-10,211

Note: 1. *** It shows that null hypothesis relating to existence of unit root is rejected in 1% error level.

2. Critic values of MacKinnon' (1991) are used.

4.3. Cointegration Analysis Result Relating to Purchases of Foreign Investors in Stock Market

After it is understood that all series of purchases of foreign investors in stock market and ISE-100, price/earnings ratio, trading volume, and market value are integrated from the first degree, the first stage of Engle-Granger method of static long term regression is estimated. Later on, it is tested if estimated long term regression model is stationary or not. At last, for stationary models of error term is analysed if Error Correction Mechanism works or not. Being able to interpret results of long term regression model which is estimated in the first stage of cointegration analysis depends on being stationary of error terms that is taken from model and working of error correction mechanism. For this reason, while interpreting analysis findings, implications relating to first regression model are done after the second stage of Engle-Granger method is carried out and results relating to error correction mechanism are achieved.

4.3.1. Purchases of Foreign Investors in Stock Market and Its Relation with ISE-100 Index

As first stage of cointegration analysis, the relation between purchases of foreign investors in stock market and ISE-100 index is estimated by regression analysis.

Results of regression analysis which is estimated long term relation between these variables is shown in Table 4.4. Cointegration relation between ISE-100 and purchases of foreign investors in stock market is analysed by testing regression model that if error terms are stationary or not. According to results of unit root test of error terms that are taken from Model 1.1.1, error terms are stationary. [I(0)] (Table 4.5). So, null hypothesis that shows there is no cointegration is rejected by 1% margin of error. In another words, the first stage of Engle-Granger method shows that there is a cointegration relation between ISE-100 and purchases of foreign investors in stock market.

Table 4.4. The First Stage of Engle-Granger Method: Long Term Cointegration Equation (ISE-100 Index and Purchases of Foreigners)

	Dependent Variable	Constant	Independent Variable
Model 1.1.1	ENDEKS-100	C	logYPY Alış
Coefficient		-2017 (-11,805)***	429 (17,550)***
$R^2=0,71$ Adjusted $R^2=0,71$ F Statics=307,9			

Note:1. Values in parenthesis are t statistics.
2. *** it is significant in %1 level.

Table 4.5. Augmented DF Test Result Relating to Error Term (ISE-100 Index and Purchases of Foreigners)

Variable	Augmented DF Test (No Trend)
U_t Level	-2,818***

Note: 1. *** it is significant in 1% level.

Results relating to error correction model that is the second stage of Engle-Granger method are shown in Table 4.6. Being negative and statistically significant of error correction term shows that error correction mechanism works as it is estimated. Because, when there is a cointegration relation between two variables, error correction mechanism is had to work. According to results, error correction mechanism shows that long term deviations are going to amend within about 7 months (1/0.142). The fact that error correction mechanism works provides to interprete the first estimated model. Accordingly, purchases of

foreign investors in stock market affect ISE-100 positively; 1% change in purchases of foreign investors in stock market causes 429 units of change in ISE-100; There is a long term cointegration relation between ISE-100 index and purchases of foreign investors in stock market and deviations that is result from a reason except these variables is going to amend within 7 months.

Table 4.6. The Second Stage of Engle-Granger Method: Error Correction (ISE-100 Index and Purchases of Foreigners)

	Dependent Var.	Independent Variable			
Model 1.1.2	Δ ENDEKS-100	Δ logYPY Alış	Δ logYPY Alış _{t-1}	Δ ENDEKS-100 _{t-1}	u_{t-1}
Coefficient		185,8 (6,947)***	-193,1 (29,597)***	1,064 (-6,876)***	-0,142 (-2,748)***
$R^2=0,95$					
Corrected $R^2=0,95$					

Note: 1. Values in parenthesis are t statistics.

2. *** it is significant in 1% level.

4.3.2. Purchases of Foreign Investors and its Relation with Price/Earnings Ratio

In the first stage of cointegration analysis, the relation between purchases of foreign investors and price/earnings ratio is estimated by regression analysis (Table 4.7.) and with the aim of finding cointegration relation between these variables, error terms that is taken from Model 1.2.1 is tested if they contain unit root or not. According to unit root test results, error term do not contain unit root and thus, it is stationary [I(0)] (Table 4.8.). The fact that error term is stationary shows relating to no cointegration in variables that null hypothesis is rejected by 1% margin of error. In another words, there is a cointegration relation between purchases of foreign investors in stock market and price/earnings ratio.

Table 4.7. The First Stage of Engle-Granger Method: Long Term Cointegration Equation (Price/Earnings Ratio and Purchases of Foreigners)

	Dependent Variable	Constant	Independent Variable
Model 1.2.1	FKAZ	C	logYPY ALIS
Coefficient		89,919 (2,601)***	-8,885 (-1,795)*
$R^2=0,03$			
Adjusted $R^2=0,02$			
F Statistics=3,223			

Note: 1. Values in parenthesis are t statistics.

2. *** and by order of * shows that it is significant in %1 and %10 level.

**Table 4.8. Augmented DF Test Result Relating to Error Term
(Price/Earning Ratio and Purchases of Foreigners)**

Variable	Augmented DF Test Statics (No Trend)
u_t Level	-5,958***

Not: 1. *** it is significant in 1% level.

Results relating to estimating error correction model which is the second stage of Engle-Granger two-step cointegration method are shown in Table 4.9. Coefficient of error correction term is negative as estimated, but not statistically significant. This result shows that error correction mechanism does not work and makes reliability of taken cointegration finding decrease at the preliminary stage. For this reason, in additional, it is needed to find whether Granger causality analysis has a bilateral causality relation or not and to check cointegration relation. At the end of applied Granger causality analysis, a causality relation is not found between purchases of foreigners in stock market and price/earnings ratio. According to the findings, there is no cointegration relation between purchases of foreign investors in stock market and price/earnings ratio.³

**Table 4.9. The Second Stage of Engle-Granger Method: Error Correction
(Price/Earnings Ratio and Purchases of Foreigners)**

	Dependent Var.	Independent Variable			
Model 1.2.2	$\Delta FKAZ$	$\Delta \log YPY$ ALIS	$\Delta \log YPY$ ALIS _{t-1}	$\Delta FKAZ_{t-1}$	u_{t-1}
Coefficient		4,514 (0,631)	-4,672 (-0,658)	1,036 (4,749)***	-0,199 (-0,889)
R²=0,71					
Adjusted R²=0,70					

Note: 1. Values in parenthesis are t statistics.

2. *** it is significant in 1% level.

³ Firms on ISE have started to prepare their financial tables according to International Financial Reporting Standards. The period between 1997-2005 was reanalysed with the aim of testing the effect of the change on analysis. However, there is no difference in findings.

4.3.3. Purchases of Foreign Investors in Stock Market and its Relation with Trading Volume

As a first step of analysing of cointegration relation between purchases of foreign investors in stock market and stock market trading volume, long term relation between variables is estimated. (Table 4.10.) and checked whether error terms, taken from regression model, contain unit root or not (Model 1.3.1). According to unit root test results, it is found that error term is stationary. $I(0)$ (Table 4.11.). As a result of being stationery of error terms, null hypothesis of noncointegration is rejected in 1% level. According to this result, the first stage of Engle-Granger method shows that there is cointegration between purchases of foreign investors in stock market and stock market trading volume.

Table 4.10. The first stage of Engle-Granger Method: Long Term Cointegration Equation (Trading Volume and Puchases of Investors)

	Dependent Variable	Constant	Independent Variable
Model 1.3.1	logISL HAC	C	logYPY ALIS
Coefficient		4,769 (33,346)***	0,624 (30,497)***
R²=0,88 Adjusted R²=0,87 F Statistics=930,05			

Note: 1. Values in parenthesis are t statistics.
2. *** it is significant in 1% level.

Table 4.11. Augmented DF Test Result Relating to Error Term (Trading Volume and Puchases of Investors)

Variable	Augmented DF Test Statics (No Trend)
u _t Level	-6,070***

Note: 1. *** it is significant in 1% level.

Results relating to estimating error correction model which is the second stage of Engle-Granger two-step cointegration method are shown in Table 4.12. The fact that coefficient of error term is negative, but not statistically significant shows that error correction mechanism works. In addition to this, as a result of an effect that comes from outside, derivations are going to amend within about 3

months (1/0.349) from long term. Since relating to error correction mechanism, results are as it's estimated, estimated first regression model can be interpreted. Accordingly, purchases of foreign investors in stock market affect trading volume positively; 1% change in purchases of foreign investors in stock market causes 0.624 % change in trading volume. There is a long term cointegration relation between trading volume and purchases of foreign investors in stock market and deviations that result from a reason except these variables are going to amend within 3 months.

Table 4.12. The second Stage of Engle-Granger Method: Error Correction Model (Trading Volume and Purchases of Investors)

	Dependent Var.	Independent Variable			
Model 1.3.2	$\Delta \log \text{ISL HAC}$	$\Delta \log \text{YPY ALIS}$	$\Delta \log \text{YPY ALIS}_{t-1}$	$\Delta \log \text{ISL HAC}_{t-1}$	u_{t-1}
Coefficient		0,785 (16,872)***	-0,771 (-14,774)***	0,989 (39,389)***	-0,349 (-4,198)***
R²=0,92					
Adjusted R²=0,92					

Note: 1. Values in parenthesis are t statistics.
2. *** it is significant in 1% level.

4.3.4. Purchases of Foreign Investors in Stock Market and its Relation with Market Value

In the first stage of cointegration analysis, long term relation between purchases of foreign investors in stock market and market value of ISE is estimated by regression analysis (Table 4.13.). Later on, with the aim of finding cointegration relation between these variables, error terms that are taken from Model 1.4.1 are tested if they contain unit root or not. According to unit root test results, error term is stationary [I(0)] (Table 4.14.). The fact that error term does not contain unit root and thus it is stationary shows about no cointegration between variables that null hypothesis is rejected by 1% margin of error. According to this result, the first stage of Engle-Granger model shows that there is a cointegration relation between purchases of foreign investors in stock market and market value.

Tablo 4.13. The First Stage of Engle-Granger Method: Long Term Cointegration Equation (Market Value and Purchases of Foreigners)

	Dependent Variable	Constant	INdependent Variable
Model 1.4.1	logPD	C	logYPY ALIS
Coefficient		7,405 (54,223)***	0,538 (27,517)***
R²=0,86 Corrected R²=0,86 F Statistics=757,15			

Note: 1. Values in parenthesis are t statistics.

2. *** it is significant in 1% level.

Tablo 4.14. Augmented DF Test Result Relating to Error Term (Market Value and Purchases of Foreigners)

Variable	Augmented DF Test Statistics (No Trend)
u _t Level	-2,792***

Note: 1. *** it is significant in 15 level.

In the second stage of Engle-Granger method error correction model is estimated (Table 4.15.). As estimated error term coefficient is negative and statistically significant. This result shows that error correction mechanism works. According to results, derivations are going to amend within about 6 months (1/0.169) from long term. The fact that error correction mechanism works provide to be able to comment on first estimated model. Purchases of foreign investors in stock market affect market value positively; 1% change in purchases of foreign investors in stock market causes 0.538 change in market value. Also there is a long term cointegration relation between market value and purchases of foreign investors in stock market and deviations that result from a reason except these variables are going to amend within 6 months.

Tablo 4.15. The second Stage of Engle-Granger Method: Error Correction Model (Market Value and Purchases of Foreigners)

	Dependent Var.	Independent Variable			
Model 1.4.2	$\Delta \log PD$	$\Delta \log YPY$ ALIS	$\Delta \log YPY$ ALIS _{t-1}	$\Delta \log PD_{t-1}$	u _{t-1}
Coefficient		0,257 (9,163)***	-0,240 (-7,992)***	0,990 (98,418)***	-0,169 (-3,419)***
R²=0,96 Adjusted R²=0,96					

Note: 1. Values in parenthesis are t statistics.

2. *** it is significant in 1% level.

4.4. Cointegration Analysis Results relating to Sales of Foreign Investors in Stock Market

After it is understood that Series of Sales of foreign investors in stock market and ISE-100, ISE-50, ISE-all index, trading firm number in stock market, price/earning ratio, trading volume and trading number in stock market, market value and dividend yield are integrated, Static long term regression which is the first stage of Engle-Granger method is estimated. Later on, estimated long term regression model is tested if error term works or not. At last, error correction Mechanism is tested whether it works or not for models that error term is stationary.

4.4.1. Sales of Foreign Investors in Stock Market and its Relation with ISE-100

As first stage of cointegration analysis, the relation between sales of foreign investors in stock market and ISE-100 index is estimated by regression analysis. Regression analysis results which is estimated long term relation between these variables are shown in Table 4.16. Cointegration relation between ISE-100 and sales of foreign investors in stock market is analysed by testing regression model (Model 2.1.1) that if error terms are stationary or not and it is found that all error terms are stationary. [I(0)] (Table 4.17.). So, null hypothesis relating to no cointegration is rejected by 1% margin of error. In another words, the first stage of Engle-Granger method shows that there is a cointegration relation between ISE-100 and sales of foreign investors in stock market.

Table 4.16. The First Stage of Engle-Granger Method: Long Term Cointegration Equation (ISE-100 Index and Sales of Foreigners)

	Dependent Variable	Constant	Independent Variable
Model 2.1.1	ENDEKS-100	C	logYPY SATIS
Coefficient		2096,7 (-12,837)***	-442,86 (18,852)***
R²=0,73 Adjusted R²=0,73 F Statistics=355,40			

Note: 1. Values in parenthesis are t statistics.

2. *** it is significant in 1% level.

Table 4.17. Augmented DF Test Result Relating to Error Term (ISE-100 Index and Sales of Foreigners)

Variable	Augmented DF Test Statistics (No Trend)
u_{t-1} Level	-2,525***

Note: 1. *** it is significant in 1% level.

Results relating to estimating error correction model which is the second stage of Engle-Granger two-step cointegration method are shown in Table 4.18. The fact that error correction term coefficient is negative, but statistically significant as estimated shows that error correction mechanism works. Because when there is a cointegration relation between two variables, error correction mechanism is needed to work. According to results, derivations are going to amend within about 8 months ($1/0.124$) from long term. The fact that error correction mechanism works provides to be able to comment on first estimated model. According to this, sales of foreign investors in stock market affect ISE-100 negatively; 1% change in sales of foreign investors in stock market causes 443 unit of change in ISE-100. Also there is a long term cointegration relation between ISE-100 and sales of foreign investors in stock market and deviations that result from a reason except these variables are going to amend within 8 months.

Table 4.18. The second Stage of Engle-Granger Method: Error Correction Model (ISE-100 Index and Sales of Foreigners)

	Dependent Var.	Independent Variable			
Model 2.1.2	Δ ENDEKS-100	Δ logYPY SATIS	Δ logYPY SATIS _{t-1}	Δ ENDEKS-100 _{t-1}	u_{t-1}
Coefficient		-157,92 (5,319)***	162,39 (-5,230)***	1,043 (28,045)***	-0,124 (-2,166)**
R²=0,94					
Adjusted R²=0,94					

Note: 1. Values in parenthesis are t statistics.

2. *** and by order of ** shows that it is significant in %1 and %5 level.

4.4.2 Sales of Foreign Investors and its Relation with Price/Earnings Ratio

In the first stage of cointegration analysis, sales of foreign investors and price/earning ratio is estimated by regression analysis (Table 4.19) and with the aim of finding cointegration relation between these variables, error terms that is

taken from Model 2.2.1 is tested if they contain unit root or not. According to unit root test results, error term does not contain unit root and thus, it is stationary [I(0)] (Table 4.20.). The fact that error term is stationary shows relating to no cointegration in variables that null hypothesis is rejected by 1% margin of error. In another words, there is a cointegration relation between purchases of foreign investors in stock market and price/earning ratio.

Table 4.19. The First Stage of Engle-Granger Method: Long Term Cointegration Equation (Price/Earnings Ratio and Sales of Foreigners)

	Dependent Variable	Constant	Independent Variable
Model 2.2.1	FKAZ	C	logYPY SATIS
Coefficient		-91,419 (2,629)***	9,143 (-1,828)*
$R^2=0,02$ Adjusted $R^2=0,03$ F Statistics=3,34			

Note: 1. Values in parenthesis are t statistics.

2. *** and by order of * shows that it is significant in %1 and %10 level.

Table 4.20. Augmented DF Test Result Relating to Error Term (Price/Earning Ratio and Sales of Foreigners)

Variable	Augmented DF Test Statistics (No Trend)
u_t Level	-2,986***

Note: 1. *** it is significant in 1% level.

Results relating to estimating error correction model which is the second stage of Engle-Granger two-step cointegration method are shown in Table 4.21. Coefficient of error correction term is negative as estimated, but not statistically significant. This result shows that error correction mechanism does not work and makes reliability of taken cointegration finding decrease at the preliminary stage. For this reason, in additional, it is needed to find whether there is bilateral causality relation with Granger causality analysis or not and needed to check cointegration relation. As a result of applied Granger causality analysis, a causality relation is not found between sales of foreigners in stock market and price/earning ratio. According to the findings, there is no cointegration relation between sales of foreign investors in stock market and price/earnings ratio.⁴

⁴ Firms on ISE have started to prepare their financial tables according to International Financial Reporting Standards. The period between 1997-2005 was reanalysed with the aim of testing the effect of the change on analysis. However, there is no difference in findings.

Table 4.21 The Second Stage of Engle-Granger Method: Error Correction Model (Price/Earnings and Sales of Foreigners)

	Dependent Var.	Independent Variable			
Model 2.2.2	$\Delta FKAZ$	$\Delta \log YPY$ SATIS	$\Delta \log YPY$ SATIS _{t-1}	$\Delta FKAZ_{t-1}$	u_{t-1}
Coefficient		6,875 (0,949)	-7,212 (-1,004)	1,076 (4,999)***	-0,241 (-1,092)
$R^2=0,71$ Adjusted $R^2=0,70$					

Note: 1. Values in parenthesis are t statistics.

2. *** it is significant in 1% level.

4.4.3. Sales of Foreign Investors and its Relation with Trading Volume

As a first step of analysing of cointegration relation between sales of foreign investors in stock market and stock market trading volume, long term relation between variables is estimated by regression model. (Table 4.22.) and checked whether error terms, taken from regression model, contain unit root or not. (Model 2.3.1) According to unit root test results, it is found that error term is stationary. [I(0)] (Table 4.23.). Due to being stationery of error terms, null hypothesis relating to no cointegration is rejected in 1% level. According to this result, the first stage of Engle-Granger method shows that there is cointegration between sales of foreign investors in stock market and stock market trading volume.

Table 4.22. The First Stage of Engle-Granger Method: Long Term Cointegration Equation (Trading Volume and Sales of Foreigners)

	Dependent Variable	Constant	Independent Variable
Model 2.3.1	ISL HAC	C	logYPY SATIS
Coefficient		4,66 (37,529)***	-0,642 (35,911)***
$R^2=0,91$ Adjusted $R^2=0,91$ F Statistics=1289,61			

Note: 1. Values in parenthesis are t statistics.

2. *** it is significant in 1% level.

Table 4.23. Augmented DF Test Result Relating to Error Term (Trading Volume and Sales of Foreigners)

Variable	Augmented DF Test Statistics (No Trend)
u_t Level	-7,099***

Note: 1. *** it is significant in 1% level.

Results relating to estimating error correction model which is the second stage of Engle-Granger two-step cointegration method are shown in Table 4.24. The fact that coefficient of error term is negative, but statistically significant shows that error correction mechanism works. In addition to this, as a result of an effect that comes from outside, derivations are going to amend within about 2 months (1/0.499) from long term. Since results relating to error correction mechanism, are as it's estimated, estimated first regression model can be interpreted. Accordingly, sales of foreign investors in stock market affect trading volume negatively; 1% change in sales of foreign investors in stock market causes 0.624 of change in trading volume; There is a long term cointegration relation between trading volume and sales of foreign investors in stock market and deviations that result from a reason except these variables are going to amend within 2 months.

Table 4.24. The Second Stage of Engle-Granger Method: Error Correction Model Trading Volume and Sales of Foreigners)

	Dependent Var.	Independent Variable			
Model 2.3.2	$\Delta \log \text{ISL HAC}$	$\Delta \log \text{YPY SATIS}$	$\Delta \log \text{YPY SATIS}_{t-1}$	$\Delta \log \text{ISL HAC}_{t-1}$	u_{t-1}
Coefficient		-0,820 (19,873)***	0,832 (-17,579)***	1,009 (43,198)***	-0,499 (-6,049)***
$R^2=0,94$					
Adjusted $R^2=0,93$					

Note: 1. Values in parenthesis are t statistics.
2. *** it is significant in 1% level.

4.4.4. Sales of Foreign Investors and its Relation with Market Value

In the first stage of cointegration analysis, long term relation between sales of foreign investors in stock market and market value is estimated by regression analysis. (Table 4.25.). Later on, with the aim of finding cointegration relation between these variables, error terms that are taken from Model 2.4.1 are tested if they contain unit root or not. According to unit root test results, error term is stationary. [I(0)] (Table 4.26.). The fact that error term does not contain unit root and thus, it is stationary shows about no cointegration between variables that null hypothesis is rejected by 1% margin of error. According to this result, the first stage of Engle-Granger model shows that there is a cointegration relation between sales of foreign investors in stock market and market value.

Table 4.25. The First Stage of Engle-Granger Method: Long Term Cointegration Equation (Market Value and Sales of Foreigners)

	Dependent Variable	Results	Independent Variable
Model 2.4.1	logPD	C	logYPY SATIS
Coefficient		7,352 (56,134)***	-0,548 (29,101)***
$R^2=0,87$ Adjusted $R^2=0,87$ F Statistics=846,89			

Note: 1. Values in parenthesis are t statistics.

2. *** it is significant in 15 level.

Table 4.26. Augmented DF Test Results Relating to Error Term (Market Value and Sales of Foreigners)

Variable	Augmented DF Test Statistics (No Trend)
u_t Level	-3,189***

Note: 1. *** it is significant in 15 level.

In the second stage of Engle-Granger method error correction model is estimated (Table 4.27.). Coefficient of error term is negative as estimated and statistically significant. According to results, derivations are going to amend within about 5 months (1/0.190) from long term. The fact that error correction mechanism works provides to be able to be commented on first estimated model. As to this, sales of foreign investors in stock market affect market value negatively; 1% change in sales of foreign investors in stock market causes 0.548% of change in market value; Also there is a long term cointegration relation between market value and sales of foreign investors in stock market and deviations that result from a reason except these variables are going to amend within 5 months.

Table 4.27. The Second Stage of Engle-Granger Method: Error Correction (Market Value and Sales of Foreigners)

	Dependent Var.	Independent Variable			
Model 2.4.2	$\Delta \log PD$	$\Delta \log YPY$ SATIS	$\Delta \log YPY$ SATIS _{t-1}	$\Delta \log PD_{t-1}$	u_{t-1}
Coefficient		-0,229 (6,939)***	0,220 (-6,286)***	0,995 (88,281)***	-0,190 (-3,186)***
$R^2=0,95$ Adjusted $R^2=0,95$					

Note: 1. Values in parenthesis are t statistics.

2. *** it is significant in 1% level.

V. Conclusion

The aim of this study is to analyse the effects of foreign investors on ISE. The variables analysed in the study are ISE-100 Index, price/earnings ratio, trading volume and market value of ISE. Foreign investment is discussed in two groups as purchase and sale in stock market. The study covers the period between January 1997 and August 2007.

The effect of foreign investors on stock market is analysed by Engle-Granger two-step cointegration analysis. By the findings that are taken from model, the effect of foreign investments varieties on variables relating to ISE is shown and it is tested if there is relation between variables in long term and also it is determined how much time it takes to remove a deviation that occurs in long term in relation between variables.

According to two step cointegration analysis results relating to relation between purchases-sales of foreign investors in stock market and ISE variables, there is a long term cointegration relation between foreign investors' stock purchases-sales and ISE-100, trading volume and market value.

When results are compared relating to error correction mechanism that is found for purchases and sales of foreign investors, a deterioration that occurs in long term in relation between sales of foreigners and ISE-100 amends in longer term according as a deviation between purchases of foreigners and index. It is in direct contradiction for market value and trading volume. According to the results, relation between sales of foreign investors in stock market and index, and relation between purchases of foreign investors with market value and trading volume are more sensitive against the external conditions. For this reason, the effect of deterioration in these relations will be longer in crisis periods.

Strong relation and interaction between ISE variables and investors' purchases and sales shows that while legislator is making arrangement about foreign investors, effects of these arrangements have to be taken into consideration. Also, effects of foreign investors on stock market are rather big because their shares in trading stocks on ISE are high. Effects of purchases and sales of foreign investors on market are felt more because number of investor is less and more importantly, rate of portfolio value of foreign investors (especially in foreign funds and corporations) are higher than the rate of total portfolio value in market. Finally, the relation between index and foreign investors provides firms to get results relating to their capital costs. According to this, through long term positive relation between foreign investors and ISE-100, as purchases of foreign investors increase, stock prices increase and index also increases in parallel with the rise. Rise in prices affects capital costs of firms indirectly.

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APPENDIX

Unit Root Test, Cointegration Analysis and Casuality Analysis

Unit Root Tests

In order to show time series feature of a stochastic equality, necessary conditions depends on carrying trend feature of variables. If variables carry trend feature, this stochastic model is a long term model. (Vogelvang, 2005).

In order to make a convenient econometric model to statistical assumptions, it is needed to know if variables carry trend feature or not. If variables carry trend feature, it is necessary to be searched which trend it is (deterministic or stochastic). The stochastic process with N observations has n amount of random variables. These random variables do not show an independent distribution. Time series is a time incision. If a time series trend shows linear feature with time, taking the first difference of the observation is enough to make process stationary. A time series variable(Y_t) that carries linear trend future is defined as below (Vogelvang, 2005):

$$Y_t = a_0 + a_1 t + u_t \quad (1)$$

This series is brought to stationary by correcting as below:

$$Y_t - a_0 - a_1 t = u_t \quad (2)$$

Later on, it is evaluated as a random walk process that is acted to all directions and equality in below is consisted:

$$Y_t = Y_{t-1} + u_t \quad (3)$$

This process is stationary in terms of mean but not random in terms of varence. For this reason, equality at above is rewritten by adding a lag operator. :

$$Y_t = [1/(1-L)] u \quad (4)$$

Random walk process is developed by adding a stationary term. Thus, stochastic trend of a nonstationary variable is defined as below:

$$Y_t = \beta_0 + Y_{t-1} + u_t \quad (5)$$

As a stationary process this equality expression is as :

$$Y_t = \beta_1 Y_{t-1} + u_t \quad (6)$$

Null hypothesis in here is like this : $(H_0) \beta_1 = 1$

If the value of β_1 is equal to 1, Y_t variable is affected by value of previous term. If β_1 value is smaller than 1, there is an effect of previous term on but this effect disappear short term later (MacKinnon, 1991).

Whether a time series has trend is determined by unit root tests or analysing the graphs of series. Making regression of a value of series with the previous values is enough for unit root testing (Göktaş, 2005). Unit Root Tests are Dickey-Fuller, augmented Dickey-Fuller, P unit root tests are Dickey-Fuller and augmented Dickey-Fuller tests. Augmented Dickey-Fuller test includes lag values of dependent variable in the model and it assumes that the process is p-order-autoregressive (Sevültekin and Nargeleçekenler, 2005). Due to the probability that there is autoregression in error term and probability that all time series is not defined as first-order-autoregressive processes, in this study augmented Dickey-Fuller test is used.

In econometrics, time series that has unit root are defined as random walk time series. Financial time series is random walk time series and for this reason, generally it is unstationary series (Kutlar, 1998).

If series that is analysed carries unit root $[I(1)]$, it is needed to bring it to stationary. Cointegration analysis should be carried out after this process. Unit root number shows integration order. Stationary series is shown as $I(0)$ and series which includes “d” number of unit root is shown as $I(d)$

Cointegration analysis and Casuality Analysis

Cointegration analysis provides to estimate long term parameters by considering unit root analysis. According to cointegration analysis, if two series has a relation in order to make equilibrium relation in the long-run, this series acts together although they contain stochastic trends and the difference between them might be constant. For this reason, cointegration imitates long term equilibrium that a system comes closer within time and looks like it. Regressions that contain nonstationary variables have a meaning on condition that cointegration is found and regression analysis gives information about long term relations of these

variables. If cointegration is not found, this means there is a superious correlation problem (Harris, 1995).

According to Engle and Granger (1987) when two time series like X and Y achieve defined conditions, they are (d, b) order cointegrated: ($d > b > 0$)

$$As, X_t, Y_t \sim CI(d, b),$$

The fact that two series need to be the same order integrated [I(d)] [the fact that dependent variable I(0) is on condition that independent vairable is I(0)], long term error terms of regression analysis that show the relation between variables need to be stationary [$a_1X_t + a_2Y_t$ I(d-b)].

Here, (a_1, a_2) vector is named as cointegration vector (Utkulu, 1998).

When regression model is as below (İnsel, 2004):

$$X_t = \Phi Y_t + u_t \quad (7)$$

In case X_t is I(0) and Y_t is I(1), relation between X_t and Y_t does not mean anything. Both two series has to be integrated from same order. When model is as below:

$$Y_t = \beta X_t + u_t \quad (8)$$

If X_t and Y_t are I(1) series, relation between two variables shows linear combination. For this reason, if a I(d) variable set contains a linear combination that has low order integration, this vector is called as cointegration vector. Coefficient vector of a stationary combination causes cointegration between variables. Cointegration vector is estimated with; Error Correction Model Approach, Engle and Granger Two-Step Approach, Engle and Yoo Three-Step Approach, Johansen Maximum Probability Approach, VAR Method, and Vector Error Correction Model. In this study two-step cointegration analysis of Engle and Granger is used. This method is the most used method in the literature with aim of finding long term relation between variables. This method sometimes makes problem in finding cointegration relation between variable more than two, but it is not problem in terms of cointegration relations between two variables. According to this method, whether time series that is going to be analyzed contain unit root or not is found by unit root tests that are explained before. After

founding that they contain same order unit root, long term relation between variables is estimated. (Enders, 1995):

$$X_t = \beta_0 + \beta_1 Y_t + u_t \quad (9)$$

In case error term that is taken from this model is stationary, it means that there is cointegration. When discussing error term autoregression :

$$\Delta \hat{u}_t = a_1 \hat{u}_{t-1} + \epsilon_t \quad (10)$$

Here null hypothesis is $a_1 = 0$. In case null hypothesis is rejected, it means that error term contains unit root. In this case, there is no cointegration between X_t and Y_t . In another word, if it is not possible to reject the null hypothesis $a_1 = 0$, then “noncointegration between variables hypothesis” could not be rejected. If error term series do not contain unit root (if they are stationary) and if X_t and Y_t series are $I(d)$, these series are (d,d) order cointegrated. In case there are more than two variables, Dickey-Fuller test is inefficient in testing error term series and in this matter table values are used that are prepared by Engle and Yoo (1987).

In case there is cointegration, relation between parameters of variables is consistent. Also, results relating to short term relation may be found by checking whether error correction mechanism between variables, in which long term cointegration relation is found, works or not. In this case, error correction model is estimated. Error Correction Model is as below: (Enders, 1995):

$$\Delta X_t = a_1 + a_2 (X_{t-1} - \beta_1 Y_{t-1}) + \sum a_{11} (i) \Delta X_{t-1} + \sum a_{12} (i) \Delta Y_{t-1} + \epsilon_t \quad (11)$$

In case there is cointegration between variables, error term series could be analysed and error correction model could be used:

$$\Delta X_t = a_1 + a_2 \hat{u}_{t-1} + \sum a_{11} (i) \Delta X_{t-1} + \sum a_{12} (i) \Delta Y_{t-1} + \epsilon_t \quad (12)$$

In the model above, coefficient of error term is valued between 1 ile 0 and must be statistically significant. On the other hand, it means that error correction model does not work. Also, data of “1/ coefficient of error term” shows how

soon dependent variable amends. In case coefficient is high, error correction time becomes short.

Regression analysis is also used in two-step cointegration analysis. Changes that occur in a variable in regression analysis are explained by another variable or variables that affect this variable. The explanation of these changes of only one variable is called simple regression. Regression model is explained simple linear regression model by assuming that there is linear relation between two variables is explained as simple linear regression model. This model explains change in a variable with another variable. Relation between variables is displayed with a mathematical function. The coefficient sign of independent variable shows the direction of relation between variables. But it does not give any information about degree (strong or weak) of relation. That shows the degree of relation between variables is correlation (Güriş and Çağlayan, 2005).

In case error mechanism does not work in two-step cointegration analysis, causality test is employed with the aim of strengthening the finding relating to the first stage of cointegration relation. Causality analysis tries to answer the question of whether a difference in variable (Y_1) causes differences in other variables (Y_2). In fact, Granger causality is a correlation between today's value of a variable and lag values of another variable (variables). But it does not mean that an action of a variable causes action of another one. According to this discussion, if Y_1 causes Y_2 , the lag values of Y_1 must have significant value in the equality of Y_2 . If results are like that, the situation is defined that Y_1 is the Granger cause of Y_2 . Besides of this relation, if lag values of Y_2 are significant in equality of Y_1 , it means that there is a bidirectional relation between Y_1 and Y_2 (Brooks, 2004).

GLOBAL CAPITAL MARKETS

The global economy began to expand again, and financial markets have recovered faster than expected. In 2010, world output is expected to rise by 4 percent following a sharp decline in output in 2009. This rebound was triggered by strong public policies and highly expansionary monetary policy with interest rates down to record lows in both advanced and emerging economies. In most advanced economies, the recovery is still expected to be slow with unemployment continuing to rise until later in the year. In emerging economies, real GDP growth is forecast to reach almost percent in 2010. This rebound is driven by China, India and a number of other emerging Asian economies.

In parallel to the recovery in economic activity financial markets also improved although conditions are still very difficult for borrowers. Low policy interest rates and expectations for recovery have spurred strong rallies in many markets and international capital flows have recovered including to emerging markets. Since the first quarter of 2009, equity markets have posted strong gains and corporate bond issuance has reached record levels.

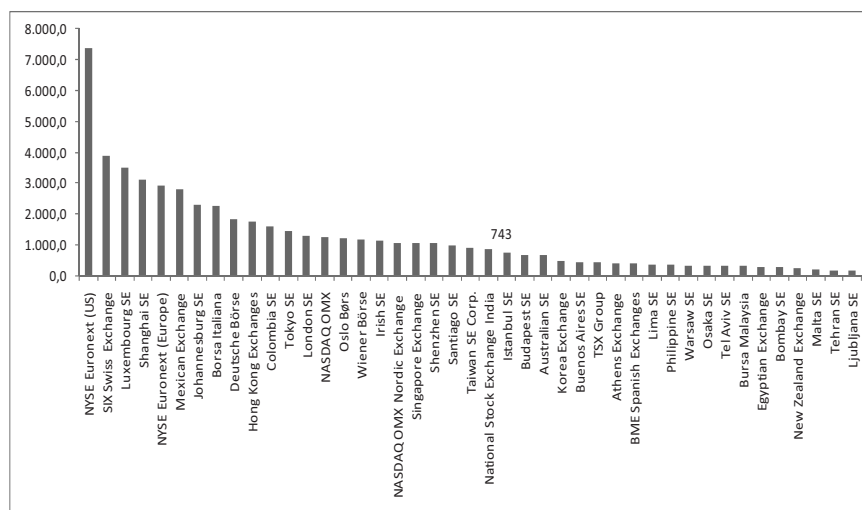
The performances of some developed stock markets with respect to indices indicated that DJIA, FTSE-100, Nikkei-225 and DAX changed by 20.2%, 39.9%, 21.5% and 31.1%, respectively, at December 29th, 2009 in comparison with the December 31, 2008. When US \$ based returns of some emerging markets are compared in the same period, the best performer markets were: Brazil (142.6 %), Russia (128.7 %), China (125.8 %), Indonesia (114.0 %) and Turkey (97.7 %). In the same period, the lowest return markets were: Saudi Arabia (27.6 %), Greece (28.9 %) and Egypt (36.5 %), and The performances of emerging markets with respect to P/E ratios as of end of December 2009 indicated that the highest rates were obtained in Poland (42.2), Peru (28.6), Indonesia (27.8) and India (23.2) and the lowest rates in Brazil (8.3), China (8.7), Hungary (8.7), Czech Rep. (10.1) and Turkey (11.1).

Market Capitalization (USD \$ Million, 1986-2008)

	Global	Developed Markets	Emerging Markets	ISE
1986	6,514,199	6,275,582	238,617	938
1987	7,830,778	7,511,072	319,706	3,125
1988	9,728,493	9,245,358	483,135	1,128
1989	11,712,673	10,967,395	745,278	6,756
1990	9,398,391	8,784,770	613,621	18,737
1991	11,342,089	10,434,218	907,871	15,564
1992	10,923,343	9,923,024	1,000,319	9,922
1993	14,016,023	12,327,242	1,688,781	37,824
1994	15,124,051	13,210,778	1,913,273	21,785
1995	17,788,071	15,859,021	1,929,050	20,782
1996	20,412,135	17,982,088	2,272,184	30,797
1997	23,087,006	20,923,911	2,163,095	61,348
1998	26,964,463	25,065,373	1,899,090	33,473
1999	36,030,810	32,956,939	3,073,871	112,276
2000	32,260,433	29,520,707	2,691,452	69,659
2001	27,818,618	25,246,554	2,572,064	47,150
2002	23,391,914	20,955,876	2,436,038	33,958
2003	31,947,703	28,290,981	3,656,722	68,379
2004	38,904,018	34,173,600	4,730,418	98,299
2005	43,642,048	36,538,248	7,103,800	161,537
2006	54,194,991	43,736,409	10,458,582	162,399
2007	64,563,414	46,300,864	18,262,550	286,572
2008	35,811,160	26,533,854	9,277,306	117,930

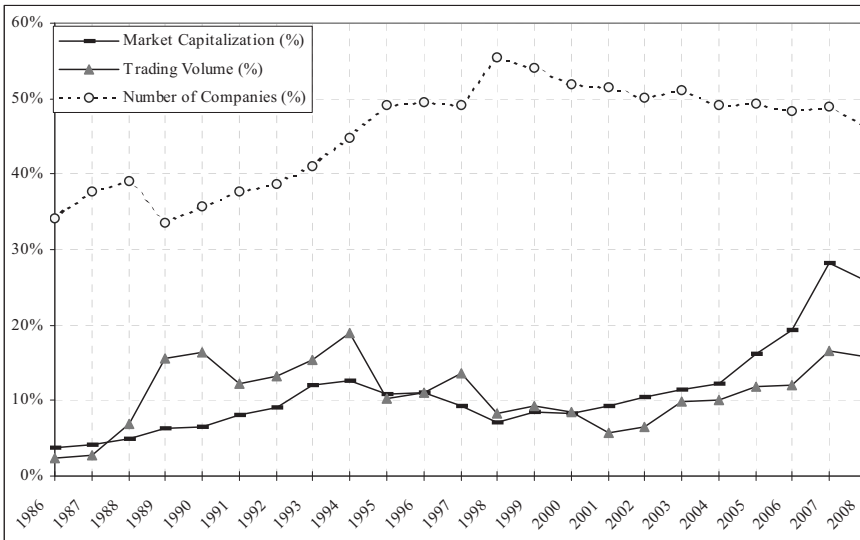
Source: Standard & Poor's Global Stock Markets Factbook, 2009.

Comparison of Average Market Capitalization Per Company (USD Million, Dec. 2009)



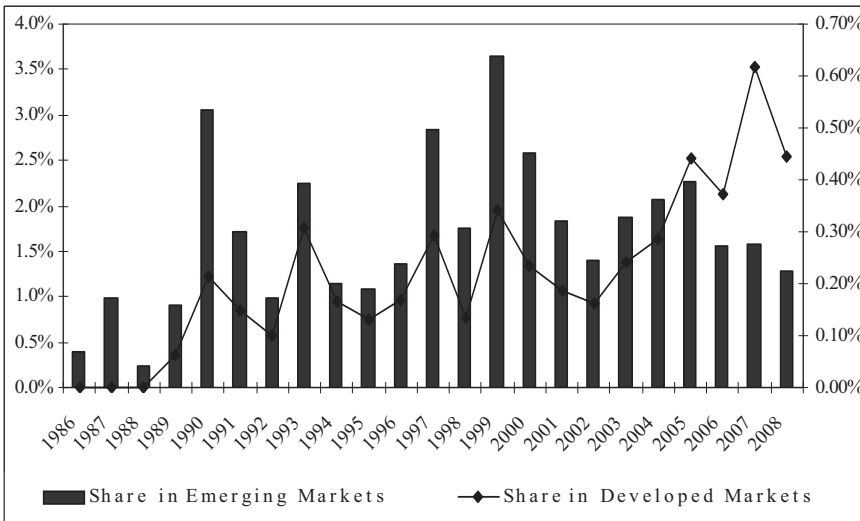
Source: www.world-exchanges.org

Worldwide Share of Emerging Capital Markets (1986-2008)



Source: Standard & Poor's Global Stock Markets Factbook, 2009.

Share of ISE's Market capitalization in World Markets (1986-2008)



Source: Standard & Poor's Global Stock Markets Factbook, 2009.

Main Indicators of Capital Markets (Dec. 2009)

	Market	Monthly Turnover Velocity (Dec 2009) (%)	Market	Value of Share Trading (millions, US\$) Up to Year Total (2009/1-2009/12)	Market	Market Cap. of Share of Domestic Companies (millions US\$) Dec 2009
1	NASDAQ OMX	716.4%	NASDAQ OMX	28,951,349	NYSE Euronext (US)	11,837,793.3
2	Shenzhen SE	408.2%	NYSE Euronext (US)	17,784,586	Tokyo SE	3,306,081.9
3	Shanghai SE	207.3%	Shanghai SE	5,061,986	NASDAQ OMX	3,239,492.4
4	Taiwan SE Corp.	168.1%	Tokyo SE	3,987,777	NYSE Euronext (Europe)	2,869,393.1
5	Istanbul SE	165.6%	London SE	3,402,496	London SE	2,796,444.3
6	Korea Exchange	149.0%	Shenzhen SE	2,774,319	Shanghai SE	2,704,778.4
7	BME Spanish Exchan	132.2%	Deutsche Börse	2,240,331	Hong Kong Exchanges	2,305,142.8
8	NYSE Euronext (US)	120.0%	NYSE Euronext (Europe)	1,971,921	TSX Group	1,608,053.5
9	Tokyo SE	119.2%	BME Spanish Exch	1,610,210	Bombay SE	1,306,520.2
10	Deutsche Börse	98.8%	Korea Exchange	1,575,190	BME Spanish Exchanges	1,297,226.9
11	Borsa Italiana	93.7%	Hong Kong Exchanges	1,501,689	Deutsche Börse	1,292,355.3
12	Oslo Børs	87.5%	TSX Group	1,245,457	Australian SE	1,261,909.3
13	Osaka SE	79.8%	Australian SE	966,986	National Stock Exchange India	1,224,806.4
14	TSX Group	76.8%	Borsa Italiana	948,147	SIX Swiss Exchange	1,064,686.5
15	Egyptian Exchange	73.9%	Taiwan SE Corp.	909,551	Shenzhen SE	868,374.0
16	Australian SE	73.8%	National Stock Exchange India	791,930	Korea Exchange	834,596.5
17	NASDAQ OMX Nordic	71.7%	SIX Swiss Exchange	789,884	NASDAQ OMX Nordic	817,222.8
18	NYSE Euronext (Europe)	68.1%	NASDAQ OMX Nordic	778,356	Johannesburg SE	799,023.7
19	London SE	68.0%	Johannesburg SE	342,356	Taiwan SE Corp.	657,609.5
20	Hong Kong Exchanges	66.9%	Istanbul SE	305,036	Borsa Italiana	655,848.2
21	Tel Aviv SE	66.0%	Bombay SE	264,955	Singapore Exchange	481,246.7
22	Athens Exchange	65.3%	Oslo Børs	248,071	Mexican Exchange	352,045.4
23	Budapest SE	64.0%	Singapore Exchange	247,069	Bursa Malaysia	289,219.4
24	National Stock Exchan India	61.5%	Osaka SE	139,259	Istanbul SE	233,996.7
25	SIX Swiss Exchange	61.5%	Tel Aviv SE	87,374	Santiago SE	230,732.3
26	Singapore Exchange	46.1%	Bursa Malaysia	86,214	Oslo Børs	227,233.2
27	New Zealand Exchan	44.6%	Mexican Exchange	84,909	Tel Aviv SE	188,733.9
28	Warsaw SE	43.0%	Egyptian Exchange	73,652	Warsaw SE	150,961.5
29	Irish SE	42.0%	Athens Exchange	71,829	Colombia SE	140,519.8
30	Johannesburg SE	40.4%	Warsaw SE	58,374	Osaka SE	138,329.8
31	Wiener Börse	39.3%	Wiener Börse	51,327	Wiener Börse	114,076.1
32	Colombo SE	26.3%	Santiago SE	38,107	Athens Exchange	112,632.4
33	Mexican Exchange	26.3%	Irish SE	37,336	Luxembourg SE	105,048.2
34	Bursa Malaysia	23.9%	Budapest SE	25,972	Egyptian Exchange	91,207.3
35	Colombia SE	22.5%	Philippine SE	20,849	Philippine SE	86,349.4
36	Santiago SE	21.1%	Colombia SE	19,169	Lima SE	71,662.5
37	Bombay SE	19.4%	Tehran SE	16,988	Irish SE	61,291.1
38	Philippine SE	19.2%	New Zealand Exch	15,358	Tehran SE	59,183.1
39	Cyprus SE	10.4%	Lima SE	4,591	Buenos Aires SE	45,744.9
40	Lima SE	8.8%	Buenos Aires SE	2,983	New Zealand Exchange	35,506.8
41	Tehran SE	7.6%	Cyprus SE	1,819	Budapest SE	30,036.6
42	Mauritius SE	7.4%	Ljubljana SE	1,304	Ljubljana SE	12,140.9
43	Ljubljana SE	5.6%	Colombo SE	1,241	Cyprus SE	10,268.9
44	Buenos Aires SE	3.6%	Mauritius SE	328	Colombo SE	9,546.7
45	Bermuda SE	1.3%	Luxembourg SE	296	Mauritius SE	6,582.0

Source: www.world-exchanges.org

Trading Volume (USD Millions, 1986-2008)

	Global	Developed	Emerging	ISE	Emerging/Global (%)	ISE/Emerging (%)
1986	3,573,570	3,490,718	82,852	13	2.32	0.02
1987	5,846,864	5,682,143	164,721	118	2.82	0.07
1988	5,997,321	5,588,694	408,627	115	6.81	0.03
1989	7,467,997	6,298,778	1,169,219	773	15.66	0.07
1990	5,514,706	4,614,786	899,920	5,854	16.32	0.65
1991	5,019,596	4,403,631	615,965	8,502	12.27	1.38
1992	4,782,850	4,151,662	631,188	8,567	13.20	1.36
1993	7,194,675	6,090,929	1,103,746	21,770	15.34	1.97
1994	8,821,845	7,156,704	1,665,141	23,203	18.88	1.39
1995	10,218,748	9,176,451	1,042,297	52,357	10.20	5.02
1996	13,616,070	12,105,541	1,510,529	37,737	11.09	2.50
1997	19,484,814	16,818,167	2,666,647	59,105	13.69	2.18
1998	22,874,320	20,917,462	1,909,510	68,646	8.55	3.60
1999	31,021,065	28,154,198	2,866,867	81,277	9.24	2.86
2000	47,869,886	43,817,893	3,967,806	179,209	8.46	4.42
2001	42,076,862	39,676,018	5,604,092	77,937	5.71	3.25
2002	38,645,472	36,098,731	8,226,944	70,667	6.59	2.77
2003	29,639,297	26,743,153	2,896,144	99,611	9.77	3.44
2004	39,309,589	35,341,782	3,967,806	147,426	10.09	3.72
2005	47,319,584	41,715,492	5,604,092	201,258	11.84	3.59
2006	67,912,153	59,685,209	8,226,944	227,615	12.11	2.77
2007	98,816,305	82,455,174	16,361,131	302,402	16.56	1.85
2008	80,516,822	67,795,950	12,720,872	239,713	15.80	1.88

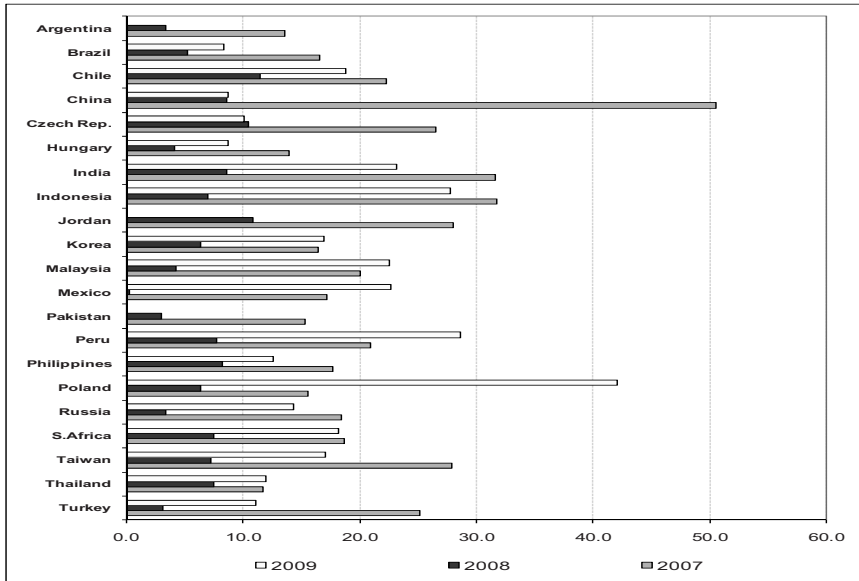
Source: Standard & Poor's Global Stock Markets Factbook, 2009.

Number of Trading Companies (1986-2008)

	Global	Developed Markets	Emerging Markets	ISE	Emerging/Global (%)	ISE/Emerging (%)
1986	28,173	18,555	9,618	80	34.14	0.83
1987	29,278	18,265	11,013	82	37.62	0.74
1988	29,270	17,805	11,465	79	39.17	0.69
1989	25,925	17,216	8,709	76	33.59	0.87
1990	25,424	16,323	9,101	110	35.80	1.21
1991	26,093	16,239	9,854	134	37.76	1.36
1992	27,706	16,976	10,730	145	38.73	1.35
1993	28,895	17,012	11,883	160	41.12	1.35
1994	33,473	18,505	14,968	176	44.72	1.18
1995	36,602	18,648	17,954	205	49.05	1.14
1996	40,191	20,242	19,949	228	49.64	1.14
1997	40,880	20,805	20,075	258	49.11	1.29
1998	47,465	21,111	26,354	277	55.52	1.05
1999	48,557	22,277	26,280	285	54.12	1.08
2000	49,933	23,996	25,937	315	51.94	1.21
2001	48,220	23,340	24,880	310	51.60	1.25
2002	48,375	24,099	24,276	288	50.18	1.19
2003	49,855	24,414	25,441	284	51.03	1.12
2004	48,806	24,824	23,982	296	49.14	1.23
2005	49,946	25,337	24,609	302	49.27	1.23
2006	50,212	25,954	24,258	314	48.31	1.29
2007	51,322	26,251	25,071	319	48.85	1.27
2008	49,138	26,375	22,763	284	46.32	1.25

Source: Standard & Poor's Global Stock Markets Factbook, 2009.

Comparison of P/E Ratios Performances



Source: IFC Factbook 2001. Standard & Poor's, Global Stock Markets Factbook, 2009.

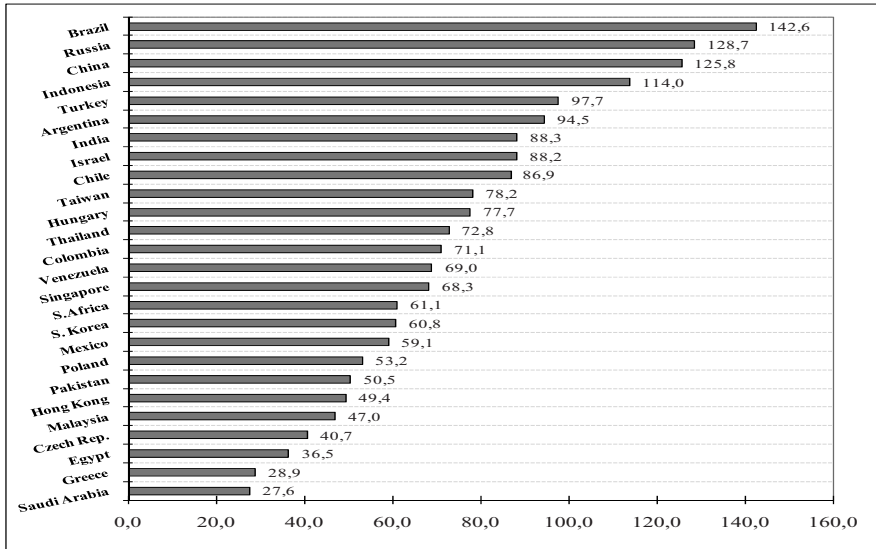
Price-Earnings Ratios in Emerging Markets

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Argentina	-889.9	32.6	-1.4	21.1	27.7	11.1	18.0	13.6	3.4	N/A
Brazil	11.5	8.8	13.5	10.0	10.6	10.7	12.7	16.6	5.3	8.3
Chile	24.9	16.2	16.3	24.8	17.2	15.7	24.2	22.3	11.5	18.9
China	50.0	22.2	21.6	28.6	19.1	13.9	24.6	50.5	8.6	8.7
Czech Rep.	-16.4	5.8	11.2	10.8	25.0	21.1	20.0	26.5	10.5	10.1
Hungary	14.3	13.4	14.6	12.3	16.6	13.5	13.4	14.0	4.2	8.7
India	16.8	12.8	15.0	20.9	18.1	19.4	20.1	31.6	8.6	23.2
Indonesia	-5.4	-7.7	22.0	39.5	13.3	12.6	20.1	31.7	7.0	27.8
Jordan	13.9	18.8	11.4	20.7	30.4	6.2	20.8	28.0	10.9	N/A
Korea	17.7	28.7	21.6	30.2	13.5	20.8	12.8	16.4	6.4	16.9
Malaysia	91.5	50.6	21.3	30.1	22.4	15	21.7	20.1	4.2	22.6
Mexico	13.0	13.7	15.4	17.6	15.9	14.2	18.6	17.2	0.3	22.6
Pakistan	-117.4	7.5	10.0	9.5	9.9	13.1	10.8	15.3	3.0	N/A
Peru	11.6	21.3	12.8	13.7	10.7	12.0	15.7	20.9	7.7	28.6
Philippines	26.2	45.9	21.8	21.1	14.6	15.7	14.4	17.7	8.2	12.6
Poland	19.4	6.1	88.6	-353.0	39.9	11.7	13.9	15.6	6.4	42.2
Russia	3.8	5.6	12.4	19.9	10.8	24.1	16.6	18.4	3.4	14.3
S.Africa	10.7	11.7	10.1	11.5	16.2	12.8	16.6	18.7	7.5	18.2
Taiwan	13.9	29.4	20.0	55.7	21.2	21.9	25.6	27.9	7.2	17.1
Thailand	-6.9	163.8	16.4	16.6	12.8	10.0	8.7	11.7	7.5	11.9
Turkey	15.4	72.5	37.9	14.9	12.5	16.2	17.2	25.2	3.2	11.1

Source: IFC Factbook, 2004; Standard & Poor's & Bloomberg

Note: Figures are taken from S&P/IFCI Index Profile.

Comparison of Market Returns in USD (31/12/2008-31/12/2009)



Source: The Economist, July 3rd 2010.

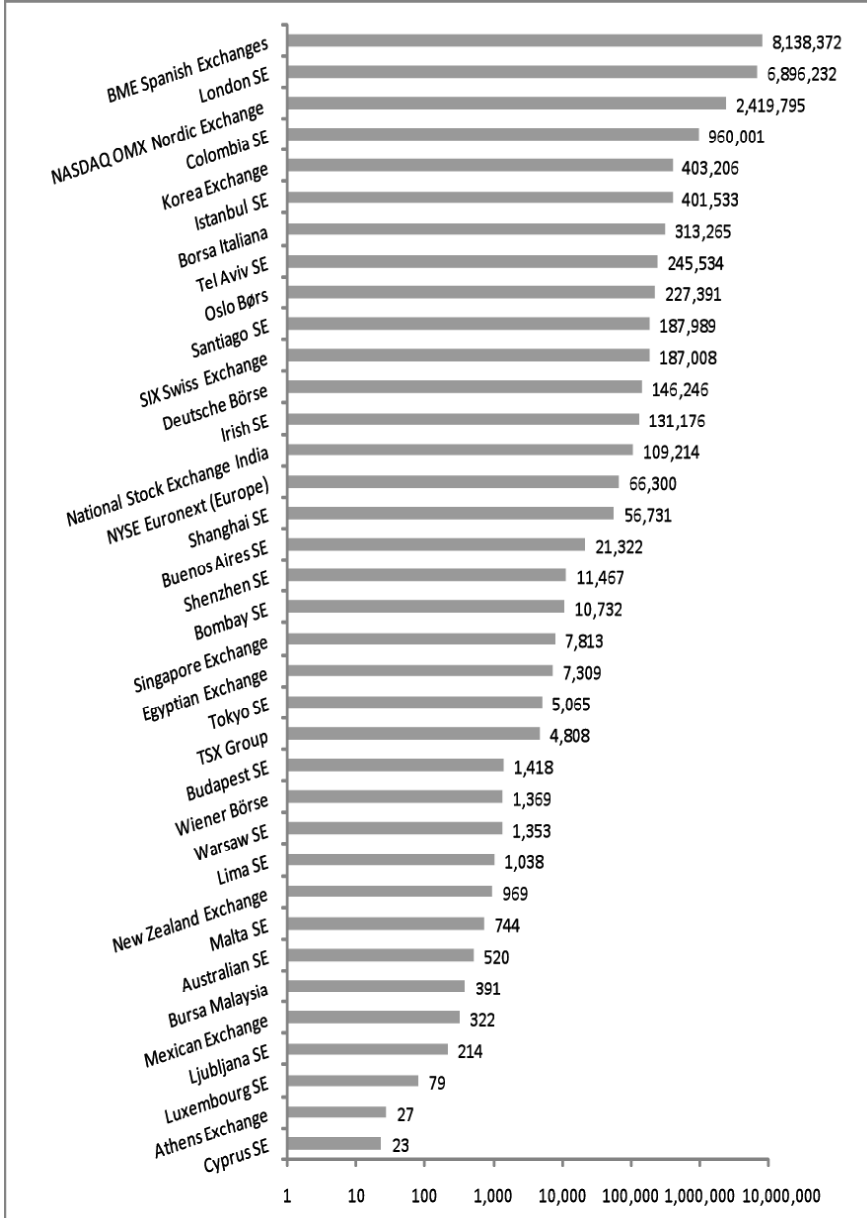
Market Value/Book Value Ratios

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Argentina	0.9	0.6	0.8	2.0	2.2	2.5	4.1	3.2	0.8	1.4
Brazil	1.4	1.2	1.3	1.8	1.9	2.2	2.7	3.3	1.0	1.5
Chile	1.4	1.4	1.3	1.9	0.6	1.9	2.4	2.5	1.4	2.4
China	3.6	2.3	1.9	2.6	2.0	1.8	3.1	6.3	1.9	0.7
Czech Rep.	1.0	0.8	0.8	1.0	1.6	2.4	2.4	3.1	2.0	2.2
Hungary	2.4	1.8	1.8	2.0	2.8	3.1	3.1	3.2	0.9	1.5
India	2.6	1.9	2.0	3.5	3.3	5.2	4.9	7.9	1.7	3.5
Indonesia	1.7	1.7	1.0	1.6	2.8	2.5	3.4	5.6	1.6	3.7
Jordan	1.2	1.5	1.3	2.1	3.0	2.2	3.3	4.4	1.3	N/A
Korea	0.8	1.2	1.1	1.6	1.3	2.0	1.7	2.2	0.8	1.3
Malaysia	1.5	1.2	1.3	1.7	1.9	1.7	2.1	2.5	0.7	2.1
Mexico	1.7	1.7	1.5	2.0	2.5	2.9	3.8	3.6	1.0	2.8
Pakistan	1.4	0.9	1.9	2.3	2.6	3.5	3.2	4.7	0.8	N/A
Peru	1.1	1.4	1.2	1.8	1.6	2.2	3.5	6.0	2.7	5.4
Philippines	1.0	0.9	0.8	1.1	1.4	1.7	1.9	2.8	1.3	2.1
Poland	2.2	1.4	1.3	1.8	2.0	2.5	2.5	2.8	1.1	1.8
Russia	0.6	1.1	0.9	1.2	1.2	2.2	2.5	2.8	0.1	1.0
S.Africa	2.1	2.1	1.9	2.1	2.5	3.0	3.8	4.4	1.6	2.4
Taiwan	1.7	2.1	1.6	2.2	1.9	1.9	2.4	2.6	1.0	2.2
Thailand	1.3	1.3	1.5	2.8	2.0	2.1	1.9	2.5	1.0	2.0
Turkey	3.1	3.8	2.8	2.6	1.7	2.1	2.0	2.8	0.7	2.1

Source: IFC Factbook, 2004; Standard & Poor's & Bloomberg

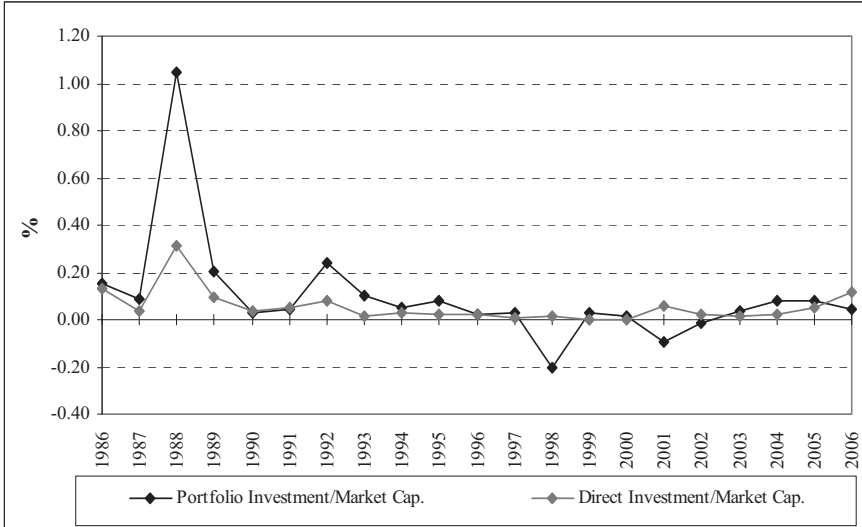
Note: Figures are taken from S&P/IFCI Index Profile.

Value of Bond Trading (Million USD, Jan. 2009-Dec. 2009)



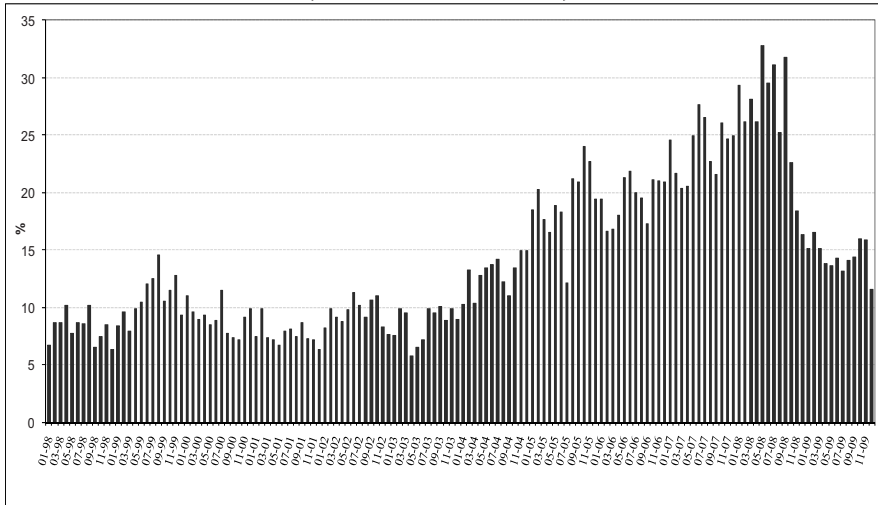
Source: www.world-exchanges.org

Foreign Investments as a Percentage of Market Capitalization in Turkey (1986-2006)



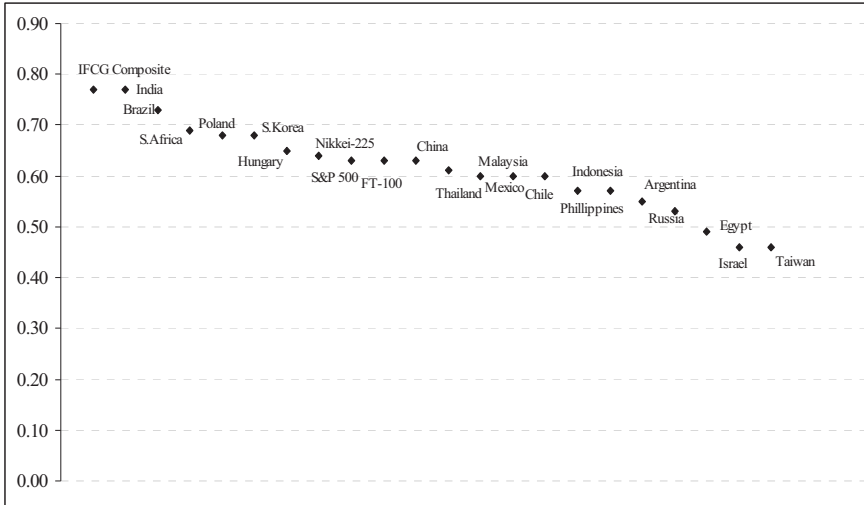
Source: ISE Data. CBTR Databank.

Foreigners' Share in the Trading Volume of the ISE (Jan. 1998-Dec. 2009)



Source: ISE Data.

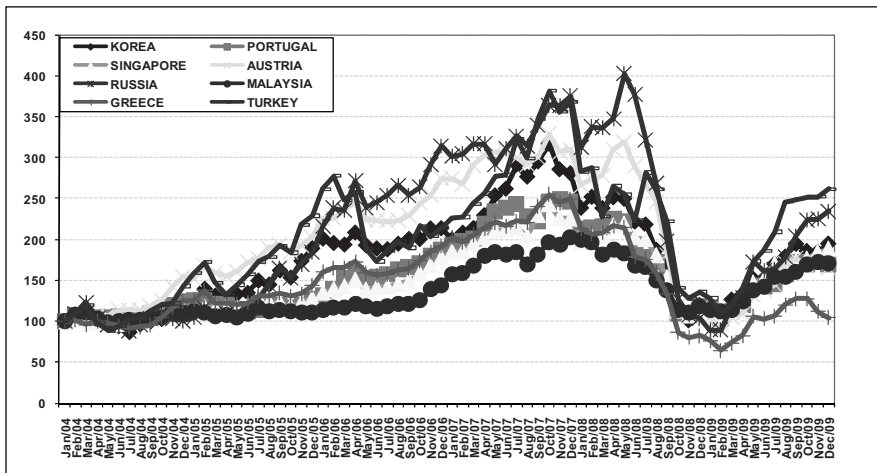
Price Correlations of the ISE (Sep. 2003-Sep. 2008)



Source: Standard & Poor's, Emerging Stock Markets Review, September 2008.

Notes: The correlation coefficient is between -1 and +1. If it is zero, for the given period, it is implied that there is no relation between two series of returns.

Comparison of Market Indices (31 Jan. 2004 = 100)



Source: Bloomberg

ISE Market Indicators

STOCK MARKET											
	Number of Comp.	Traded Value				Market Value		Dividend Yield	P/E Ratios		
		Total		Daily Average		TL	USS		(%)	TL(1)	TL(2)
		TL Million	USS Million	TL Million	USS Million	TL Million	USS Million				
1986	80	0,01	13	---	---	0,71	938	9,15	5,07	---	---
1987	82	0,10	118	---	---	3	3.125	2,82	15,86	---	---
1988	79	0,15	115	---	---	2	1.128	10,48	4,97	---	---
1989	76	2	773	0,01	3	16	6.756	3,44	15,74	---	---
1990	110	15	5.854	0,06	24	55	18.737	2,62	23,97	---	---
1991	134	35	8.502	0,14	34	79	15.564	3,95	15,88	---	---
1992	145	56	8.567	0,22	34	85	9.922	6,43	11,39	---	---
1993	160	255	21.770	1	88	546	37.824	1,65	25,75	20,72	14,86
1994	176	651	23.203	3	92	836	21.785	2,78	24,83	16,7	10,97
1995	205	2.374	52.357	9	209	1.265	20.782	3,56	9,23	7,67	5,48
1996	228	3.031	37.737	12	153	3.275	30.797	2,87	12,15	10,86	7,72
1997	258	9.049	58.104	36	231	12.654	61.879	1,56	24,39	19,45	13,28
1998	277	18.030	70.396	73	284	10.612	33.975	3,37	8,84	8,11	6,36
1999	285	36.877	84.034	156	356	61.137	114.271	0,72	37,52	34,08	24,95
2000	315	111.165	181.934	452	740	46.692	69.507	1,29	16,82	16,11	14,05
2001	310	93.119	80.400	375	324	68.603	47.689	0,95	108,33	824,42	411,64
2002	288	106.302	70.756	422	281	56.370	34.402	1,20	195,92	26,98	23,78
2003	285	146.645	100.165	596	407	96.073	69.003	0,94	14,54	12,29	13,19
2004	297	208.423	147.755	837	593	132.556	98.073	1,37	14,18	13,27	13,96
2005	304	269.931	201.763	1.063	794	218.318	162.814	1,71	17,19	19,38	19,33
2006	316	325.131	229.642	1.301	919	230.038	163.775	2,10	22,02	14,86	15,32
2007	319	387.777	300.842	1.539	1.194	335.948	289.986	1,90	12,16	11,97	13,48
2008	317	332.605	261.274	1.325	1.041	182.025	119.698	4,93	5,55	5,76	4,63
2009	325	482.534	316.326	1.915	1.255	350.761	235.996	2,37	17,89	16,83	17,34
2009/Q1	315	69.916	42.501	1.110	675	183.809	110.263	3,58	7,28	7,47	5,50
2009/Q2	316	134.449	86.286	2.169	1.392	252.974	166.037	2,17	11,51	12,38	10,26
2009/Q3	314	136.292	91.552	2.130	1.431	321.119	217.560	2,48	16,41	16,41	15,77
2009/Q4	325	141.877	95.988	2.252	1.524	350.761	235.996	2,37	17,89	16,83	17,34

Q: Quarter

NOTE: Between 1986-1992, the price earnings ratios were calculated on the basis of the companies' previous year-end net profits. As from 1993,

TL(1) = Total Market Capitalization / Sum of Last two six-month profits

TL(2) = Total Market Capitalization / Sum of last four three-month profits.

USS = based Total Market Capitalization / Sum of last four USS based three-month profits.

- Companies which are temporarily de-listed and will be traded off the Exchange under the decision of ISE's Executive Council are not included in the calculations.

- EFT's data are taken into account only in the calculation of Traded Value.

Closing Values of the ISE Price Indices

TL Based									
	ISE NATIONAL 100 (Jan. 1986=1)	ISE CORPORATE GOVERNANCE (Aug.29.2007 =48,082.17)	ISE NATIONAL INDUSTRIALS (Dec.31, 90 =33)	ISE NATIONAL SERVICES (Dec.27, 96 =1046)	ISE NATIONAL FINANCIALS (Dec. 31, 90 =35)	ISE NATIONAL TECHNOLOGY (June, 30,2000 =14,466.12)	ISE INVESTMENT TRUSTS (Dec. 27,1996 =976)	ISE SECOND NATIONAL (Dec.27,1996 =976)	ISE NEW ECONOMY (Sept. 02, 2004 =20525.92)
1986	1,71	---	---	---	---	---	---	---	---
1987	6,73	---	---	---	---	---	---	---	---
1988	3,74	---	---	---	---	---	---	---	---
1989	22,18	---	---	---	---	---	---	---	---
1990	32,56	---	---	---	---	---	---	---	---
1991	43,69	---	49,63	---	33,55	---	---	---	---
1992	40,04	---	49,15	---	24,34	---	---	---	---
1993	206,83	---	222,88	---	191,90	---	---	---	---
1994	272,57	---	304,74	---	229,64	---	---	---	---
1995	400,25	---	462,47	---	300,04	---	---	---	---
1996	975,89	---	1,045,91	---	914,47	---	---	---	---
1997	3,451,00	---	2,660,--	3,593,--	4,522,--	---	2,934,--	2,761,--	---
1998	2,597,91	---	1,943,67	3,697,10	3,269,58	---	1,579,24	5,390,43	---
1999	15,208,78	---	9,945,75	13,194,40	21,180,77	---	6,812,65	13,450,36	---
2000	9,437,21	---	6,954,99	7,224,01	12,837,92	10,586,58	6,219,00	15,718,65	---
2001	13,782,76	---	11,413,44	9,261,82	18,234,65	9,236,16	7,943,60	20,664,11	---
2002	10,369,92	---	9,888,71	6,897,30	12,902,34	7,260,84	5,452,10	28,305,78	---
2003	18,625,02	---	16,299,23	9,923,02	25,594,77	8,368,72	10,897,76	32,521,26	---
2004	24,971,68	---	20,885,47	13,914,12	35,487,77	7,539,16	17,114,91	23,415,86	39,240,73
2005	39,777,70	---	31,140,59	18,085,71	62,800,64	13,669,97	23,037,86	28,474,96	29,820,90
2006	39,117,46	---	30,896,67	22,211,77	60,168,41	10,341,85	16,910,76	23,969,99	20,395,84
2007	55,538,13	55,406,17	40,567,17	34,204,74	83,822,29	10,490,51	16,428,59	27,283,78	32,879,36
2008	26,864,07	21,974,49	19,781,26	22,169,30	38,054,32	4,858,62	8,655,55	8,645,09	14,889,37
2009	52,825,02	42,669,96	37,899,01	36,134,16	79,763,23	14,335,01	18,215,26	25,764,15	25,795,58
2009/Q1	25,764,83	20,760,86	20,297,09	22,484,07	35,651,63	4,658,53	10,022,26	11,168,24	16,479,36
2009/Q2	36,949,20	28,985,35	27,972,17	27,652,64	54,609,09	7,054,04	12,025,90	17,503,77	25,625,99
2009/Q3	47,910,30	38,351,95	35,237,95	33,384,35	72,435,65	10,455,54	16,682,72	19,130,51	25,525,06
2009/Q4	52,825,02	42,669,96	37,899,01	36,134,16	79,763,23	14,335,01	18,215,26	25,764,15	25,795,58

US \$ Based										Euro Based
	ISE NATIONAL 100 (Jan. 1986=100)	ISE CORPORATE GOVERNANCE (Aug.29.2007 =2,114.37)	ISE NATIONAL INDUSTRIALS (Dec.31, 90 =643)	ISE NATIONAL SERVICES (Dec.27, 96 =5720)	ISE NATIONAL FINANCIALS (Dec. 31, 90 =643)	ISE NATIONAL TECHNOLOGY (June 30,2000 =1,360.92)	ISE INVESTMENT TRUSTS (Dec. 27, 96 =534)	ISE SECOND NATIONAL (Dec. 27, 96 =534)	ISE NEW ECONOMY (Sept. 02, 2004 =796,46)	NATIONAL 100 (Dec. 31, 98 =484)
1986	131,53	---	---	---	---	---	---	---	---	---
1987	384,57	---	---	---	---	---	---	---	---	---
1988	119,82	---	---	---	---	---	---	---	---	---
1989	560,57	---	---	---	---	---	---	---	---	---
1990	642,63	---	---	---	---	---	---	---	---	---
1991	501,50	---	569,63	---	385,14	---	---	---	---	---
1992	272,61	---	334,59	---	165,68	---	---	---	---	---
1993	833,28	---	897,96	---	773,13	---	---	---	---	---
1994	413,27	---	462,03	---	348,18	---	---	---	---	---
1995	382,62	---	442,11	---	286,83	---	---	---	---	---
1996	534,01	---	572,33	---	500,40	---	---	---	---	---
1997	981,99	---	756,91	1,022,40	1,287,--	---	835,--	786,--	---	---
1998	484,01	---	362,12	688,79	609,14	---	294,22	1,004,27	---	---
1999	1,654,17	---	1,081,74	1,435,08	2,303,71	---	740,97	1,462,92	---	1,912,46
2000	817,49	---	602,47	625,78	1,112,08	917,06	538,72	1,361,62	---	1,045,57
2001	557,52	---	461,68	374,65	737,61	373,61	321,33	835,88	---	741,24
2002	368,26	---	351,17	244,94	458,20	257,85	193,62	1,005,21	---	411,72
2003	778,43	---	681,22	414,73	1,069,73	349,77	455,47	1,359,22	---	723,25
2004	1,075,12	---	899,19	599,05	1,527,87	324,59	736,86	1,008,13	1,689,45	924,87
2005	1,726,23	---	1,351,41	784,87	2,725,36	593,24	999,77	1,235,73	1,294,14	1,710,04
2006	1,620,59	---	1,280,01	920,21	2,492,71	428,45	700,59	993,05	844,98	1,441,89
2007	2,789,66	2,783,03	2,037,67	1,718,09	4,210,36	526,93	825,20	1,370,45	1,651,52	2,221,77
2008	1,027,98	840,87	756,95	848,33	1,456,18	185,92	331,21	330,81	569,76	859,46
2009	2,068,18	1,670,60	1,483,81	1,414,71	3,122,86	561,24	713,16	1,008,71	1,009,94	1,682,53
2009/Q1	899,39	724,71	708,52	784,87	1,244,51	162,62	349,85	389,86	575,26	793,40
2009/Q2	1,411,20	1,107,04	1,068,34	1,056,14	2,085,69	269,42	459,31	668,52	978,74	1,171,62
2009/Q3	1,888,85	1,512,02	1,389,25	1,316,17	2,855,76	412,21	657,71	754,22	1,006,32	1,512,99
2009/Q4	2,068,18	1,670,60	1,483,81	1,414,71	3,122,86	561,24	713,16	1,008,71	1,009,94	1,682,53

Q: Quarter

BONDS AND BILLS MARKET				
Traded Value				
Outright Purchases and Sales Market				
	Total		Daily Average	
	TL Million	US\$ Million	TL Million	US\$ Million
1991	1	312	0,01	2
1992	18	2.406	0,07	10
1993	123	10.728	0,50	44
1994	270	8.832	1	35
1995	740	16.509	3	66
1996	2.711	32.737	11	130
1997	5.504	35.472	22	141
1998	17.996	68.399	72	274
1999	35.430	83.842	143	338
2000	166.336	262.941	663	1.048
2001	39.777	37.297	158	149
2002	102.095	67.256	404	266
2003	213.098	144.422	852	578
2004	372.670	262.596	1.479	1.042
2005	480.723	359.371	1.893	1.415
2006	381.772	270.183	1.521	1.076
2007	363.949	278.873	1.444	1.107
2008	300.995	239.367	1.199	954
2009	417.052	269.977	1.655	1.071
2009/Q1	110.905	67.259	1.760	1.068
2009/Q2	105.034	67.327	1.694	1.086
2009/Q3	111.361	74.611	1.740	1.166
2009/Q4	89.751	60.780	1.425	965

Repo-Reverse Repo Market				
Repo-Reverse Repo Market				
	Total		Daily Average	
	TL Million	US\$ Million	TL Million	US\$ Million
1993	59	4.794	0,28	22
1994	757	23.704	3	94
1995	5.782	123.254	23	489
1996	18.340	221.405	73	879
1997	58.192	374.384	231	1.486
1998	97.278	372.201	389	1.489
1999	250.724	589.267	1.011	2.376
2000	554.121	886.732	2.208	3.533
2001	696.339	627.244	2.774	2.499
2002	736.426	480.725	2.911	1.900
2003	1.040.533	701.545	4.162	2.806
2004	1.551.410	1.090.476	6.156	4.327
2005	1.859.714	1.387.221	7.322	5.461
2006	2.538.802	1.770.337	10.115	7.053
2007	2.571.169	1.993.283	10.203	7.910
2008	2.935.317	2.274.077	11.694	9.060
2009	2.982.531	1.929.031	11.835	7.655
2009/Q1	758.127	457.606	12.034	7.264
2009/Q2	782.818	500.980	12.626	8.080
2009/Q3	700.274	469.584	10.942	7.337
2009/Q4	741.313	500.860	11.767	7.950

Q: Quarter

ISE GDS Price Indices (January 02, 2001 = 100)

TL Based						
	3 Months (91 Days)	6 Months (182 Days)	9 Months (273 Days)	12 Months (365 Days)	15 Months (456 Days)	General
2001	102,87	101,49	97,37	91,61	85,16	101,49
2002	105,69	106,91	104,87	100,57	95,00	104,62
2003	110,42	118,04	123,22	126,33	127,63	121,77
2004	112,03	121,24	127,86	132,22	134,48	122,70
2005	113,14	123,96	132,67	139,50	144,47	129,14
2006	111,97	121,14	127,77	132,16	134,48	121,17
2007	112,67	122,83	130,72	136,58	140,49	128,23
2008	112,56	122,69	130,63	136,65	140,81	128,03
2009	114,96	127,78	138,50	147,29	154,03	131,08
2009/Q1	113,82	125,10	133,95	140,58	145,01	129,68
2009/Q2	114,34	126,29	135,94	143,46	148,82	134,57
2009/Q3	114,92	127,75	138,54	147,47	154,41	132,29
2009/Q4	114,96	127,78	138,50	147,29	154,03	131,08

ISE GDS Performance Indices (January 02, 2001 = 100)

TL Based					
	3 Months (91 Days)	6 Months (182 Days)	9 Months (273 Days)	12 Months (365 Days)	15 Months (456 Days)
2001	195,18	179,24	190,48	159,05	150,00
2002	314,24	305,57	347,66	276,59	255,90
2003	450,50	457,60	558,19	438,13	464,98
2004	555,45	574,60	712,26	552,85	610,42
2005	644,37	670,54	839,82	665,76	735,10
2006	751,03	771,08	956,21	760,07	829,61
2007	887,85	916,30	1.146,36	917,23	1.008,52
2008	1.047,38	1.083,04	1.369,76	1.070,37	1.241,27
2009	1.165,91	1.227,87	1.558,64	1.247,88	1.421,58
2009/Q1	1.088,26	1.137,62	1.423,23	1.139,46	1.314,37
2009/Q2	1.118,66	1.169,40	1.484,42	1.188,46	1.360,84
2009/Q3	1.145,00	1.205,86	1.530,70	1.225,51	1.392,89
2009/Q4	1.165,91	1.227,87	1.558,64	1.247,88	1.421,58

ISE GDS Portfolio Performance Indices (December 31, 2003 = 100)

TL Based							
	Equal Weighted Indices			Market Value Weighted Indices			REPO
	EQ180-	EQ180+	EQ Composite	MV180-	MV180+	MVComposite	
2004	125,81	130,40	128,11	125,91	130,25	128,09	118,86
2005	147,29	160,29	153,55	147,51	160,36	154,25	133,63
2006	171,02	180,05	175,39	170,84	179,00	174,82	152,90
2007	203,09	221,63	211,76	202,27	221,13	212,42	177,00
2008	240,13	264,15	251,95	239,21	263,57	252,36	203,07
2009	270,34	318,15	293,06	268,84	317,82	295,43	219,59
2009/Q1	250,64	281,08	265,58	249,37	280,55	266,43	208,40
2009/Q2	258,41	295,66	276,29	257,07	295,11	277,75	212,66
2009/Q3	265,36	312,31	287,96	263,89	311,81	290,10	216,35
2009/Q4	270,34	318,15	293,06	268,84	317,82	295,43	219,59

Q: Quarter

GDS: Government Debt securities

ISE PUBLICATIONS		
I- PERIODICALS	ISSN/ISBN	DATE
ISE Review*	ISSN 1301-1642 ISSN 1301-1650	
ISE Finance Award Series Volume 4*	ISBN 975-6450-12-6	2005
II- RESEARCH PUBLICATIONS		
The Impact of Trading Statements by Principal Shareholders and Managers on Their Own Company Share Prices in the Istanbul Stock Exchange.– <i>Selma Kurtay</i>	978-975-6450-24-6	2009
The Role of Financial Markets on Inflation Targeting: Analysis of Correlation between Stock Returns and Inflation – <i>Dr. Cahit Sönmez</i>	978-975-6450-17-8	2007
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