

The shift in equity shares' trading pattern in terms of 'Number of Trades' and 'Turnover'

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DEGREE THESIS	
Arcada	
Degree Programme:	International Business
Identification number:	
Author:	Rashedul Hoque Robin
Title:	The shift in equity shares' trading pattern in terms of 'Trade' and 'Turnover'
Supervisor (Arcada):	Andreas Stenius
<p>Abstract:</p> <p>The objective of this thesis is to understand the trend of market pattern of equity shares, in terms of 'Number of Trades' and 'Turnover' of the listed exchanges in FESE (Federation and Securities Exchange) from year 2006 to 2010. The research study will assist to apprehend whether the European Market, in general, has been more Electronic Order Book (EOB) transaction oriented than that of Off-Electronic Order Book (EOB).</p> <p>The research study was conducted by evaluating annual exchange reports published yearly by Federation of Securities Exchange (FESE). The evaluation was done for individual year from 2006-2010. Ratio calculation was the chief tool to analyze each stock exchange transaction pattern for the time period of 2006-2010.</p> <p>The conclusion exhibited that for each year, from 2006-2006, and almost all the listed exchanges in FESE, Electronic Order Book (EOB) transaction pattern, in terms of 'Number of Trades' and 'Turnover', grabbed more market share than that of Off-EOB.</p>	
Keywords:	'Turnover', Electronic Order Book (EOB) transaction, Electronic Order Book (Off-EOB) transaction, 'Turnover', 'Number of Trades'.
Number of pages:	86
Language:	English
Date of acceptance:	11.12.2011

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1 Introduction

1.1 Background

According to the annual reports from the year 2006 to 2010 published by the Federation of Securities and Exchange (FESE), it is transparent that there has been a prominent change in transactions-pattern in the European stock exchanges listed in FESE. The change in transaction-pattern of equity shares is notable in the possible two ways of transactions; Electronic Order Book (EOB) transactions and Off-electronic Order Book (Off-EOB) transactions. In addition to that, it can also be stated in this way that the trend of transactions in terms of “‘Number of Trades’ of equity shares” and ‘Turnover’ has been slightly, completely or not at all different under both of the ways of transactions; EOB order book and Off-EOB order book transactions.

Valuatum Oy, an equity research company, wants to have a significant increase in the number of customers and sales revenue by focusing on European market. But it only aims to offer its financial software products to the online stock brokers. The company believes that the more the equity shares are traded through online or electronically in a specific stock exchange in a country, the higher the possibility is to have greater number of online stock brokers rather than traditional ones in that country. The company lacks the current and historic information about the market share of each way of trading in terms of ‘Numbers of Trades’ and ‘Turnover’ for all of the European stock exchanges that are listed in Federation of Securities and Exchanges.

Though there were numerical data available from different sources signifying how the amount of trades and ‘Turnover’ had been in the previous years, but those were scattered and, there were no organized and structured result and conclusion in one platform showing clearly how the trading pattern has progressed over the last couple of years. The company wanted to comprehend the step by step development of trading scenario of last 5 years from 2006-2010 quantitatively, especially for those countries with comparatively bigger economy in Europe, in order to find out the ratio of both of the trading

systems, in terms of ‘Number of Trades’ and ‘Turnover’, to the total financial figure in those countries. Such unknown factors were the firepower which set the stage to conduct the empirical research for the company.

1.2 Aim of the research

The purpose of the research study is to collect and analyze the historical data of EOB and Off-EOB transaction, in terms of ‘Number of Trades’ and ‘Turnover’ (in million), with the time period of 5 years (2006-2010) for each of the listed stock exchange in FESE in order to understand the change in the pattern of equity transaction and find the leading online trading oriented equity markets in Europe. The study will assist to come to a conclusion about if a specific listed stock exchange shows the pattern of being more EOB transaction dependent than that of Off-EOB.

Moreover, the research aims to assist Valuatum Oy and other start-ups to decide where to concentrate more and spread the business based on the analysis of the findings.

1.3 Research questions

The aim of the research integrally requires the quest for answers of the following hypothetical questions:

1. How has been the trend in Electronic Order Book (EOB) and Off Electronic Order Book (Off-EOB) transaction pattern in each of the listed stock exchange in Federation of Securities and Exchanges, in terms of ‘Number of Trades’ and ‘Turnover’ from 2006-2010?
2. Considering all the stock exchanges, listed in FESE for a specific year, as a single bunch, how the ratio of EOB and Off-EOB transaction, in terms of ‘Number of Trades’ and ‘Turnover’, has been to the total number of transactions for each year from 2006 to 2010?

1.4 Literature Overview

The company, Valuatum Oy, has not conducted any prior research on the specific topic. As per the company's pre-requirement, the research study has flourished on the basis of the Annual European Exchange Reports (from 2006-2010), published by the Federation of Securities (FESE) Exchanges and the reports have been used as the prime and overarching literature to carry out the research-work.

The annual European Exchange Reports (from 2006-2010) contain the annual trading figures of 'Number of Trades' and 'Turnover' separately for EOB and Off-EOB transactions of the listed stock exchanges in FESE. The 'Number of Trades' and 'Turnover' are the two major constituents of the literature of this research work.

1.5 Limitations

The company, Valuatum Oy, intends to have a gross research on all of the European stock exchanges in order to have a clear overview on the pattern of transactions. But because of the time constraints and broad prospects, it is not feasible to carry out the research covering all the stock exchanges in European markets. That is why the researcher and the company as well complied to limit the research frame within the stock exchanges that are only listed in Federation of Securities and Exchanges.

The researcher also chose the research to be conducted based on the time period starting from 2006 to 2010. Though the company preferred to conduct the research within a time period of last 10 years, but due to the unavailability of the data of the previous years before 2006 the research is confined to the selected time frame.

1.6 Terminology

During the study a reader will come up with few central concepts and terminologies of this research paper. So, for the clarification of the terminologies the researcher intends to explain the definitions of them.

1.6.1 Electronic Order Book (EOB) Transaction

It is the transfers of ownership by way of trades executed through the Exchanges electronic order book, where orders placed by trading members are usually exposed to all market users and automatically matched according to precise rules set up by Exchanges (generally based on price / time priority) and whose prices are displayed to the market. (FESE, 2010, p.2)

In general, the EOB transaction refers to the ownership of a share by an electronic system which is set by stock exchanges. The electronic system deciphers the process where the buyable and sellable shares of the listed companies are exposed to all the stock traders through internet or other electronic system and, the buyer and seller agree on a transaction based on price and quantity.

1.6.2 Off-Electronic Order Book (Off-EOB) Transaction

Off-Electronic Order Book (Off-EOB) Transaction differs from the 1.6.1 Electronic Order Book (EOB) Transaction. Off-EOB Transaction contains trades confirmed through a system managed (directly or indirectly) by the Exchange, where both seller and buyer agree on the transaction (price and quantity). (FESE, 2010, p.2)

In other way, the Off-EOB transaction refers to the ownership of a share in which trades are executed through a system set by the exchange and both the buyer and seller agree on the transaction based on price and quantity directly or indirectly.

1.6.3 Turnover

The total number of cash financial instruments or shares traded during a certain period multiplied by their respective executed/traded prices- is called trading value or 'Turnover' (FESE, 2010, p.4)

1.6.4 Trade

In simple term, Trade is called a transaction of a security made by both buyer and seller through particular system or mechanism. (Investorwords, n.d.)

1.6.5 Total Number of Trades

The total trades that are made in one day in a stock exchange are called Total 'Number of Trades' for that specific financial day.

1.6.6 Listed Company

If the shares of a company are listed and traded in a specific exchange, then the company is called listed company (FESE, 2010, p.2). The exchanges that are listed in a certain organization are called listed exchanges.

2 EOB vs. OFF-EOB

The starting base of the thesis is that the company, Valuatum Oy, wants to spread its financial products to the European Market. But Valuatum Oy only develops software products and it only aims to offer its products to online stock brokers all over Europe. The company has come to a conclusion and it believes that the more the equity shares are traded through online or electronically in a specific stock exchange in a country, the higher the possibility is there to have greater number of online stock brokers rather than traditional ones in that country. The equity share are traded through online or electronically means the equity traders do not have to communicate with stock brokers directly and they can execute their trades through an automated system by internet. Traditional trading means to execute each trade with the help of a stock broker via telephone or email.

EOB transaction indicates the 'Number of Trades' executed online or electronically and the 'Turnover', made through those trades, falls into 'Turnover' in EOB transaction" in a specific stock exchange. So the higher the 'Number of Trades' and 'Turnover' in EOB transaction in a specific exchange, the higher probability is there to have more online stock brokers than the traditional brokers in that exchange. Similarly, the higher the 'Number of Trades' and 'Turnover' in Off-EOB transaction in a specific exchange, the higher probability there is to have more online stock brokers than the traditional brokers in that exchange. Eventually, the demographics of EOB transaction and Off-EOB trans-

action in a stock exchange, in terms of ‘Number of Trades’ and ‘Turnover’, would assist Valuatum Oy to find out the kind of customer and market they are looking for.

3 RESEARCH METHOD

The research aims to collect and collate quantitative data from the annual exchange reports (2006-2010) published by FESE, and then analyze those data separately for each of the listed exchange in Federation of European Securities Exchanges (FESE) in order to assist the company, Valuatym Oy, to come to an understanding about the scenario of transaction trend between the periods of 2006 to 2010. The research approach, therefore, is inductive; which is collection of data and analysis to come up with new prospect. The method for the research follows the grounded theory where the conclusion is developed without the initial theoretical framework and with the analysis and observation of collection of data (Mark, Philip & Adrian 2003, pp. 85-93).

The fundamental base of the research starts with the collection of primary data in which data collection method can be tailored according to the specific needs of the research (Janet, p.272). The primary data established the necessity and importance of the research work. The primary data includes only short discussions and briefings from the company employees. The gross fact of the selected stock markets and the objective of the study were unknown before the starting point. Such factors contributed to conduct interview as it combines valid and reliable data that are relevant to research questions and objectives (Mark, Philip & Adrian 2003, p. 245).

The secondary data is collected from different websites of selected stock exchanges and, annual reports (from 2006-2010) of Federation of European Securities Exchanges (FESE). Chiefly, the essential data were taken from the annual European Exchange Reports dated from 2006-2010 published by Federation of European Securities Exchanges (FESE). The European Exchange Reports represents a valuable source of integrated information on Europe’s exchange industry and is compiled by the Federation of European Securities Exchanges (FESE). The information, rendered in the European Exchange Reports, has been compiled consistently based on the data accumulated by the

FESE Economics and Statistics Committee (ESC) in cooperation with the financial departments of every member exchange (FESE, n.d.). Moreover, the validity of the trading data in FESE Exchange Reports altogether with the data in the tables in the research paper is substantiated through the ‘European Equity Market Report’, published yearly by FESE, which gathers data from all the market segments operated by FESE members (FESE, n.d.).

The collection of secondary data represents itself as numeric forms under specific terms and terminologies. The research is mainly constructed on the basis of ratio and descriptive analysis of secondary data. The gathered data was formatted into Microsoft excel sheets and the analysis was done majorly through ratio-percentage calculation basis. The analysis of accumulated data was graphically presented in the form of different charts and graphs so that to make study more perceptible. Graphical presentations have also been described in written form in order to make a clear understanding of the analysis.

4 FEDERATION OF EUROPEAN SECURITIES EXCHANGES

Federation Of European Securities Exchanges (FESE) is a trade association and keen defender of the European Internal Market which is a single market in which the free movement of goods, services, capital and persons is ensured and in which European citizens are free to live, work, study and do business. FESE represent public regulated markets which facilitates both the institutional and retail investors transparent and neutral price formation of the admitted securities in FESE.

4.1 Listed Members of FESE

The Federation of European Securities Exchanges (FESE) represents 46 exchanges in equities, bonds, derivatives and commodities through 21 full members from 30 countries, as well as 4 Observer Members. (FESE, n.d.)

Table 1. The Member Stock Exchanges in FESE (FESE, n.d.)

Full Members	Full Members	Observer Members
Athens Exchange	London Metal Exchange	Belgrade Stock Exchange
Boerse Stuttgart	Luxembourg Stock Exchange	RTS Exchange
Bolsas y Mercados Españoles (BME)	Malta Stock Exchange	Tel-Aviv Stock Exchange
incorporating	NASDAQ OMX	
Bolsas y Mercados Españoles (Barcelona)	incorporating	
Bolsas y Mercados Españoles (Bilbao)	NASDAQ OMX Armenia	
Bolsas y Mercados Españoles (Madrid)	NASDAQ OMX Nordic Exchange Stockholm	
Bolsas y Mercados Españoles (MEFF)	NASDAQ OMX Nordic Exchange Helsinki	
Bolsas y Mercados Españoles (Valencia)	NASDAQ OMX Nordic Exchange Copenhagen	
Börse Berlin	NASDAQ OMX Riga	
Bratislava Stock Exchange	NASDAQ OMX Tallinn	
Bucharest Stock Exchange	NASDAQ OMX Vilnius	
Bulgarian Stock Exchange - Sofia	NASDAQ OMX Nordic Exchange Iceland	
CEE Stock Exchange AG	NYSE Euronext	
incorporating	incorporating	
Budapest Stock Exchange	Euronext Amsterdam	
Ljubljana Stock Exchange	Euronext Brussels	
Prague Stock Exchange	Euronext Lisbon	
Wiener Börse AG	Euronext Paris	
Cyprus Stock Exchange	Euronext.liffe	
Deutsche Börse AG	Oslo Stock Exchange	
ICE Futures	SIX Swiss Exchange	
Irish Stock Exchange	Warsaw Stock Exchange	
Istanbul Stock Exchange		

5 European Exchange Report

Every year Federation of Securities and Exchange (FESE) publishes European Exchange Report that represents a valuable source of information of the listed member exchanges in FESE. Financial figure and trading data are reflected on those yearly reports for easy and transparent comparison of exchanges' business models.

5.1 Annual Exchange Report- 2006

In the table below, the column, named **Exchange**, shows all the listed stock exchanges in FESE in 2006. The **Electronic order book transactions** column is split into two sub-columns name Trades and 'Turnover' (Eur m) respectively. The Trades represents the data of total 'Number of Trades' traded through EOB and the 'Turnover' (Eur m) means the amount of total 'Turnover' in million Euros for a specific stock exchange. The **Off-Electronic order book transactions** column is split into two sub-columns and defined similarly as **EOB**. The cells containing '0' or no value in the table mean that the data is unavailable in the report.

Table 2. Annual transaction report of listed exchanges in FESE in 2006 (FESE, 2006, pp. 4-27)

Exchange	2006			
	Electronic order book transactions		Off-Electronic order book transactions	
	Trades	Turnover (EUR m)	Trades	Turnover (EUR m)
Athens Exchange	11128589.00	68034.00	2225717.00	17019.90
Bolsas y Mercados Españoles (BME)	22967332.00	1150565.20	231100.00	385068.80
Boerse Stuttgart	0.00	0.00	0.00	0.00
Borsa Italiana	57527000.00	1145649.90	67000.00	112377.70
Bratislava Stock Exchange	20574.00	33.40	1448.00	36.70
Bucharest Stock Exchange	601499.00	1163.90	193.00	105.10
Bulgarian Stock Exchange	187896.00	1169.90	298.00	247.00
Budapest Stock Exchange	1464580.00	22524.60	333.00	2100.90
Ljubljana Stock Exchange	166246.00	801.30	893.00	650.20
Prague Stock Exchange	567893.00	28360.70	3138.00	1654.70
Vienna Stock Exchange	3177974.00	64892.60	0.00	0.00
Cyprus Stock Exchange	533126.00	2811.30	42.00	450.00
Deutsche Börse	53131428.00	1592747.40	55886764.00	572100.20
Irish Stock Exchange	259571.00	9237.90	190882.00	55354.70
Istanbul Stock Exchange	0.00	0.00	0.00	0.00
London Stock Exchange	78246360.00	2215963.00	16553175.00	3774528.50
Luxembourg Stock Exchange	14558.00	187.10	0.00	0.00
Malta Stock Exchange	30371.00	205.10	0.00	0.00
NASDAQ OMX Nordic	29690560.00	775659.10	1984781.00	261302.60
NASDAQ OMX Nordic - Copenhagen	0.00	0.00	0.00	0.00
NASDAQ OMX Nordic - Helsinki	0.00	0.00	0.00	0.00
NASDAQ OMX Nordic - Iceland	0.00	0.00	0.00	0.00
NASDAQ OMX Nordic - Stockholm	0.00	0.00	0.00	0.00
NASDAQ OMX Nordic - Vilnius	0.00	0.00	0.00	0.00
NYSE Euronext	104521792.00	2375475.00	723890.00	672112.00
Oslo Børs	8663262.00	253766.60	163235.00	67204.90
SIX Swiss Exchange	20289232.00	691773.50	1687453.00	411668.20
Warsaw Stock Exchange	10280959.00	40401.10	1691.00	2834.10
TOTAL	403470802.00	10441422.60	79722033.00	6336816.20

The table above represents the 27 listed stock exchanges in Federation of Securities Exchange with the both EOB and Off-EOB transaction data, in terms of trades and total ‘Turnover’ (in million), for the year of 2006. Only the NASDAQ OMX Nordic represents the total transaction data of NASDAQ OMX Nordic- Helsinki, NASDAQ OMX Nordic- Stockholm, NASDAQ OMX Nordic- Iceland, NASDAQ OMX Nordic- Vilnius, NASDAQ OMX Nordic- Copenhagen altogether.

5.2 Annual Exchange Report- 2007

In the table below, the column, named **Exchange**, shows all the listed stock exchanges in FESE in 2010. The **Electronic order book transactions** column is split into two sub-columns name Trades and 'Turnover' (Eur m) respectively. The Trades represents the data of total 'Number of Trades' traded through EOB and the 'Turnover' (Eur m) means the amount of total 'Turnover' in million Euros for a specific stock exchange. The **Off-Electronic order book transactions** column is split into two sub-columns and defined similarly as **EOB**. The cells containing '0' or no value in the table mean that the data is unavailable in the report.

Table 3. Annual transaction report of listed exchanges in FESE in 2007 (FESE, 2007, pp. 4-25)

Exchange	2007			
	Electronic order book transactions		Off-Electronic order book transactions	
	Trades	Turnover (EUR m)	Trades	Turnover (EUR m)
Athens Exchange	11615994	94846.2	2613598	27518.3
Bolsas y Mercados Españoles (BME)	34637200	1665761.9	225418	494558.9
Boerse Stuttgart				
Borsa Italiana	72500296	1574592.8	68413	105606.9
Bratislava Stock Exchange	4784	10.8	1052	10.8
Bucharest Stock Exchange	734346	1682.9	194	307.1
Bulgarian Stock Exchange	457221	3983.5	10952	657.2
Budapest Stock Exchange	1629278	34403.2	95	207.1
Ljubljana Stock Exchange	229696	1952	1031	1430.3
Prague Stock Exchange	670873	35953.8	765	627.6
Vienna Stock Exchange	5576556	94488.8		
Cyprus Stock Exchange	685603	3728.8	169	290.6
Deutsche Börse	86880744	2442977	58138800	701173.4
Irish Stock Exchange	609430	16879.3	253519	82670.9
Istanbul Stock Exchange				
London Stock Exchange	138833632	3133478.5	22155996	4411491.5
Luxembourg Stock Exchange	14642	175.7		
Malta Stock Exchange	10149	64.7	0	0
NASDAQ OMX Nordic	46087736	1036515.8	2417672	285290.8
NASDAQ OMX Nordic - Copenhagen				
NASDAQ OMX Nordic - Helsinki				
NASDAQ OMX Nordic - Iceland				
NASDAQ OMX Nordic - Stockholm				
NASDAQ OMX Nordic - Vilnius				
NYSE Euronext	153977344	3289384	758982	797427
Oslo Børs	11916739	320886.7	191831	78167.1
SIX Swiss Exchange	30365892	1007615.1	1709730	361236.5
Warsaw Stock Exchange	15203866	61151.7	2961	2724.4
TOTAL	612642021.00	14820533.20	88551178.00	7351396.40

The table above represents the 27 listed stock exchanges in Federation of Securities Exchange with the both EOB and Off-EOB transaction data, in terms of trades and total 'Turnover' (in million), for the year of 2007. Only the NASDAQ OMX Nordic represents the total transaction data of NASDAQ OMX Nordic- Helsinki, NASDAQ OMX Nordic- Stockholm, NASDAQ OMX Nordic- Iceland, NASDAQ OMX Nordic- Vilnius, NASDAQ OMX Nordic- Copenhagen altogether.

5.3 Annual Exchange Report- 2008

In the table below, the column, named **Exchange**, shows all the listed stock exchanges in FESE in 2008. The **Electronic order book transactions** column is split into two sub-columns name Trades and 'Turnover' (Eur m) respectively. The Trades represents the data of total 'Number of Trades' traded through EOB and the 'Turnover' (Eur m) means the amount of total 'Turnover' in million Euros for a specific stock exchange. The **Off-Electronic order book transactions** column is split into two sub-columns and defined similarly as **EOB**. The cells containing '0' or no value in the table mean that the data is unavailable in the report.

Table 4. Annual transaction report of listed exchanges in FESE in 2008 (FESE, 2008, pp. 4-26)

Exchange	2008			
	Electronic order book transactions		Off-Electronic order book transactions	
	Trades	Turnover (EUR m)	Trades	Turnover (EUR m)
Athens Exchange	9375799	64742.9	3606	13229.9
Bolsas y Mercados Españoles (BME)	37156188	1243166.5	207659	411391.8
Boerse Stuttgart	840391	9900	0	0
Borsa Italiana	69293592	1029126.9	0	0
Bratislava Stock Exchange	1754	4.1	415	11.1
Bucharest Stock Exchange	800811	966	77	84.6
Bulgarian Stock Exchange	378466	939.2	10355	381.3
Budapest Stock Exchange	1893044	20916.4	73	47.1
Ljubljana Stock Exchange	219382	970.6	778	634
Prague Stock Exchange	1395871	33764	315	414.6
Vienna Stock Exchange	6205029	71850.6		
Cyprus Stock Exchange	414406	1373.6	144	127.5
Deutsche Börse	118036408	2191909.2	23877492	1031594.1
Irish Stock Exchange	998076	12815.7	265276	43406.3
Istanbul Stock Exchange	45616364	171854.7	7	148.8
London Stock Exchange	194313088	2601411	7465809	1760787
Luxembourg Stock Exchange	23094	1311		
Malta Stock Exchange	8656	48.9	0	0
NASDAQ OMX Nordic	53354888	818367.6	2188376	100070.8
NASDAQ OMX Nordic - Copenhagen				
NASDAQ OMX Nordic - Helsinki				
NASDAQ OMX Nordic - Iceland				
NASDAQ OMX Nordic - Stockholm				
NASDAQ OMX Nordic - Vilnius				
NYSE Euronext	191045696	2606171	784308	466345
Oslo Børs	16872192	275916.1	77057	32251.6
SIX Swiss Exchange	41867200	957270.9	180609	66765.4
Warsaw Stock Exchange	9836831	45748.3	2969	2105.2
TOTAL	799947226.00	12160545.20	35065325.00	3929796.10

The table above represents the 27 listed stock exchanges in Federation of Securities Exchange with the both EOB and Off-EOB transaction data, in terms of trades and total ‘Turnover’ (in million), for the year of 2008. Only the NASDAQ OMX Nordic represents the total transaction data of NASDAQ OMX Nordic- Helsinki, NASDAQ OMX Nordic- Stockholm, NASDAQ OMX Nordic- Iceland, NASDAQ OMX Nordic- Vilnius, NASDAQ OMX Nordic- Copenhagen altogether.

5.4 Annual Exchange Report- 2009

In the table below, the column, named **Exchange**, shows all the listed stock exchanges in FESE in 2009. The **Electronic order book transactions** column is split into two sub-columns name Trades and 'Turnover' (Eur m) respectively. The Trades represents the data of total 'Number of Trades' traded through EOB and the 'Turnover' (Eur m) means the amount of total 'Turnover' in million Euros for a specific stock exchange. The **Off-Electronic order book transactions** column is split into two sub-columns and defined similarly as **EOB**. The cells containing '0' or no value in the table mean that the data is unavailable in the report.

Table 5. Annual transaction report of listed exchanges in FESE in 2009 (FESE, 2009, pp. 4-26)

Exchange	2009			
	Electronic order book transactions		Off-Electronic order book transactions	
	Trades	Turnover (EUR m)	Trades	Turnover (EUR m)
Athens Exchange	10108927	46151.5	3249	4549.8
Bolsas y Mercados Españoles (BME)	31606642	897173.8	186545	251396
Boerse Stuttgart	716976	8208.1	0	0
Borsa Italiana	63898044	673141.1	0	0
Bratislava Stock Exchange	1557	3.1	455	118.8
Bucharest Stock Exchange	803639	563.9	96	76.2
Bulgarian Stock Exchange	190518	339.5	442	18
Budapest Stock Exchange	3349838	18449.1	47	13.9
Ljubljana Stock Exchange	135853	719.9	0	0
Prague Stock Exchange	1571640	17471.9	127	92.6
Vienna Stock Exchange	5067313	36448.9	0	0
Cyprus Stock Exchange	358820	1227.6	76	60.3
Deutsche Börse	86868000	1084237.5	14989663	159182.2
Irish Stock Exchange	914308	7098.8	229259	19456.6
Istanbul Stock Exchange	68318528	218197	5	80.4
London Stock Exchange	156441568	1270019.9	9564100	977054.6
Luxembourg Stock Exchange	14312	213.8	0	0
Malta Stock Exchange	6811	25.4	0	0
NASDAQ OMX Nordic	51159892	498984.6	999794	43384.5
NASDAQ OMX Nordic - Copenhagen				
NASDAQ OMX Nordic - Helsinki				
NASDAQ OMX Nordic - Iceland				
NASDAQ OMX Nordic - Stockholm				
NASDAQ OMX Nordic - Vilnius				
NYSE Euronext	167127648	1382736.2	465530	123445
Oslo Børs	15780814	163642.8	48106	12139.5
SIX Swiss Exchange	31990112	529887.9	15454	14055.3
Warsaw Stock Exchange	13274986	38818.8	3409	2596.3
TOTAL	709706746.00	6893761.10	26506357.00	1607720.00

The table above represents the 27 listed stock exchanges in Federation of Securities Exchange with the both EOB and Off-EOB transaction data, in terms of trades and total 'Turnover' (in million), for the year of 2009. Only the NASDAQ OMX Nordic represents the total transaction data of NASDAQ OMX Nordic- Helsinki, NASDAQ OMX Nordic- Stockholm, NASDAQ OMX Nordic- Iceland, NASDAQ OMX Nordic- Vilnius, NASDAQ OMX Nordic- Copenhagen altogether.

5.5 Annual Exchange Report- 2010

In the table below, the column, named **Exchange**, shows all the listed stock exchanges in FESE in 2010. The **Electronic order book transactions** column is split into two sub-columns name Trades and 'Turnover' (Eur m) respectively. The Trades represents the data of total 'Number of Trades' traded through EOB and the 'Turnover' (Eur m) means the amount of total 'Turnover' in million Euros for a specific stock exchange. The **Off-Electronic order book transactions** column is split into two sub-columns and defined similarly as **EOB**. The cells containing '0' or no value in the table mean that the data is unavailable in the report.

Table 6. Annual transaction report of listed exchanges in FESE in 2010 (FESE, 2010, pp. 4-26)

Exchange	2010			
	Electronic order book transactions		Off-Electronic order book transactions	
	Trades	Turnover (EUR m)	Trades	Turnover (EUR m)
Athens Exchange	7876553	32564.2	2625	2189.6
Bolsas y Mercados Españoles (BME)	40402056	1031318.2	198476	219108.4
Boerse Stuttgart	805843	10401.3		
Borsa Italiana	0	0	0	0
Bratislava Stock Exchange	6276	21.6	469	208.7
Bucharest Stock Exchange	515800	542.3	140	161.6
Bulgarian Stock Exchange	103180	280.9	0	0
Budapest Stock Exchange	2612330	19925.4	135	76.5
Ljubljana Stock Exchange	101912	360.8	0	0
Prague Stock Exchange	1162508	15258.2	135	132.8
Vienna Stock Exchange	4783239	36814.7		
Cyprus Stock Exchange	201817	553.5	48	284.8
Deutsche Börse	99900496	1236939.8	15646501	188817.9
Irish Stock Exchange	899791	6752	157728	16017.8
Istanbul Stock Exchange	81133552	313570.1	16	308.4
London Stock Exchange	0	0	0	0
Luxembourg Stock Exchange	11890	163.1	0	0
Malta Stock Exchange	8767	36.2	0	0
NASDAQ OMX Nordic	68799152	568050.4	729710	44656
NASDAQ OMX Nordic - Copenhagen				
NASDAQ OMX Nordic - Helsinki				
NASDAQ OMX Nordic - Iceland				
NASDAQ OMX Nordic - Stockholm				
NASDAQ OMX Nordic - Vilnius				
NYSE Euronext	180371472	1532631	845539	129320
Oslo Børs	18735452	198753	53082	18448.7
SIX Swiss Exchange	32103416	595339.4	6933	14875.6
Warsaw Stock Exchange	13120775	52260	5076	7466.7
TOTAL	553656277.00	5652536.10	17646613.00	642073.50

The table above represents the 27 listed stock exchanges in Federation of Securities Exchange with the both EOB and Off-EOB transaction data, in terms of trades and total 'Turnover' (in million), for the year of 2010. Only the NASDAQ OMX Nordic represents the total transaction data of NASDAQ OMX Nordic- Helsinki, NASDAQ OMX Nordic- Stockholm, NASDAQ OMX Nordic- Iceland, NASDAQ OMX Nordic- Vilnius, NASDAQ OMX Nordic- Copenhagen altogether.

6 EUROPEAN EXCHANGE REPORT 2010- ANALYSIS

Though it is not a very simple and easy task to analyze comparisons among different exchanges, the author has attempted to compare the stock exchanges that are listed in FESE in 2010 based on the ‘Number of Trades’ in EOB transaction.

The table below presents a ratio analysis and then a descriptive analysis of each of the listed stock exchange in FESE for 2010 only. The thorough analysis of the exchanges individually from year 2006-2010 is manifested in the ‘Appendix’ section of this research paper. The cells containing ‘0’ value in the table mean that the data is unavailable in the report. The cells containing ‘0’ or no value in the table mean that the data is unavailable in the report.

The stock exchanges, in the below table, are arranged into from largest to smallest “number of equity trades” in Electronic Order Book transaction in the first column for the fiscal year 2010 only. NASDAQ OMX NORDIC, with the orange colored cell, is a joint stock company and represents four stock exchanges together that are NASDAQ OMX Nordic – Copenhagen, NASDAQ OMX Nordic – Helsinki, NASDAQ OMX Nordic – Iceland, NASDAQ OMX Nordic – Stockholm and NASDAQ OMX Nordic – Vilnius. The annual FESE report of year 2010 does not mention the transaction data of the Italian Stock Exchange (Borsa Italiana) and London Stock Exchange.

Table 7: European Exchange Report 2010- Analysis (FESE, 2010, pp. 4-26)

Exchange	2010							
	Electronic order book transactions		Off-Electronic order book transactions		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	Trades	Turnover (EUR m)	Trades	Turnover (EUR m)	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
NYSE Euronext	180371472	1532631	845539	129320	99.53%	92.22%	0.47%	7.78%
Deutsche Börse	99900496	1236940	15646501	188818	86.46%	86.76%	13.54%	13.24%
Istanbul Stock Exchange	81133552	313570	16	308	100.00%	0.00%	0.00%	0.00%
NASDAQ OMX Nordic	68799152	568050	729710	44656	98.95%	92.71%	1.05%	7.29%
Bolsas y Mercados Españoles (BME)	40402056	1031318	198476	219108	99.51%	82.48%	0.49%	17.52%
SIX Swiss Exchange	32103416	595339	6933	14876	99.98%	97.56%	0.02%	2.44%
Oslo Børs	18735452	198753	53082	18449	99.72%	91.51%	0.28%	8.49%
Warsaw Stock Exchange	13120775	52260	5076	7467	99.96%	87.50%	0.04%	12.50%
Athens Exchange	7876553	32564	2625	2190	99.97%	93.70%	0.03%	6.30%
Vienna Stock Exchange	4783239	36815	0	0	100.00%	100.00%	0.00%	0.00%
Budapest Stock Exchange	2612330	19925	135	77	99.99%	99.62%	0.01%	0.38%
Prague Stock Exchange	1162508	15258	135	133	99.99%	99.14%	0.01%	0.86%
Irish Stock Exchange	899791	6752	157728	16018	85.09%	29.65%	14.91%	70.35%
Bucharest Stock Exchange	515800	542	140	162	99.97%	77.04%	0.03%	22.96%
Cyprus Stock Exchange	201817	554	48	285	99.98%	66.03%	0.02%	33.97%
Bulgarian Stock Exchange	103180	281	0	0	100.00%	100.00%	0.00%	0.00%
Ljubljana Stock Exchange	101912	361	0	0	100.00%	100.00%	0.00%	0.00%
Luxembourg Stock Exchange	11890	163	0	0	100.00%	100.00%	0.00%	0.00%
Malta Stock Exchange	8767	36	0	0	100.00%	100.00%	0.00%	0.00%
Bratislava Stock Exchange	6276	22	469	209	93.05%	9.38%	6.95%	90.62%

6.1 NYSE Euronext

In 2010, **NYSE Euronext** stands at the peak of the above table according to the ‘Number of Trades’ in EOB transaction. The total trade amount for EOB transaction is about 180 million, which is 99.53% of the total trade consisted of both the EOB and Off-EOB transaction. The trade amount for Off-EOB transaction is minimal and around 0.47% of the total figure (EOB + Off-EOB). The ‘Turnover’ is also higher in EOB transaction

than that of Off-EOB transaction. The 'Turnover' represents an impressive amount of 1532631 million Euro. 'Turnover' for Off-EOB transaction is 129320 million Euros, which is only 7.78% of the total 'Turnover'.

6.2 Deutsche Börse Group

Deutsche Börse Group follows the NYSE Euronext in the second row, with a trade number of almost 100 million in EOB transaction. The EOB transaction in 'Number of Trades' represents 86.46% of the total 'Number of Trades', where Off-EOB transaction 14% approximately. In 'Turnover' segment, Off-EOB transaction also stays lower than that of EOB. The 'Turnover' value in Off-EOB transaction is around 188818 million Euros, 13.24% of the total 'Turnover' (EOB + Off-EOB). The 'Turnover' in EOB transaction signifies a conspicuous value of about 123693.8 million Euros, which also stands second in the row after NYSE Euronext in EOB transaction.

6.3 Istanbul Stock Exchange

In **Istanbul Stock Exchange**, the total trade amount for EOB transaction is about 81 million, which is almost 100% of the total trade consisted of both the EOB and Off-EOB transaction. The trade amount for Off-EOB transaction is a tiny figure and comparatively 0% of the total figure (EOB + Off-EOB). The 'Turnover' is also higher in EOB transaction than that of Off-EOB transaction. The 'Turnover' represents an impressive amount of 313570 million Euro. And the 'Turnover' for Off-EOB transaction is 308 million Euros, which is about 0% of the total 'Turnover'.

6.4 NASDAQ OMX NORDIC

Though the **NASDAQ OMX NORDIC** situates right after the Istanbul Stock Exchange in relation to 'Number of Trades' in EOB transaction, the 'Turnover' value in EOB transaction is 5668050 million Euros, higher than that of Istanbul Stock Exchange. The EOB transaction in 'Number of Trades' is 98.95% and in 'Turnover' is 92.71%, and represents higher percentage of share than that of Off-EOB transaction.

6.5 Spanish Stock Exchange (Bolsas y Mercados Españoles)

Like Istanbul Stock Exchange-NASDAQ OMX NORDIC, though the **Spanish Stock Exchange (Bolsas y Mercados Españoles)** situates right after the NASDAQ OMX NORDIC in relation to ‘Number of Trades’ in EOB transaction, the ‘Turnover’ value in EOB transaction is 1031318 million Euros, higher than that of NASDAQ OMX NORDIC. The EOB transaction in ‘Number of Trades’ is 99.51% and in ‘Turnover’ is 82.48%, and represents higher percentage of share than that of Off-EOB transaction. Here it is also noticeable that the ‘Turnover’ value in Off-Electronic transaction highest among all the exchanges in the table.

6.6 Six Swiss Exchange

In the **Six Swiss Exchange**, the total trade amount for EOB transaction is about 31 million, which is almost 100% of the total trade consisted of both the EOB and Off-EOB transaction. The trade amount for Off-EOB transaction is a tiny figure of 6933 and 0.2% of the total figure (EOB + Off-EOB). The ‘Turnover’ is also higher in EOB transaction than that of Off-EOB transaction. The ‘Turnover’ represents an impressive amount of 595339 million Euro and 97.56% of the total trade. And the ‘Turnover’ for Off-EOB transaction is 14876 million Euros, which is about 2.44% of the total ‘Turnover’.

6.7 Oslo Stock Exchange (Oslo Børs)

In the **Oslo Stock Exchange (Oslo Børs)**, the total trade amount for EOB transaction is around 19 million, which is almost 100% of the total trade consisted of both the EOB and Off-EOB transaction. The trade amount for Off-EOB transaction is a tiny figure of 53082, higher than that of Six Swiss Exchange, and about 3% of the total figure (EOB + Off-EOB). The ‘Turnover’ is also higher in EOB transaction than that of Off-EOB transaction. The ‘Turnover’ represents a prominent amount of 198753 million Euro and 99.72% of the total trade. And the ‘Turnover’ for Off-EOB transaction is 18449 million Euros, which is about 8.49% of the total ‘Turnover’. The Off-EOB transaction in ‘Turnover’ as well is higher than that of Six Swiss Exchange.

6.8 Warsaw Stock Exchange

In the **Warsaw Stock Exchange**, the total trade amount for EOB transaction is around 13 million, which is almost 100% of the total trade consisted of both the EOB and Off-EOB transaction. The trade amount for Off-EOB transaction is as little figure as 5076, significantly lower than that of Oslo Stock Exchange, and about 0.1% of the total figure (EOB + Off-EOB). The 'Turnover' is also higher in EOB transaction than that of Off-EOB transaction. The 'Turnover' represents a less than satisfactory amount of 52260 million Euro and 87.50% of the total trade. And the 'Turnover' for Off-EOB transaction is only 7467 million Euros, which is about 12.50% of the total 'Turnover'. The Off-EOB transaction in 'Turnover' as well is significantly lower than that of Oslo Stock Exchange.

6.9 Athens Exchange

In the **Athens Exchange**, the total trade amount for EOB transaction is about 8 million, which is approximately 99.97% of the total trade consisted of both the EOB and Off-EOB transaction. The trade amount for Off-EOB transaction is as little figure as 2627, significantly lower than that of Warsaw Stock Exchange, and about 0.03% of the total figure (EOB + Off-EOB). The 'Turnover' is also higher in EOB transaction than that of Off-EOB transaction. The 'Turnover' in EOB transaction exhibits only an amount of 32564 million Euro and about 94% of the total trade. And the 'Turnover' for Off-EOB transaction is 2190 million Euros, which is about 6.30% of the total 'Turnover'. The Off-EOB transaction in 'Turnover' as well is significantly lower than that of Warsaw Stock Exchange.

6.10 Vienna Stock Exchange

In 2010, the annual report of FESE only illustrates the data for EOB transaction of **Vienna Stock Exchange**. That is why it is not possible to make comparison between the EOB and Off-EOB transaction in terms of 'Number of Trades' and 'Turnover'.

6.11 Budapest Stock Exchange

In the **Budapest Stock Exchange**, the total trade amount for EOB transaction is about 2 million only, which is almost 100% of the total trade consisted of both the EOB and Off-EOB transaction. The 'Number of Trades' in Off-EOB transaction is conspicuously as little figure as 135 and about 0.01% of the total figure (EOB + Off-EOB). The 'Turnover' is also higher in EOB transaction than that of Off-EOB transaction. The 'Turnover' in EOB transaction exhibits only an amount of 19925 million Euro and almost 100% of the total trade. And the 'Turnover' for Off-EOB transaction is 77 million Euros, which is about 0.38% of the total 'Turnover'. The Off-EOB transaction in 'Turnover' as well is significantly lower than that of Athens Exchange.

6.12 Prague Stock Exchange

In the **Prague Stock Exchange**, the total trade amount for EOB transaction is about 1.2 million only, which is almost 100% of the total trade consisted of both the EOB and Off-EOB transaction. The 'Number of Trades' in Off-EOB transaction is conspicuously as little figure and same as 135 as Budapest Stock Exchange, and about 0.01% of the total figure (EOB + Off-EOB). The 'Turnover' is also higher in EOB transaction than that of Off-EOB transaction. The 'Turnover' in EOB transaction exhibits only an amount of 15258 million Euro and about 99.14% of the total trade. And the 'Turnover' for Off-EOB transaction is 133 million Euros, which is about 0.86% of the total 'Turnover'. It is observable that the Off-EOB transaction in 'Turnover' is higher than that of Budapest Stock Exchange.

6.13 Irish Stock Exchange

In the **Irish Stock Exchange**, the total trade amount for EOB transaction is around 0.9 million, which is approximately 85% of the total trade consisted of both the EOB and Off-EOB transaction. The trade amount for Off-EOB transaction is 157728, prominently higher than that of from Oslo Stock Exchange to Prague Stock Exchange, and about 14.91% of the total figure (EOB + Off-EOB). But scenario differs in the 'Turnover' segment. The 'Turnover' in EOB transaction is about 30% where for Off-EOB transac-

tion is surprisingly about 70%, though the 'Number of Trades' in EOB transaction is higher than of Off-EOB transaction. The 'Turnover' value for Off-EOB transaction is 16018, prominently higher than that of from Warsaw Stock Exchange to Prague Stock Exchange.

6.14 Bucharest Stock Exchange

In the **Bucharest Stock Exchange**, the total trade amount for EOB transaction is about 0.5 million only, which is almost 100% of the total trade consisted of both the EOB and Off-EOB transaction. The 'Number of Trades' in Off-EOB transaction is conspicuously as little figure as 140 and about 0.03% of the total figure (EOB + Off-EOB). The 'Turnover' is also higher in EOB transaction than that of Off-EOB transaction. The 'Turnover' in EOB transaction exhibits only an amount of 542 million Euro and almost 77% of the total trade. And the 'Turnover' for Off-EOB transaction is 162 million Euros, which is about 23 % of the total 'Turnover'. The Off-EOB transaction in 'Turnover' and 'Number of Trades' as well is significantly lower than that of Irish Stock Exchange.

6.15 Cyprus Stock Exchange

In the **Cyprus Stock Exchange**, the total trade amount for EOB transaction is about 0.2 million only, which is almost 100% of the total trade consisted of both the EOB and Off-EOB transaction. The 'Number of Trades' in Off-EOB transaction is conspicuously 48 only and about 0.02% of the total figure (EOB + Off-EOB). The 'Turnover' is also higher in EOB transaction than that of Off-EOB transaction. The 'Turnover' in EOB transaction exhibits only an amount of 545 million Euros, indicating a slight increase than that of Bucharest Exchange, and about 66% of the total trade. And the 'Turnover' for Off-EOB transaction is 285 million Euros, which is about 34 % of the total 'Turnover'. The Off-EOB transaction in 'Turnover' is higher than that of Bucharest Stock Exchange.

6.16 Bratislava Stock Exchange

In the **Bratislava Stock Exchange**, the total trade number for EOB transaction is around 6276, which is approximately 93% of the total trade, which is consisted of both the EOB and Off-EOB transaction. The 'Number of Trades' for Off-EOB transaction is only 469 and it is about 7% of the total figure (EOB + Off-EOB). But scenario is quite the opposite in the 'Turnover' segment. The 'Turnover' in EOB transaction is about 10% where for Off-EOB transaction is startlingly about 91%, though the 'Number of Trades' in EOB transaction is superbly higher than that of Off-EOB transaction.

6.17 Other Exchanges

In 2010, the annual report of FESE only shows the data for EOB transaction of **Bulgarian Stock Exchange**, **Ljubljana Stock Exchange**, **Luxembourg Stock Exchange** and **Malta Stock Exchange**. That is why it is not possible to make comparison between the EOB and Off-EOB transaction in terms of 'Number of Trades' and 'Turnover'.

7 DISCUSSION AND CONCLUSION

The research has progressed gradually following the two research questions stated earlier. So the conclusion of whole work can be reached through discussing and analyzing the two research questions individually. The research question 1, which is about the analysis of trend of EOB and Off-EOB transaction, is analyzed in ‘APPENDIX’ section due to large amount of data and description.

7.1 Research Question 2- Listed Exchanges as a Single Bunch

Considering all the stock exchanges as a single bunch, how the ratio of EOB and Off-EOB, in terms of ‘Number of Trades’ and ‘Turnover’, had been to the total number of transactions for each year from 2006 to 2010?

The author has taken all the listed exchanges together for a specific year and considered the exchanges as a single bunch for that year.

When considered as a single bunch, the majority of the listed exchanges, during the period from 2006 to 2010, exhibits that EOB transaction, in terms of ‘Number of Trades’, has been the market dominant. The tables and figures below give visual overview over the market trend of ‘Number of Trades’ and ‘Turnover’ in both EOB and Off-EOB transaction that occurred from 2006-2010.

Table 8. Whole transaction scenario of total ‘Number of Trades’ from 2006-2010 (FESE, 2006-2010)

European stock markets					
Number of Trades					
Year	EOB	Off-EOB	Total	Ratio of EOB	Ratio of Off-EOB
2006	403470802	77496316	480967118	83.89%	16.11%
2007	612642021	85937580	698579601	87.70%	12.30%
2008	799947226	35065325	835012551	95.80%	4.20%
2009	709706746	26506357	736213103	96.40%	3.60%
2010	553656277	17646613	571302890	96.91%	3.09%

The year 2006 represents the total figure of all the listed exchanges as a single bunch of EOB and Off-EOB transactions in terms of ‘Number of Trades’. It also shows the total EOB and Off-EOB transactions ratio to the total ‘Number of Trades’. In year 2006, the total ‘Number of Trades’ in EOB transaction in all the exchanges together is around 4035 million which is 83.89%, significantly greater than that of Off- EOB transaction, 16.11%.

From 2007-2009, the EOB transaction exhibits a gradual percentage rise in figure while Off- EOB transaction shows the opposite direction. Though the figures in 2009 and 2010 are less than that of previous years, on percentage basis they are relatively higher.

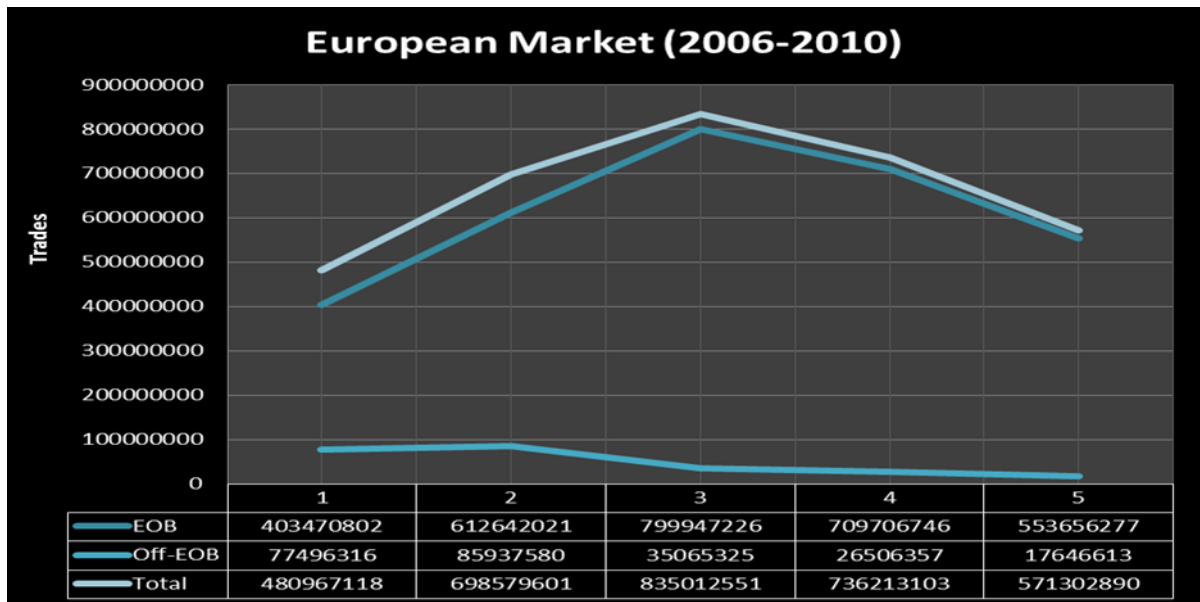


Figure 1. Total EOB & Off-EOB trades fluctuation in numbers from 2006-2010 (FESE, 2006-2010)

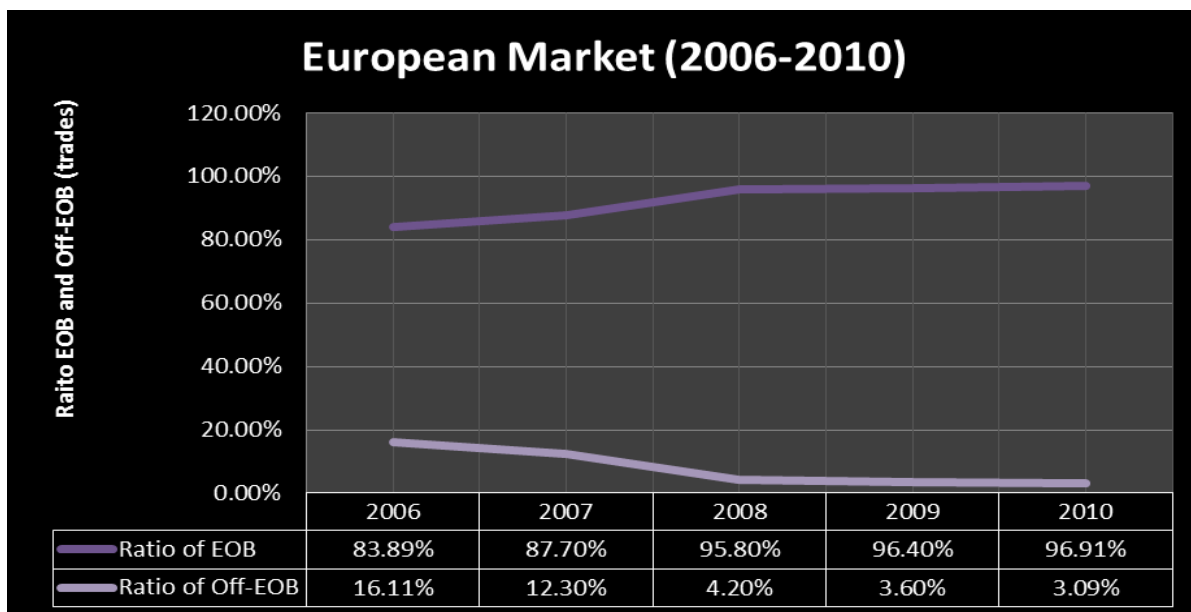


Figure 2. Total EOB & Off-EOB trades fluctuation in percentage from 2006-2010. *The ratio analysis is done based on data of 'Number of Trades' of FESE from 2006-2010 (FESE, 2006-2010)

Table 9. Whole transaction scenario of 'Turnover' (million EUR) from 2006-2010 (FESE, 2006-2010)

European stock markets					
Turnover (million EUR)					
Year	EOB	Off-EOB	Total	Ratio of EOB	Ratio of Off-EOB
2006	10441422.6	6336816.2	16778238.8	62.23%	37.77%
2007	14820533.2	7351396.4	22171929.6	66.84%	33.16%
2008	12160545.2	3929796.1	16090341.3	75.58%	24.42%
2009	6893761.1	1607720	8501481.1	81.09%	18.91%
2010	5652536.1	642073.5	6294609.6	89.80%	10.20%

The year 2006 represents the overall financial figure of all the listed exchanges in FESE of EOB and Off-EOB transactions in terms of number of 'Turnover' (million EUR). It also shows the total EOB and Off-EOB transactions ratio to the aggregate 'Turnover'. In year 2006, 'Turnover' in EOB transaction in all the exchanges together is around 10441422.6 million which is 62.23% of total 'Turnover', significantly greater than that of Off- EOB transaction 37.77%.

From 2007-2010, the EOB and off-EOB transaction exhibits a gradual % decrease hand-in-hand. But the percentage calculation reflects step-by-step increase in ‘Turnover’ in EOB transaction and opposite scenario for Off-EOB transaction.

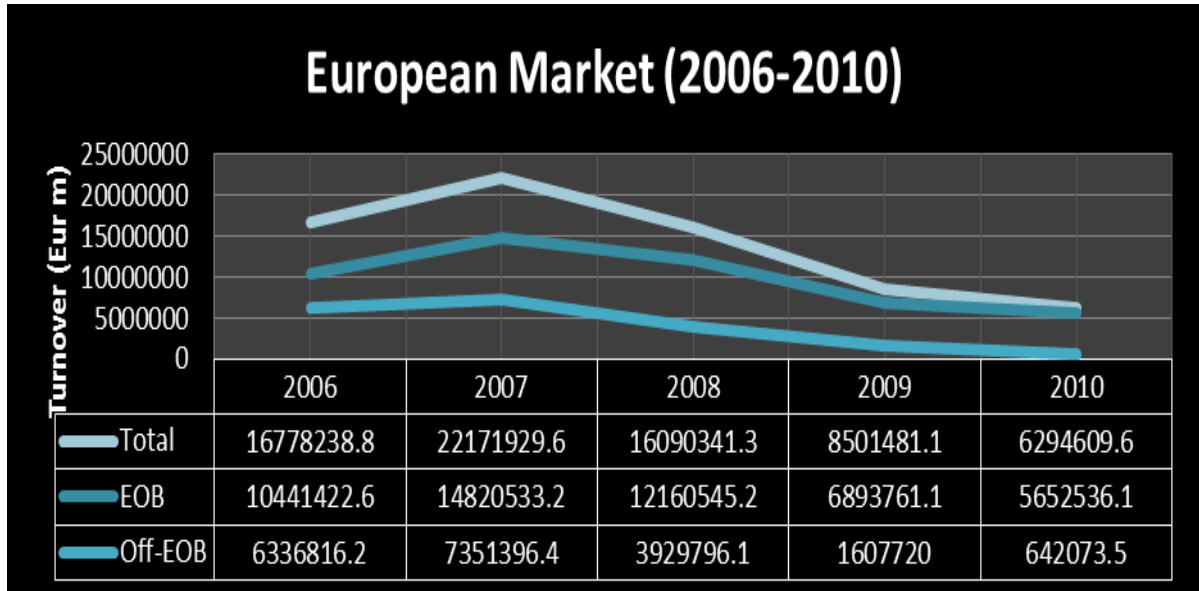


Figure 3. Net EOB & Off-EOB ‘Turnover’ fluctuation in numbers from 2006-2010 (FESE, 2006-2010)

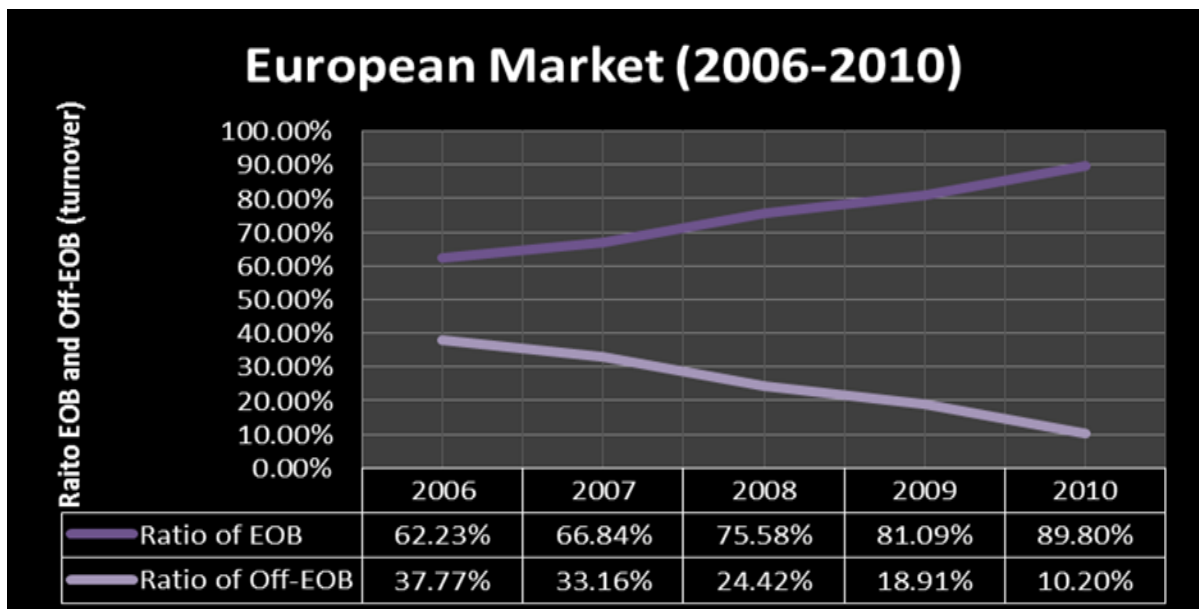


Figure 4. Net EOB & Off-EOB ‘Turnover’ fluctuation in percentage from 2006-2010. *The ratio analysis is done based on data of ‘Turnover’ of FESE from 2006-2010 (FESE, 2006-2010)

From the above tables and graphical presentations, it is clearly indicated that EOB transaction pattern, in terms of both the ‘Number of Trades’ and ‘Turnover’, has conspicuously gained more market share, from year 2006 to the subsequent years, than Off-EOB transaction pattern. Therefore, it is conclusive that from year 2006-2010 as a whole the transaction pattern has moved toward the EOB pattern very prominently and the majority of the stock exchanges of the five single bunches is EOB transaction oriented. On the other hand, the ratio of Off-EOB transaction, in terms of ‘Number of Trades’ and ‘Turnover’, has been in downtrend to the total number of transactions for each year from 2006 to 2010. These results answer and satisfy the research question 2 and, give a premise to Valuatum Oy and other start-ups as well to comprehend that the market as a whole is EOB transaction oriented.

7.2 Recommendation

Besides, some of the exchanges from year 2006-2010 present themselves as Off-EOB transaction oriented when ‘Turnover’ is considered as the main stimuli, though in terms of ‘Number of Trades’ those exchanges may or may not be Off-EOB transaction oriented. The table below represents the exchanges, from year 2006-2010, that are Off-EOB transaction oriented in terms of ‘Turnover’ only. The percentage value in parenthesis represents the ratio of ‘Turnover’ (in mil) in Off-EOB transaction to the total ‘Turnover’ (in mil).

*Table 10. Off-EOB transaction oriented exchanges in terms of ‘Turnover’ from 2006-2010 (FESE, 2006-2010) *The ratio analysis is done based on data of ‘Turnover’ of FESE from 2006-2010 (FESE, 2006-2010)*

Year	2006	2007	2008	2009	2010
Exchange	Irish Stock Exchange (85.70%)	Irish Stock Exchange (83.04%)	Irish Stock Exchange (77.21%)	Bratislava Stock Exchange (97.46%)	Bratislava Stock Exchange (90.62%)
	London Stock Exchange (63.01%)	London Stock Exchange (58.47%)	Bratislava Stock Exchange (73.03%)	Irish Stock Exchange (73.27%)	Irish Stock Exchange (70.35%)
	Bratislava Stock Exchange (52.35%)				

Valuatum Oy and other companies may conclude not to select the above exchanges in the table. Otherwise, in the same way the company may seek out for the exchanges topped in terms of ‘Turnover’ value.

It might be good step for Valuatum Oy to focus on first the leading exchanges in terms of ‘Turnover’ value in EOB transaction as it, ‘Turnover’ or revenue, is the ultimate goal to achieve. The table below presents the top 5 exchanges for each year from 2006-2010 in terms of ‘Turnover’ EOB transaction.

*Table 11. The top 5 exchanges for each year from 2006-2010 in terms of ‘Turnover’ in EOB transaction. *The ratio analysis is done based on data of ‘Number of Trades’ of FESE from 2006-2010 (FESE, 2006-2010)*

2006		2007		2008		2009		2010	
Exchange	Ratio of EOB turnover to total turnover (EUR m)	Exchange	Ratio of EOB turnover to total turnover (EUR m)	Exchange	Ratio of EOB turnover to total turnover (EUR m)	Exchange	Ratio of EOB turnover to total turnover (EUR m)	Exchange	Ratio of EOB turnover to total turnover (EUR m)
NYSE Euronext	77.95%	Vienna Stock Exchange	100.00%	Boerse Stuttgart	100.00%	Boerse Stuttgart	100.00%	Boerse Stuttgart	100.00%
London Stock Exchange	36.99%	Luxembourg Stock Exchange	100.00%	Borsa Italiana	100.00%	Borsa Italiana	100.00%	Bulgarian Stock Exchange	100.00%
Deutsche Börse	73.57%	Malta Stock Exchange	100.00%	Vienna Stock Exchange	100.00%	Ljubljana Stock Exchange	100.00%	Ljubljana Stock Exchange	100.00%
Spanish Stock Exchange	74.92%	Budapest Stock Exchange	99.99%	Luxembourg Stock Exchange	100.00%	Vienna Stock Exchange	100.00%	Vienna Stock Exchange	100.00%
Borsa Italiana	91.07%	Prague Stock Exchange	99.89%	Malta Stock Exchange	100.00%	Luxembourg Stock Exchange	100.00%	Luxembourg Stock Exchange	100.00%

Moreover, apart from selecting only the leading exchanges in terms of ‘Turnover’ in EOB transaction, Valuatum Oy and other companies may want to examine the percentage value change over the years from 06-10 for each of the listed exchange in terms of ‘Turnover’ and ‘Number of Trades’ in EOB transaction. Such observation will lead the company to oversee the future trend of EOB transaction.

Table 12. The EOB transaction pattern in terms of 'Turnover' and 'Number of Trades' from 2006-2010. *The ratio analysis is done based on data of 'Number of Trades' of FESE from 2006-2010 (FESE, 2006-2010)

	2006		2007		2008		2009		2010	
	Ratio of Electronic order book transactions									
Exchange	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
Athens Exchange	83.33%	79.99%	81.63%	77.51%	99.96%	83.03%	99.97%	91.03%	99.97%	93.70%
Bolsas y Mercados Españoles (BME)	99.00%	74.92%	99.35%	77.11%	99.44%	75.14%	99.41%	78.11%	99.51%	82.48%
Borsa Italiana	99.88%	91.07%	99.91%	93.71%	100.00%	100.00%	100.00%	100.00%	0.00%	0.00%
Bratislava Stock Exchange	93.42%	47.65%	81.97%	50.00%	80.87%	26.97%	77.39%	2.54%	93.05%	9.38%
Bucharest Stock Exchange	99.97%	91.72%	99.97%	84.57%	99.99%	91.95%	99.99%	88.10%	99.97%	77.04%
Budapest Stock Exchange	99.98%	91.47%	99.99%	99.40%	100.00%	99.78%	100.00%	99.92%	99.99%	99.62%
Bulgarian Stock Exchange	99.84%	82.57%	97.66%	85.84%	97.34%	71.12%	99.77%	94.97%	100.00%	100.00%
Cyprus Stock Exchange	99.99%	86.20%	99.98%	92.77%	99.97%	91.51%	99.98%	95.32%	99.98%	66.03%
Deutsche Börse	48.74%	73.57%	59.91%	77.70%	83.17%	68.00%	85.28%	87.20%	86.46%	86.76%
Irish Stock Exchange	57.62%	14.30%	70.62%	16.96%	79.00%	22.79%	79.95%	26.73%	85.09%	29.65%
Istanbul Stock Exchange	0.00%	0.00%	0.00%	0.00%	100.00%	99.91%	100.00%	91.03%	100.00%	99.90%
Ljubljana Stock Exchange	99.47%	55.20%	99.55%	57.71%	99.65%	60.49%	100.00%	100.00%	100.00%	100.00%
London Stock Exchange	82.54%	36.99%	86.24%	41.53%	96.30%	59.64%	94.24%	56.52%	0.00%	0.00%
Luxembourg Stock Exchange	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Malta Stock Exchange	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
NASDAQ OMX Nordic	93.73%	74.80%	95.02%	78.42%	96.06%	89.10%	98.08%	92.00%	98.95%	92.71%
NYSE Euronext	99.31%	77.95%	99.51%	80.49%	99.59%	84.82%	99.72%	91.80%	99.53%	92.22%
Oslo Børs	98.15%	79.06%	98.42%	80.41%	99.55%	89.53%	99.70%	93.09%	99.72%	91.51%
Prague Stock Exchange	99.45%	94.49%	99.89%	98.28%	99.98%	98.79%	99.99%	99.47%	99.99%	99.14%
SIX Swiss Exchange	0.00%	62.69%	0.00%	73.61%	0.00%	93.48%	0.00%	97.42%	0.00%	97.56%
Vienna Stock Exchange	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Warsaw Stock Exchange	99.98%	93.44%	99.98%	95.73%	99.97%	95.60%	99.97%	93.73%	99.96%	87.50%

8 FUTURE RESEARCH PROPOSAL

This research has been limited merely to those stock exchanges listed in Federation and Securities Exchange (FESE). This limitation only renders a short view of the trends and shifts in equity shares' trading pattern of the listed exchanges in FESE which represent a few parts of the total European Market. It is very crucial to analyze all the European exchanges with more historical data in order to have a solid apprehension and view on European Market aggregately. Moreover, only ratio analysis done in research only indicates the ratio of EOB and Off-transaction to the transaction figure where it is also demanding to run other statistical analyses, based on the past data and future prediction, so that the Valuatum Oy and other equal companies may be confident enough to spread their businesses in Europe. That is why, to extend and clarify the research study, the suggestive approach for Valuatum Oy and other companies can be:

- To gather and collate past data of all the European exchanges for the last 10 years (2001-2010) for both of EOB and Off-EOB transaction, in terms of 'Number of Trades' and 'Turnover'.
- To make a trend analysis of the exchanges separately for each year based on numeric value of 'Turnover' in EOB and Off-EOB transaction. And it is also important to make a trend analysis of each year for all the exchanges together in order to compare the 'Turnover' value.
- To pick the top-best performers based on the average performance from year 2001-2010 in terms of 'Turnover' value in EOB transaction as Valuatum Oy is merely interested on the exchanges performing well in EOB segment.

REFERENCES

1. Federation of European Securities Exchanges (n.d.) **About Members** [Internet], FESE. Available from: < <http://www.fese.be/en/?inc=cat&id=4>> [Accessed 15 March 2012].
2. Federation of European Securities Exchanges (2006-2010) **European Exchange Report** [Internet], FESE. Available from: < <http://www.fese.be/en/?inc=cat&id=29>> [Accessed 01 November 2012].
3. Federation of European Securities Exchanges (n.d.) **European Exchange Report** [Internet], FESE. Available from: <<http://www.fese.be/en/?inc=cat&id=29>> [Accessed 01 November 2012].
4. Federation of European Securities Exchanges (n.d.) **European Equity Market Report** [Internet], FESE. Available from: <<http://www.fese.be/en/?id=81&inc=art>> [Accessed 01 November 2012].
5. Federation of European Securities Exchanges (2006) **European Exchange Report 2006** [Internet], FESE. Available from: <<http://www.fese.be/en/?inc=cat&id=29>> [Accessed 10 September 2012].
6. Federation of European Securities Exchanges (2006) **European Exchange Report 2006** [Internet], FESE. Available from: <<http://www.fese.be/en/?inc=cat&id=29>> [Accessed 10 September 2012].
7. Federation of European Securities Exchanges (2006) **European Exchange Report 2006** [Internet], FESE. Available from: <http://www.fese.be/_lib/files/RA_FESE_European_Exchange_report_2006_Jun08.pdf> [Accessed 12 September 2012].
8. Federation of European Securities Exchanges (2007) **European Exchange Report 2007** [Internet], FESE. Available from: <<http://www.fese.be/en/?inc=cat&id=29>> [Accessed 14 September 2012].
9. Federation of European Securities Exchanges (2007) **European Exchange Report 2007** [Internet], FESE. Available from: <http://www.fese.be/_lib/files/EUROPEAN_EXCHANGE_REPORT_2007_for_publication_Jan09.pdf> [Accessed 14 September 2012].

10. Federation of European Securities Exchanges (2008) **European Exchange Report 2008** [Internet], FESE. Available from:
<<http://www.fese.be/en/?inc=cat&id=29>> [Accessed 25 September 2012].
11. Federation of European Securities Exchanges (2008) **European Exchange Report 2008** [Internet], FESE. Available from:
<http://www.fese.be/_lib/files/EUROPEAN_EXCHANGE_REPORT_2008_final_updated.pdf> [Accessed 25 September 2012].
12. Federation of European Securities Exchanges (2009) **European Exchange Report 2009** [Internet], FESE. Available from:
<<http://www.fese.be/en/?inc=cat&id=29>> [Accessed 26 September 2012].
13. Federation of European Securities Exchanges (2009) **European Exchange Report 2009** [Internet], FESE. Available from:
<http://www.fese.be/_lib/files/EUROPEAN_EXCHANGE_REPORT_2009_FV.pdf> [Accessed 26 September 2012].
14. Federation of European Securities Exchanges (2010) **European Exchange Report 2010** [Internet], FESE. Available from:
<<http://www.fese.be/en/?inc=cat&id=29>> [Accessed 29 September 2012].
15. Federation of European Securities Exchanges (2010) **European Exchange Report 2010** [Internet], FESE. Available from:
<http://www.fese.be/_lib/files/EUROPEAN_EXCHANGE_REPORT_2010_final_final.pdf> [Accessed 29 September 2012].
16. Federation of European Securities Exchanges (2010) **Electronic Order Book (EOB) Transactions** [Internet], FESE. Available from:
<<http://www.fese.be/en/?inc=art&id=51>> [Accessed 27 April 2012].
17. Federation of European Securities Exchanges (n.d.) **Full Members** [Internet], FESE. Available from: < <http://www.fese.be/en/?inc=page&id=7>> [Accessed 19 March 2012].
18. Federation of European Securities Exchanges (2010) **Listed Company** [Internet], FESE. Available from: <<http://www.fese.be/en/?inc=art&id=51>> [Accessed 01 November 2012].
19. Federation of European Securities Exchanges (n.d.) **Observer Members** [Internet], FESE. Available from: < <http://www.fese.be/en/?inc=page&id=9>> [Accessed 19 March 2012].

20. Federation of European Securities Exchanges (2010) **Off Electronic Order Book Transactions (Off EOB)** [Internet], FESE. Available from: <<http://www.fese.be/en/?inc=art&id=51>> [Accessed 27 April 2012].
21. Federation of European Securities Exchanges (2010) **'Turnover'** [Internet], FESE. Available from: <<http://www.fese.be/en/?inc=art&id=51>> [Accessed 27 April 2012].
22. InvestorWords (n.d.) **Trade** [Internet], InvestorWords. Available from: <<http://www.investorwords.com/5014/trade.html>> [Accessed 01 November 2012].
23. Janet (n.d) **Nursing research: reading, using, and creating evidence** <Internet>. Google Books. Available from: <http://books.google.fi/books?id=8S3HS020KTgC&pg=PA272&dq=primary+data&hl=en&ei=kTLnTqXVFIuWOuP04fAL&sa=X&oi=book_result&ct=result&sqi=2&redir_esc=y#v=onepage&q=primary%20data&f=false> [Accessed 13 December 2011].
24. Mark, Philip & Adrian (2003) **Research Methods for Business Students**. 3rd ed. Pearson education limited. pp. 85-92.
25. Mark, Philip & Adrian (2003) **Research Methods for Business Students**. 3rd ed. Pearson education limited. p.245.

APPENDIX

The appendix contains the ratio analysis of all the listed exchanges in FESE separately from 2006-2010. The data of each table is gathered from FESE annual reports (2006-2010) and the ratio analysis is done by the author based on the table-data. The figures are illustrated on the basis of table-data and there is a descriptive analysis of the table-data for each of the exchanges by the author.

Appendix 1: Athens Exchange

Table 13. Annual figure (2006-2010) of Athens Exchange from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Athens Exchange from 2006-2010 (FESE, 2006-2010)

Athens Exchange	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	11128589	2225717	68034	17019.9	83.33%	79.99%	16.67%	20.01%
2007	11615994	2613598	94846.2	27518.3	81.63%	77.51%	18.37%	22.49%
2008	9375799	3606	64742.9	13229.9	99.96%	83.03%	0.04%	16.97%
2009	10108927	3249	46151.5	4549.8	99.97%	91.03%	0.03%	8.97%
2010	7876553	2625	32564.2	2189.6	99.97%	93.70%	0.03%	6.30%

The Athens Stock Exchange is a stock exchange located in Athens, Greece.

In 2006, the total 'Number of Trades' in EOB transaction is around 11.13 million where for Off-EOB is 2.26 million approximately. The difference between 'Number of Trades' of EOB and Off-EOB transaction is 9 million which is prominently significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off-EOB) is 83.33% and for Off-EOB it is 16.67%. Similar scenario, EOB transaction is higher than that of Off-EOB is apparent in 'Turnover' segment. The ratio of 'Turnover' in EOB transaction is 79.99% to the total 'Turnover' in 2006. The 'Turnover' for Off-EOB transaction is 20.01% which is significantly 75% $<(79.99-20.01/79.99)*100>$ lower than that of EOB transaction.

In the next two consecutive years from 07-2008, the EOB transaction in total 'Number of Trades' has been 81.63%, 99.96%, 99.97% and 99.97% respectively, and higher than

that of Off- EOB transaction. Moreover, from 2006-2010 the ‘Turnover’ in EOB transaction has relatively been higher than that of Off- EOB transaction.

The relative fluctuation between EOB and Off- EOB transaction, in terms of both the total ‘Number of Trades’ and ‘Turnover’, is presented in figure 5 & 6.

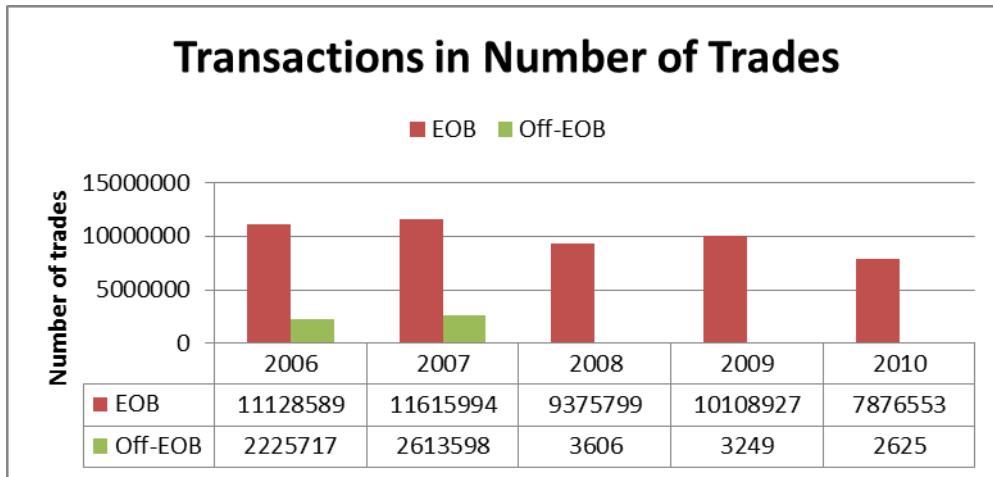


Figure 5. The ‘Number of Trades’-pattern in EOB and Off-EOB transaction in Athens Exchange (FESE, 2006-2010) 2010 (FESE, 2006-2010)

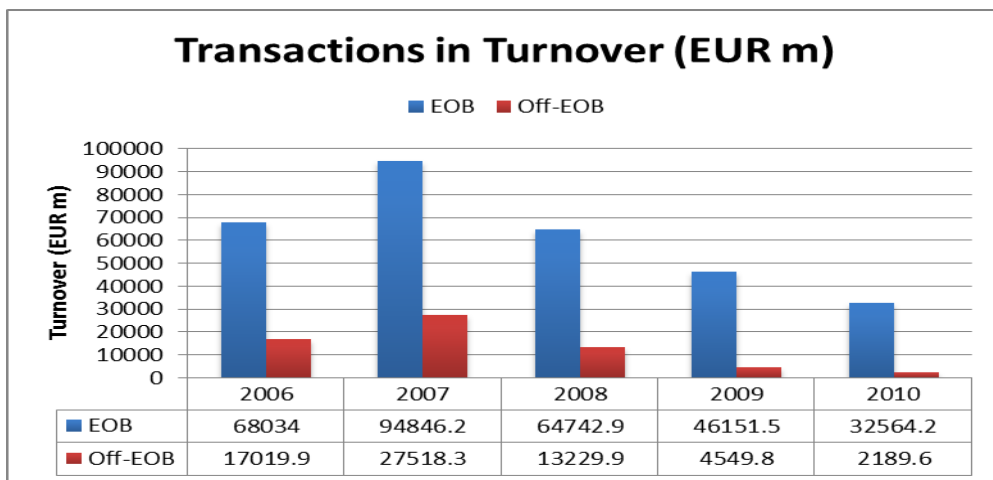


Figure 6. The ‘Turnover’-pattern in EOB and Off-EOB transaction in Athens Exchange from 2006-2010 2010 (FESE, 2006-2010)

Appendix 2: Bolsas y Mercados Españoles (BME)

Table 14. Annual figure (2006-2010) of BME from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Bolsas y Mercados Españoles from 2006-2010 (FESE, 2006-2010)

Bolsas y Mercados Españoles (BME)	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	22967332	231100	1150565	385068.8	99.00%	74.92%	1.00%	25.08%
2007	34637200	225418	1665762	494558.9	99.35%	77.11%	0.65%	22.89%
2008	37156188	207659	1243167	411391.8	99.44%	75.14%	0.56%	24.86%
2009	31606642	186545	897173.8	251396	99.41%	78.11%	0.59%	21.89%
2010	40402056	198476	1031318	219108.4	99.51%	82.48%	0.49%	17.52%

Bolsas y Mercados Españoles (BME), the Spanish Stock Exchange, includes the stock exchanges in Madrid, Barcelona, Bilbao and Valencia.

In 2006, the total 'Number of Trades' in EOB transaction is around 22.97 million where for Off-EOB is 0.23 million approximately. The difference between 'Number of Trades' of EOB and Off- EOB transaction is about 22.74 million which is prominently significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off- EOB) is 99% and for Off- EOB it is 1%. Similar scenario, EOB transaction is higher than that of Off-EOB is apparent in 'Turnover' segment. The ratio of 'Turnover' in EOB transaction is 74.92% to the total 'Turnover' in 2006. The 'Turnover' for Off- EOB transaction is 25.08% which is significantly 67% lower than that of EOB transaction.

In the next four consecutive years from 07-2010, the EOB transaction in total 'Number of Trades' has been 99.35%, 99.44%, 99.41% and 99.51% respectively, and higher than that of Off- EOB transaction. Moreover, from 2006-2010 the 'Turnover' in EOB transaction as well has relatively been higher than that of Off- EOB transaction.

The relative fluctuation between EOB and Off- EOB transaction, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 7 & 8.

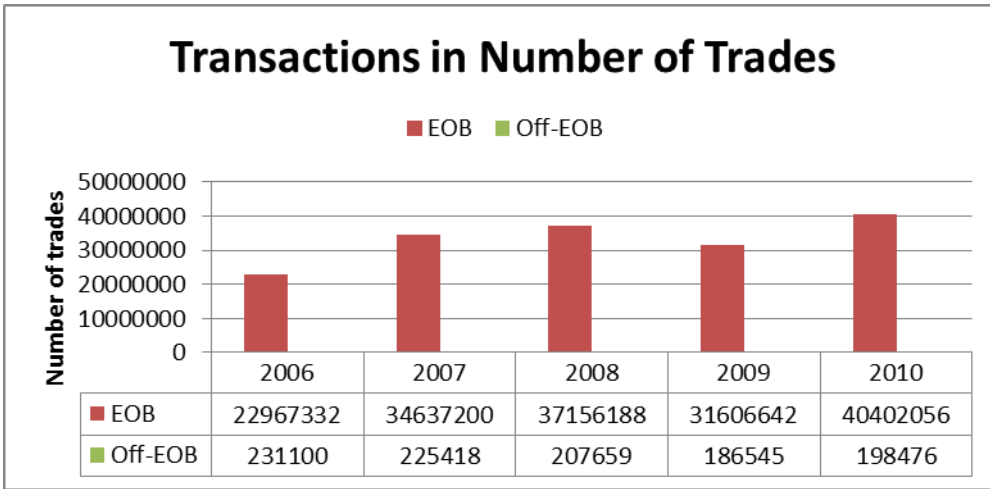


Figure 7. The 'Number of Trades'-pattern in EOB and Off-EOB transaction in BME from 2006-2010 (FESE, 2006-2010)

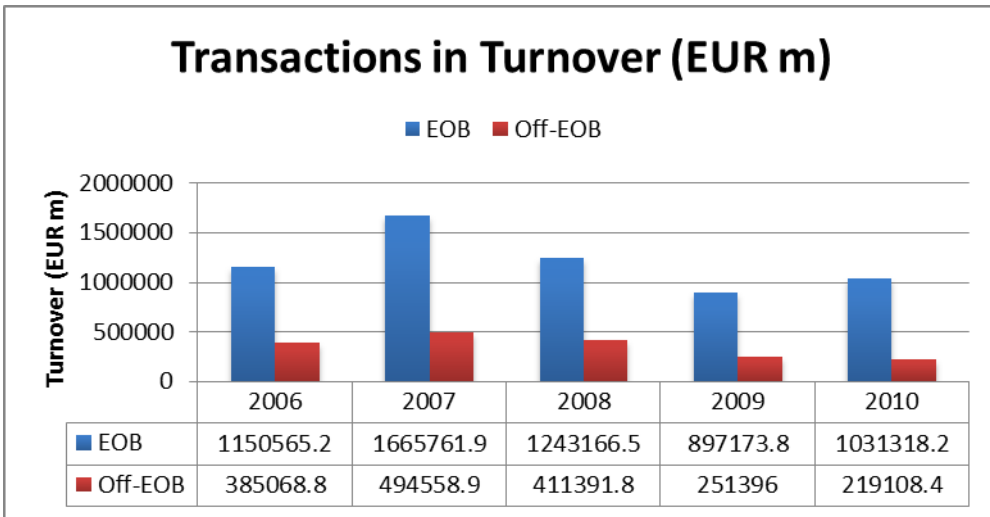


Figure 8. The 'Turnover'-pattern in EOB and Off-EOB transaction in BME from 2006-2010 (FESE, 2006-2010)

Appendix 3: Borsa Italiana

Table 15. Annual figure (2006-2010) of Borsa Italiana from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Borsa Italiana from 2006-2010 (FESE, 2006-2010)

Borsa Italiana	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	57527000	67000	1145650	112378	99.88%	91.07%	0.12%	8.93%
2007	72500296	68413	1574593	105607	99.91%	93.71%	0.09%	6.29%
2008	69293592	0	1029127	0	100.00%	100.00%	0.00%	0.00%
2009	63898044	0	673141.1	0	100.00%	100.00%	0.00%	0.00%
2010	0	0	0	0	0.00%	0.00%	0.00%	0.00%

The Borsa Italiana, based in Milan, is Italy's main stock exchange.

In 2006, the total 'Number of Trades' in EOB transaction is around 57.23 million where for Off-EOB is 0.07 million approximately. The difference between 'Number of Trades' of EOB and Off- EOB transaction is about 57.16 million which is prominently significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off- EOB) is 99.88% and for Off- EOB it is 0.12%. Similar scenario, EOB transaction is higher than that of Off-EOB is apparent in 'Turnover' segment. The ratio of 'Turnover' in EOB transaction is 91.07% to the total 'Turnover' in 2006. The 'Turnover' for Off- EOB transaction is 8.93% which is significantly 90% lower than that of EOB transaction.

In the next three consecutive years from 2008-2010, the 'Number of Trades' and 'Turnover' data are presented only in EOB transaction in FESE reports. According to the reports, in absence of Off-EOB transaction data, EOB transaction has been the key market-share taker.

The relative fluctuation between EOB and Off- EOB transaction, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 9 & 10.

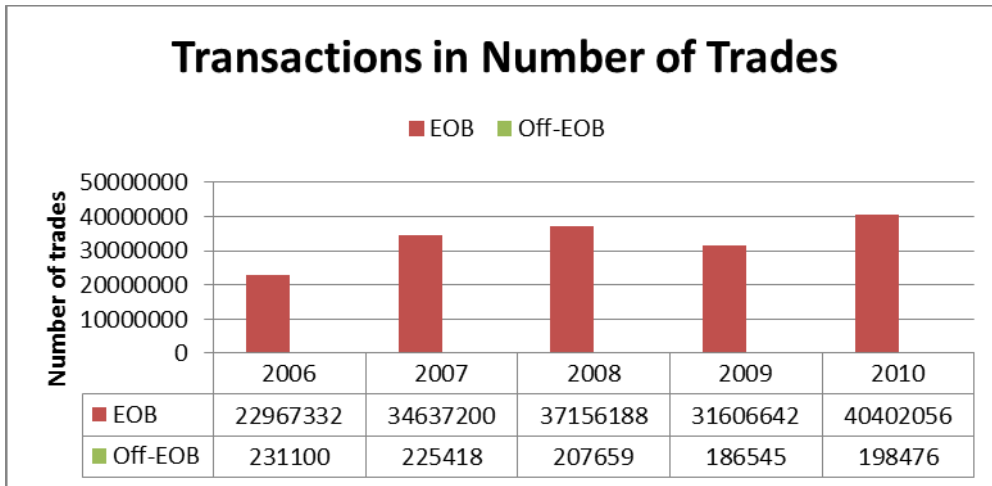


Figure 9. The 'Number of Trades'-pattern in EOB and Off-EOB transaction in Borsa Italiana from 2006-2010 (FESE, 2006-2010)

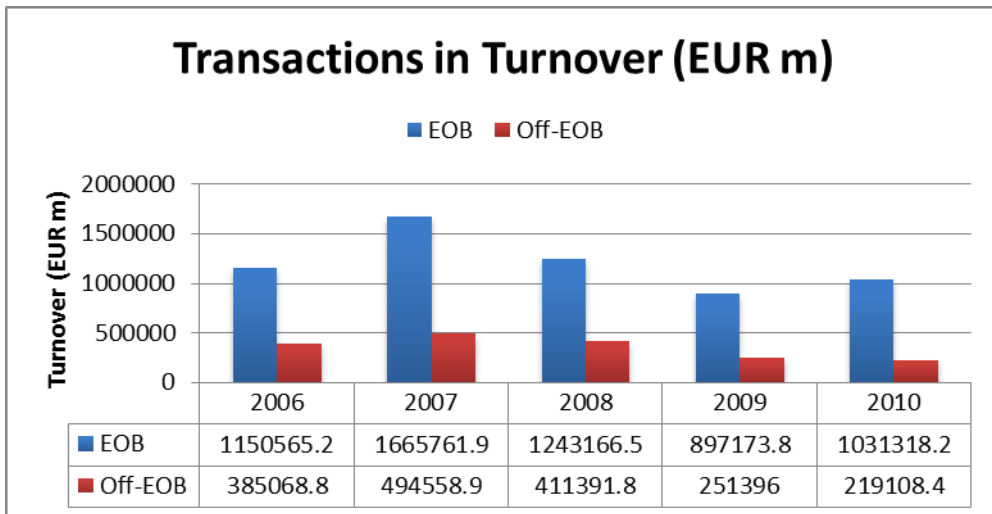


Figure 10. The 'Turnover'-pattern in EOB and Off-EOB transaction in Borsa Italiana from 2006-2010 (FESE, 2006-2010)

Appendix 4: Bratislava Stock Exchange

Table 16. Annual figure (2006-2010) of Bratislava Stock Exchange from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Bratislava Stock Exchange from 2006-2010 (FESE, 2006-2010)

Bratislava Stock Exchange	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	20574	1448	33	37	93.42%	47.65%	6.58%	52.35%
2007	4784	1052	11	11	81.97%	50.00%	18.03%	50.00%
2008	1754	415	4	11	80.87%	26.97%	19.13%	73.03%
2009	1557	455	3	119	77.39%	2.54%	22.61%	97.46%
2010	6276	469	22	209	93.05%	9.38%	6.95%	90.62%

Bratislava Stock Exchange represents the country's exchange of Slovakia.

In 2006, the total 'Number of Trades' in EOB transaction is around 20,575 where for Off-EOB is 1,448 approximately. The difference between 'Number of Trades' of EOB and Off- EOB transaction is about 19,099, which is prominently significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off-EOB) is 93.42% and for Off- EOB it is 6.58%. But different scenario observed in 'Turnover' segment. Despite the higher percentage in 'Number of Trades', EOB transaction in 'Turnover' is lower than the 'Turnover' of Off-EOB transaction. The ratio of 'Turnover' in EOB transaction is 47.65% to the total 'Turnover' in 2006. The 'Turnover' for Off- EOB transaction is 52.35% which is considerably 10% higher than that of EOB transaction.

In the next four consecutive years from 07-2010, the EOB transaction in total 'Number of Trades' has been 81.97%, 80.87%, 77.39% and 93.05% respectively, and higher than that of Off- EOB transaction. On the other hand, from 2008-2010 the 'Turnover' in Off-EOB transaction relatively been higher than that of Off- EOB transaction by 171%, 3732% and 866% respectively.

The relative fluctuation between EOB and Off- EOB transaction, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 11 & 12.

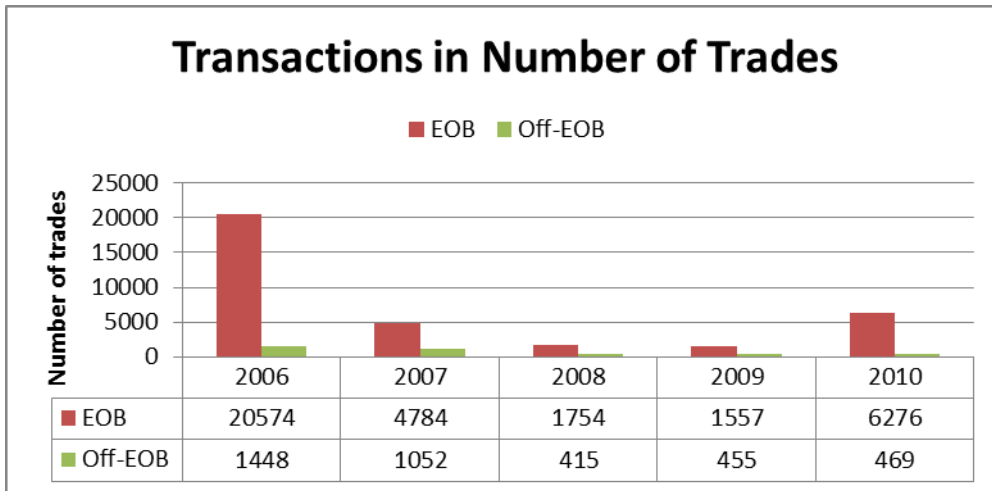


Figure 11. The 'Number of Trades'-pattern in EOB and Off-EOB transaction in Bratislava Stock Exchange from 2006-2010 (FESE, 2006-2010)

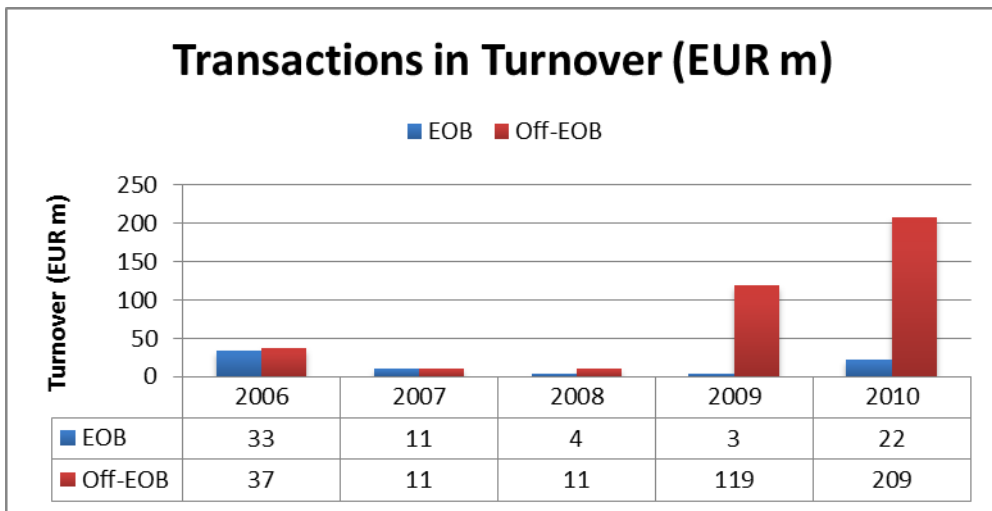


Figure 12. The 'Turnover'-pattern in EOB and Off-EOB transaction in Bratislava Stock Exchange from 2006-2010 (FESE, 2006-2010)

Appendix 5: Bucharest Stock Exchange

Table 17. Annual figure (2006-2010) of Bucharest Stock Exchange from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Bucharest Stock Exchange from 2006-2010 (FESE, 2006-2010)

Bucharest Stock Exchange	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	601499	193	1163.9	105.1	99.97%	91.72%	0.03%	8.28%
2007	734346	194	1682.9	307.1	99.97%	84.57%	0.03%	15.43%
2008	800811	77	966	84.6	99.99%	91.95%	0.01%	8.05%
2009	803639	96	563.9	76.2	99.99%	88.10%	0.01%	11.90%
2010	515800	140	542.3	161.6	99.97%	77.04%	0.03%	22.96%

The Bucharest Stock Exchange is a stock exchange in Bucharest, capital of Romania. In 2006, the total 'Number of Trades' in EOB transaction is around 0.6 million where for Off-EOB is 0.000193 million approximately. The difference between 'Number of Trades' of EOB and Off- EOB transaction is about 0.01 million which is prominently significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off- EOB) is 99.97% and for Off- EOB it is 0.03% only. Similar scenario, EOB transaction is higher than that of Off-EOB is apparent in 'Turnover' segment. The ratio of 'Turnover' in EOB transaction is 91.72% to the total 'Turnover' in 2006. The 'Turnover' for Off- EOB transaction is 8.28% which is significantly 82% lower than that of EOB transaction.

In the next four consecutive years from 2007-2010, the EOB transaction in total 'Number of Trades' has been 99.97%, 99.99%, 99.99% and 99.97% respectively, and higher than that of Off- EOB transaction. Moreover, from 2006-2010 the 'Turnover' in EOB transaction as well has relatively been higher than that of Off- EOB transaction.

The relative fluctuation between EOB and Off- EOB transaction, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 13 & 14.

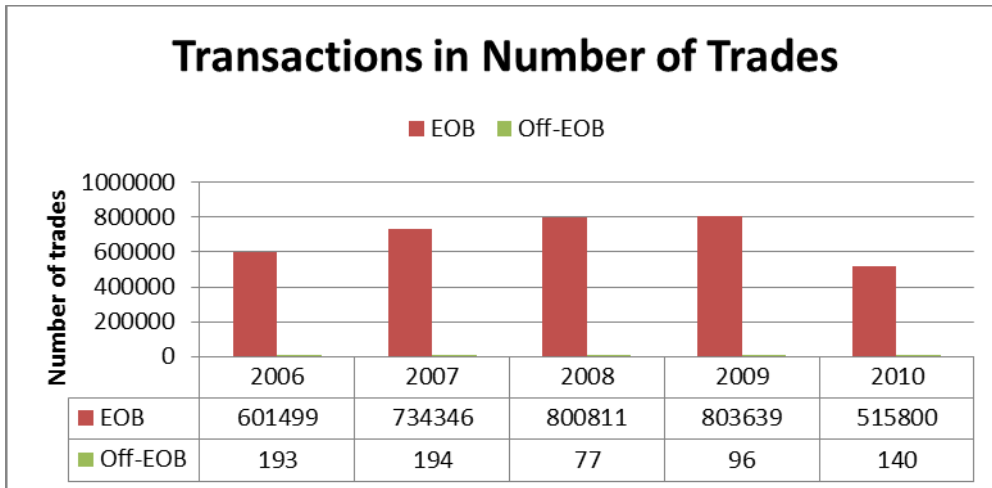


Figure 13. The 'Number of Trades'-pattern in EOB and Off-EOB transaction in Bucharest Stock Exchange from 2006-2010 (FESE, 2006-2010)

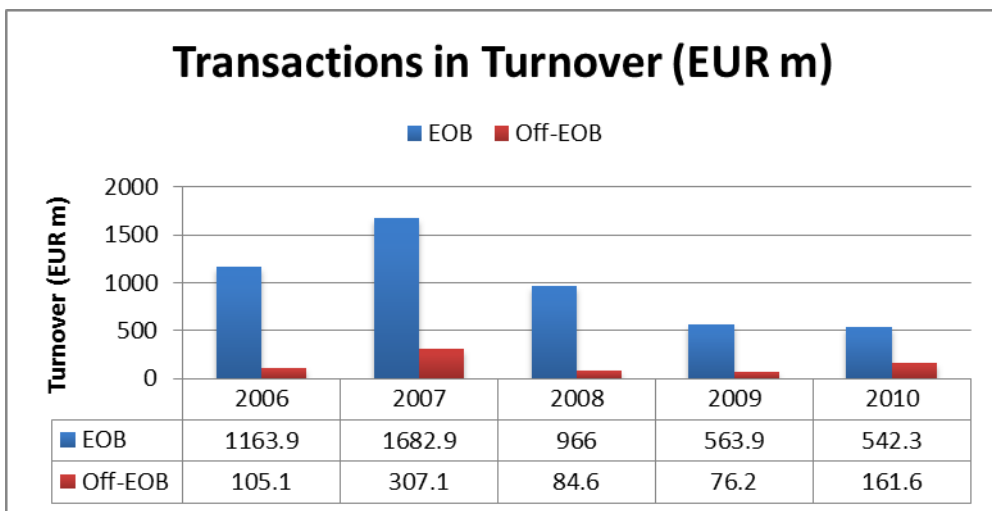


Figure 14. The 'Turnover'-pattern in EOB and Off-EOB transaction in Bucharest Stock Exchange from 2006-2010 (FESE, 2006-2010)

Appendix 6: Budapest Stock Exchange

Table 18. Annual figure (2006-2010) of Bucharest Stock Exchange from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Budapest Stock Exchange from 2006-2010 (FESE, 2006-2010)

Budapest Stock Exchange	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
Year								
2006	1464580	333	22524.6	2100.9	99.98%	91.47%	0.02%	8.53%
2007	1629278	95	34403.2	207.1	99.99%	99.40%	0.01%	0.60%
2008	1893044	73	20916.4	47.1	100.00%	99.78%	0.00%	0.22%
2009	3349838	47	18449.1	13.9	100.00%	99.92%	0.00%	0.08%
2010	2612330	135	19925.4	76.5	99.99%	99.62%	0.01%	0.38%

Budapest Stock Exchange is the chief Hungarian Financial market

In 2006, the total 'Number of Trades' in EOB transaction is around 1.46 million where for Off-EOB is 0.000333 million approximately. The difference between 'Number of Trades' of EOB and Off- EOB transaction is about 1.46 million which is prominently significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off- EOB) is 99.98% and for Off- EOB it is 0.02% only. Similar scenario, EOB transaction is higher than that of Off-EOB is apparent in 'Turnover' segment. The ratio of 'Turnover' in EOB transaction is 91.47% to the total 'Turnover' in 2006. The 'Turnover' for Off- EOB transaction is 8.53% which is significantly 91% lower than that of EOB transaction.

In the next four consecutive years from 07-2010, the EOB transaction in total 'Number of Trades' has been almost 100% for each year, and higher than that of Off- EOB transaction. Moreover, from 2006-2010 the 'Turnover' in EOB transaction as well has relatively been higher than that of Off- EOB transaction.

The relative fluctuation between EOB and Off- EOB transaction, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 15 & 16.

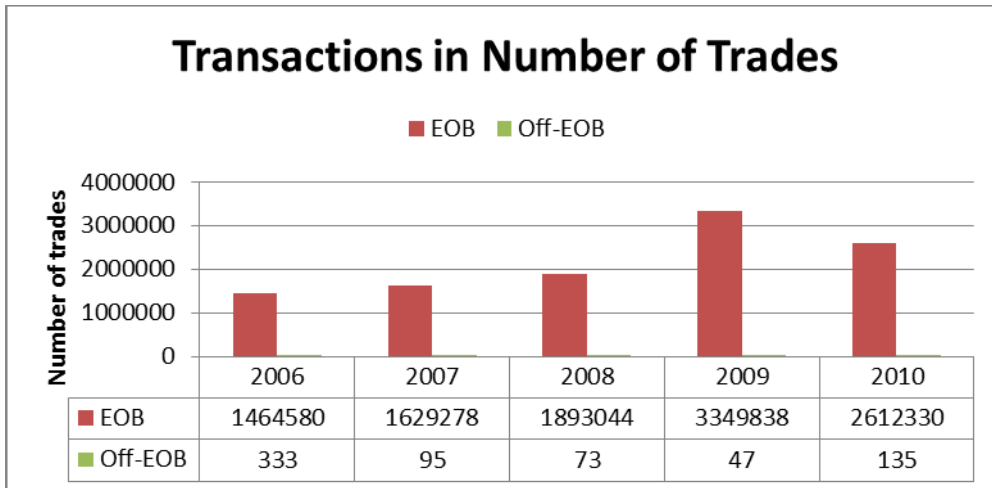


Figure 15. The 'Number of Trades'-pattern in EOB and Off-EOB transaction in Budapest Stock Exchange from 2006-2010 (FESE, 2006-2010)

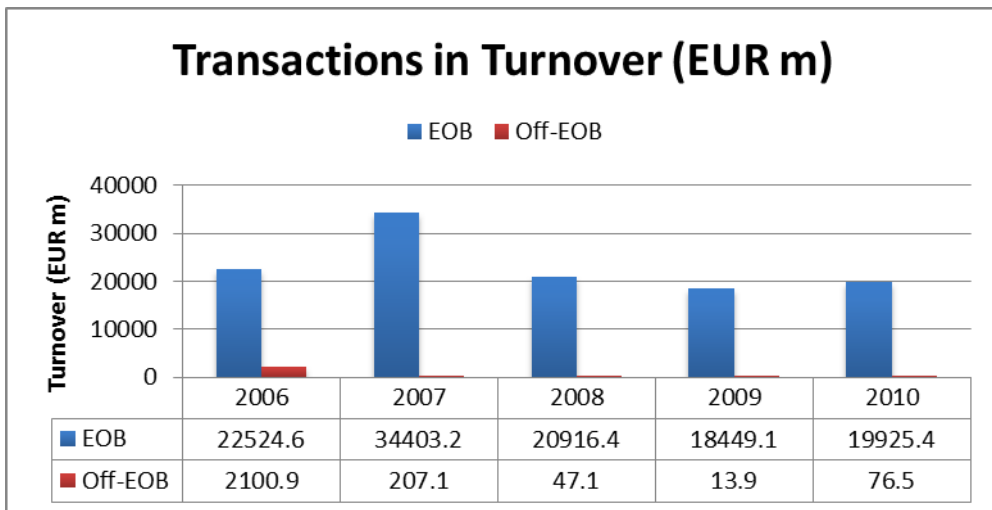


Figure 16. The 'Turnover'-pattern in EOB and Off-EOB transaction in Budapest Stock Exchange from 2006-2010 (FESE, 2006-2010)

Appendix 7: Bulgarian Stock Exchange

Table 19. Annual figure (2006-2010) of Bulgarian Stock Exchange from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Bulgarian Stock Exchange from 2006-2010 (FESE, 2006-2010)

Bulgarian Stock Exchange	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
Year								
2006	187896	298	1169.9	247	99.84%	82.57%	0.16%	17.43%
2007	457221	10952	3983.5	657.2	97.66%	85.84%	2.34%	14.16%
2008	378466	10355	939.2	381.3	97.34%	71.12%	2.66%	28.88%
2009	190518	442	339.5	18	99.77%	94.97%	0.23%	5.03%
2010	103180	0	280.9	0	100.00%	100.00%	0.00%	0.00%

The Bulgarian Stock is a stock exchange operating in Sofia, the capital of Bulgaria.

In 2006, the total 'Number of Trades' in EOB transaction is around 0.19 million where for Off-EOB is 298 only. The difference between 'Number of Trades' of EOB and Off-EOB transaction is about 0.189 million which is prominently significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off-EOB) is 99.84% and for Off-EOB it is 0.16% only. Similar scenario, EOB transaction is higher than that of Off-EOB is apparent in 'Turnover' segment. The ratio of 'Turnover' in EOB transaction is 82.57% to the total 'Turnover' in 2006. The 'Turnover' for Off-EOB transaction is 17.43% which is significantly 79% lower than that of EOB transaction.

In the next four consecutive years from 07-2010, the EOB transaction in total 'Number of Trades' has been 97.66%, 97.34%, 97.34% and 100% relatively, and higher than that of Off-EOB transaction. Moreover, from 2006-2010 the 'Turnover' in EOB transaction as well has relatively been higher than that of Off-EOB transaction. The data of Off-EOB transaction for 2010 is not included in the annual report.

The relative fluctuation between EOB and Off-EOB transaction, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 17 & 18.

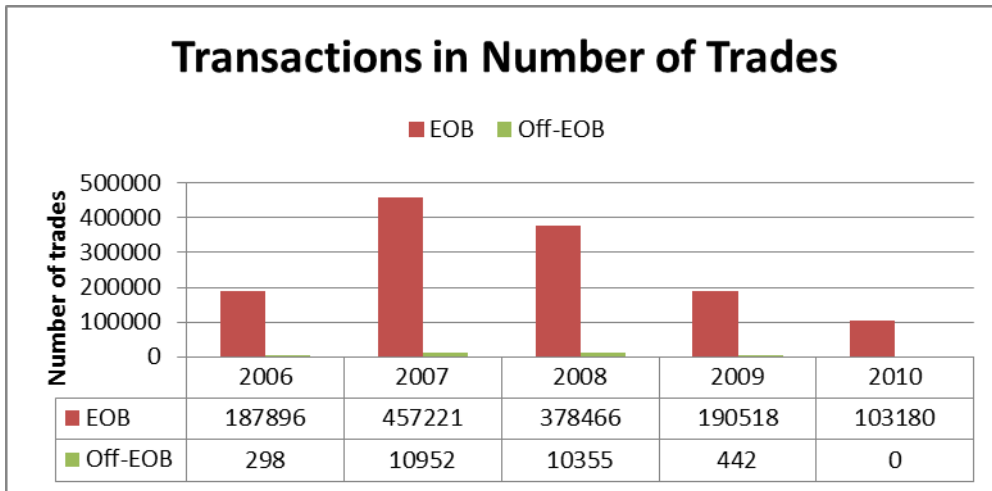


Figure 17. The 'Number of Trades'-pattern in EOB and Off-EOB transaction in Bulgarian Stock Exchange from 2006-2010 (FESE, 2006-2010)

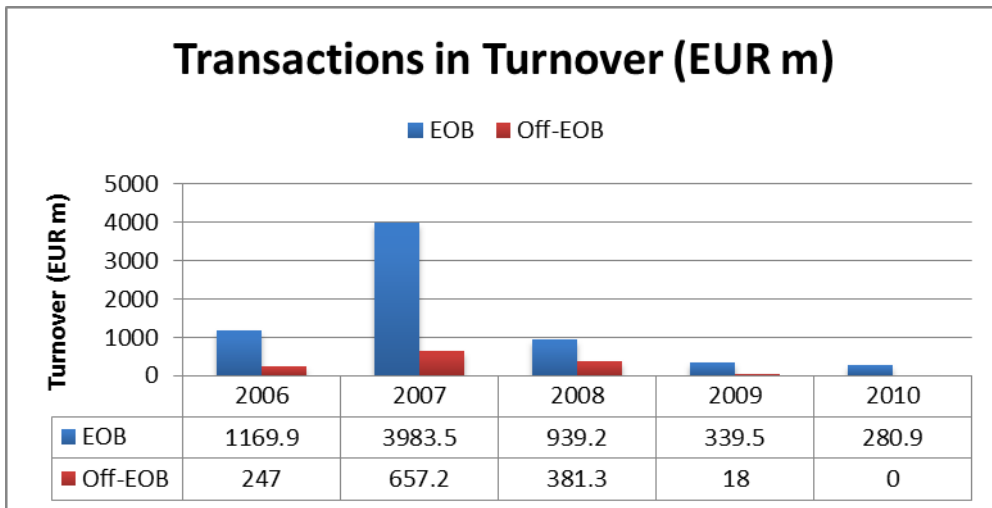


Figure 18. The 'Turnover'-pattern in EOB and Off-EOB transaction in Bulgarian Stock Exchange from 2006-2010 (FESE, 2006-2010)

Appendix 8: Cyprus Stock Exchange

Table 20. Annual figure (2006-2010) of Cyprus Stock Exchange from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Cyprus Stock Exchange from 2006-2010 (FESE, 2006-2010)

Cyprus Stock Exchange	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	533126	42	2811.3	450	99.99%	86.20%	0.01%	13.80%
2007	685603	169	3728.8	290.6	99.98%	92.77%	0.02%	7.23%
2008	414406	144	1373.6	127.5	99.97%	91.51%	0.03%	8.49%
2009	358820	76	1227.6	60.3	99.98%	95.32%	0.02%	4.68%
2010	201817	48	553.5	284.8	99.98%	66.03%	0.02%	33.97%

The Cyprus Stock Exchange is a stock exchange located in Nicosia, Cyprus.

In 2006, the total 'Number of Trades' in EOB transaction is around 0.53 million where for Off-EOB is only 42. The difference between 'Number of Trades' of EOB and Off-EOB transaction is about 0.53 million which is prominently significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off-EOB) is 99.99% and for Off-EOB it is 0.01%. Similar scenario, EOB transaction is higher than that of Off-EOB is apparent in 'Turnover' segment. The ratio of 'Turnover' in EOB transaction is 86.20% to the total 'Turnover' in 2006. The 'Turnover' for Off-EOB transaction is 13.80% which is significantly 84% lower than that of EOB transaction.

In the next four consecutive years from 07-2010, the EOB transaction in total 'Number of Trades' has been 99.98%, 99.97%, 99.98% and 99.98% respectively, and higher than that of Off-EOB transaction. Moreover, from 2006-2010 the 'Turnover' in EOB transaction as well has relatively been higher than that of Off-EOB transaction.

The relative fluctuation between EOB and Off-EOB transaction, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 19 & 20.

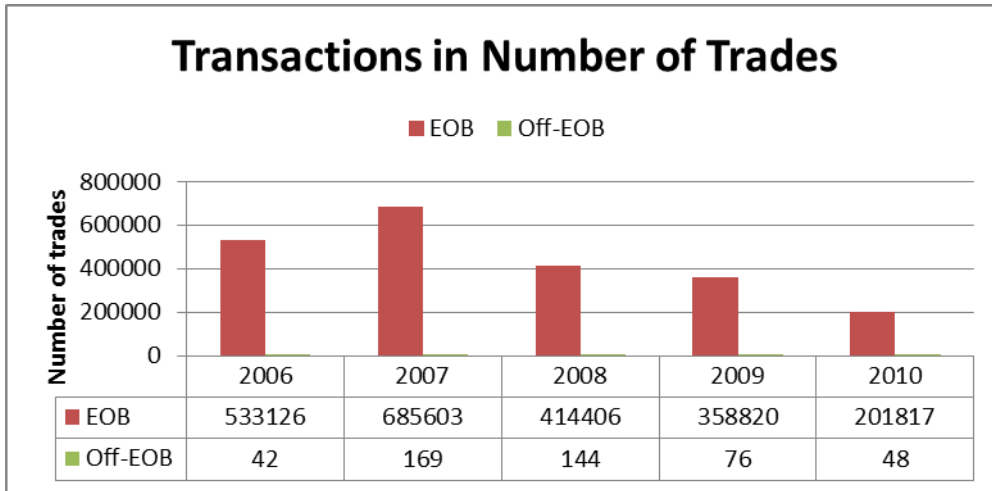


Figure 19. The 'Number of Trades'-pattern in EOB and Off-EOB transaction in Cyprus Stock Exchange from 2006-2010 (FESE, 2006-2010)

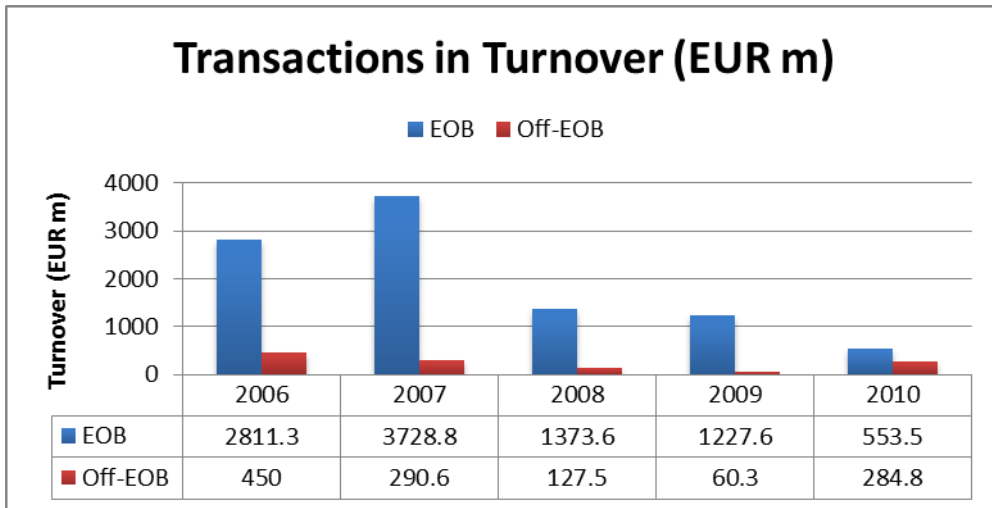


Figure 20. The 'Turnover'-pattern in EOB and Off-EOB transaction in Cyprus Stock Exchange from 2006-2010 (FESE, 2006-2010)

Appendix 9: Deutsche Börse Group

Table 21. Annual figure (2006-2010) of Deutsche Börse Group from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Deutsche Börse Group from 2006-2010 (FESE, 2006-2010)

Deutsche Börse Group	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	53131428	55886764	1592747	572100.2	48.74%	73.57%	51.26%	26.43%
2007	86880744	58138800	2442977	701173.4	59.91%	77.70%	40.09%	22.30%
2008	118036408	23877492	2191909	1031594	83.17%	68.00%	16.83%	32.00%
2009	86868000	14989663	1084238	159182.2	85.28%	87.20%	14.72%	12.80%
2010	99900496	15646501	1236940	188817.9	86.46%	86.76%	13.54%	13.24%

Deutsche Börse Group is a marketplace organizer for the trading of shares and other securities and situated in Frankfurt, Germany.

In 2006, the total 'Number of Trades' in EOB transaction is around 53.13 million where for Off-EOB is 56 million approximately. Clearly, the numeric value of Off-EOB transaction is higher than that of EOB. In percentage the difference is about 2.8 million. The difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off- EOB) is 48.74% and for Off- EOB it is 51.26%. But different scenario observed in 'Turnover' segment. Despite the lower percentage in 'Number of Trades', EOB transaction in 'Turnover' is higher than the 'Turnover' of Off-EOB transaction. The ratio of 'Turnover' in EOB transaction is 73.57 % to the total 'Turnover' in 2006. The 'Turnover' for Off- EOB transaction is 26.43 % which is considerably 64% lower than that of Off-EOB transaction.

In the next four consecutive years from 07-2010, the EOB transaction in total 'Number of Trades' has been 59.91%, 83.17%, 85.28% and 86.46% respectively, and higher than that of Off- EOB transaction. Moreover, from 2006-2010 the 'Turnover' in EOB transaction as well has relatively been higher than that of Off- EOB transaction.

The relative fluctuation between EOB and Off- EOB transaction, in terms of both the total ‘Number of Trades’ and ‘Turnover’, is presented in figure 21 & 22.

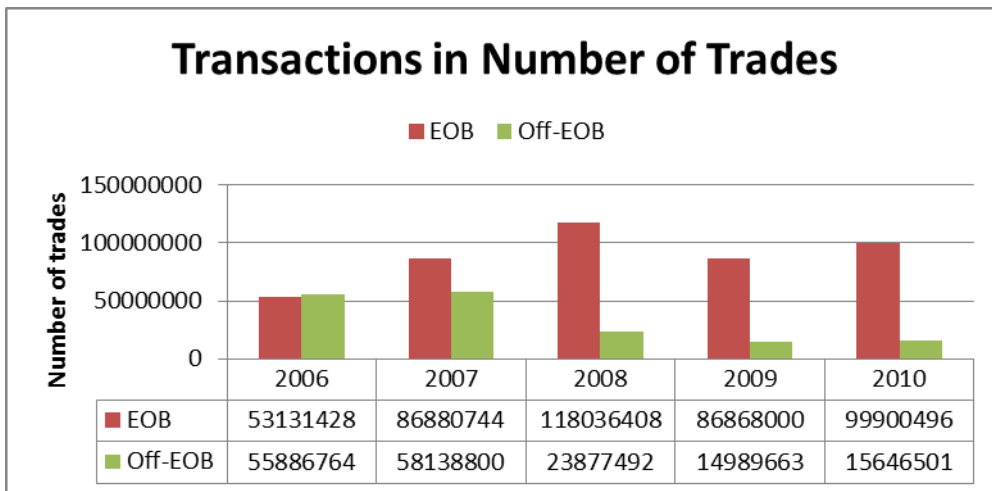


Figure 21. The ‘Number of Trades’-pattern in EOB and Off-EOB transaction in Deutsche Börse Group from 2006-2010 (FESE, 2006-2010)

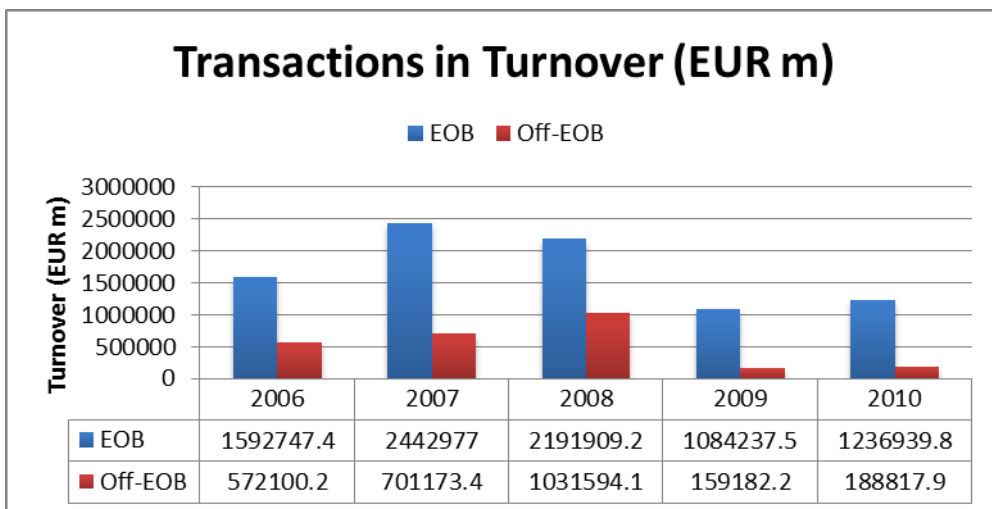


Figure 22. The ‘Turnover’-pattern in EOB and Off-EOB transaction in Deutsche Börse Group from 2006-2010 (FESE, 2006-2010)

Appendix 10: Irish Stock Exchange

Table 22. Annual figure (2006-2010) of The Irish Stock Exchange from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Irish Stock Exchange from 2006-2010 (FESE, 2006-2010)

The Irish Stock Exchange	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	259571	190882	9237.9	55354.7	57.62%	14.30%	42.38%	85.70%
2007	609430	253519	16879.3	82670.9	70.62%	16.96%	29.38%	83.04%
2008	998076	265276	12815.7	43406.3	79.00%	22.79%	21.00%	77.21%
2009	914308	229259	7098.8	19456.6	79.95%	26.73%	20.05%	73.27%
2010	899791	157728	6752	16017.8	85.09%	29.65%	14.91%	70.35%

The Irish Stock Exchange is an Irish private company situated in Ireland.

In 2006, the total 'Number of Trades' in EOB transaction is around 0.23 million where for Off-EOB is 0.19 million approximately. The difference between 'Number of Trades' of EOB and Off- EOB transaction is about 0.04 million, which is agreeably significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off- EOB) is 57.62% and for Off- EOB it is 42.38%. But different scenario observed in 'Turnover' segment. Despite the higher percentage in 'Number of Trades', EOB transaction in 'Turnover' is lower than the 'Turnover' of Off-EOB transaction. The ratio of 'Turnover' in EOB transaction is 14.30% to the total 'Turnover' in 2006. The 'Turnover' for Off- EOB transaction is 85.70% which is surprisingly about 500% higher than that of EOB transaction.

In the next four consecutive years from 07-2010, the EOB transaction in total 'Number of Trades' has been 70.62%, 79%, 79.95% and 85.09% respectively, and higher than that of Off- EOB transaction. On the other hand, from 2007-2010 the 'Turnover' in Off-EOB transaction relatively been higher than that of Off- EOB transaction by 390%, 239%, 174 and 137% respectively.

The relative fluctuation between EOB and Off- EOB transaction, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 23 & 24.

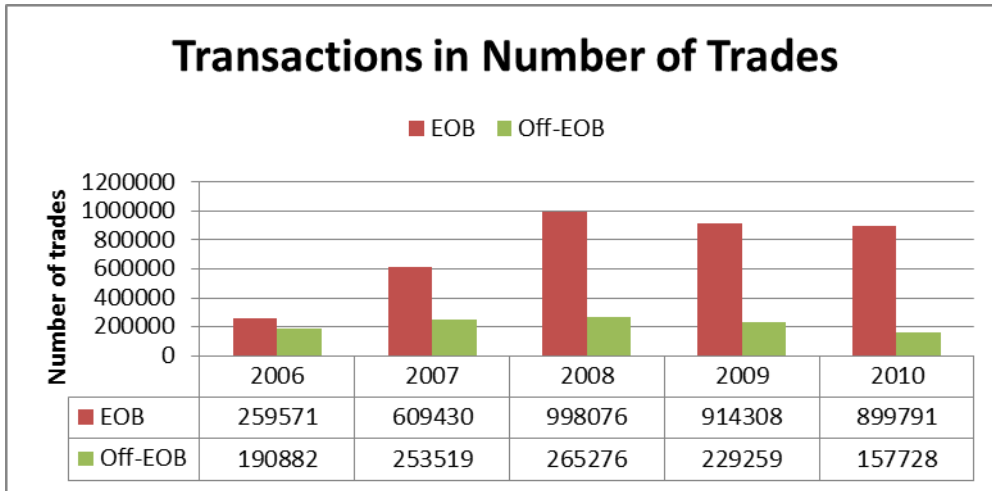


Figure 23. The 'Number of Trades'-pattern in EOB and Off-EOB transaction in The Irish Stock Exchange from 2006-2010 (FESE, 2006-2010)

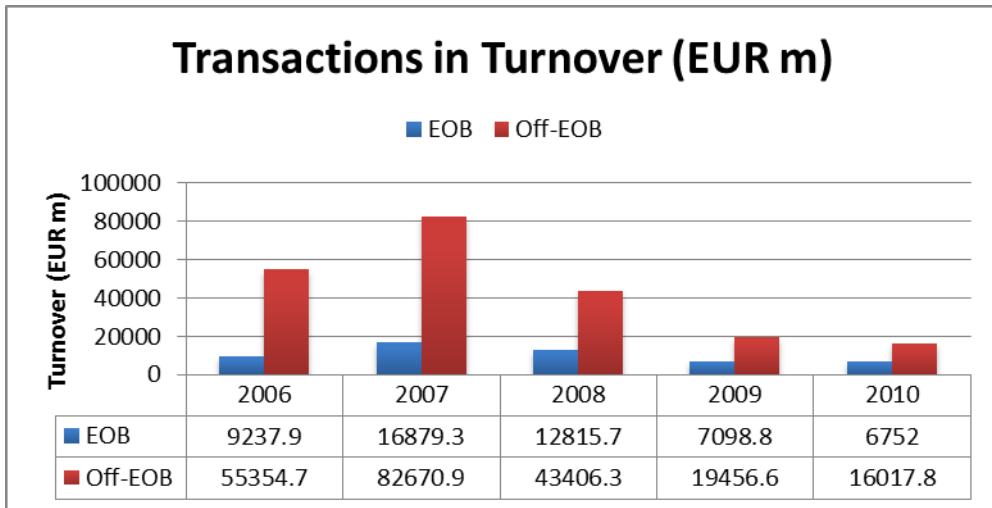


Figure 24. The 'Turnover'-pattern in EOB and Off-EOB transaction in The Irish Stock Exchange from 2006-2010 (FESE, 2006-2010)

Appendix 11: Istanbul Stock Exchange

Table 23. Annual figure (2006-2010) of Istanbul Stock Exchange from FESE reports and annual ratio analysis.*The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Istanbul Stock Exchange from 2006-2010 (FESE, 2006-2010)

Istanbul Stock Exchange	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	0	0	0	0	0.00%	0.00%	0.00%	0.00%
2007	0	0	0	0	0.00%	0.00%	0.00%	0.00%
2008	45616364	7	171854.7	148.8	100.00%	99.91%	0.04%	0.09%
2009	68318528	5	218197	80.4	100.00%	91.03%	0.03%	0.04%
2010	81133552	16	313570.1	308.4	100.00%	99.90%	0.03%	0.10%

The Istanbul Stock Exchange is the only corporation in Turkey for securities exchange established to provide trading in equities.

In 2008, the total 'Number of Trades' in EOB transaction is around 4.6 million where for Off-EOB is only 7. The difference between 'Number of Trades' of EOB and Off-EOB transaction is about 4.6 million which is prominently significant. The significant difference between both is more apprehensible when seen as ratios. In year 2008, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off-EOB) is about 100% and for Off-EOB it is 0.04%. Similar scenario, EOB transaction is higher than that of Off-EOB is apparent in 'Turnover' segment. The ratio of 'Turnover' in EOB transaction is 99.91% to the total 'Turnover' in 2008. The 'Turnover' for Off-EOB transaction is 0.09% which is significantly about 99.82% lower than that of EOB transaction.

In the next two years from 09-2010, the EOB transaction in total 'Number of Trades' has been 100% and 100% respectively, and higher than that of Off-EOB transaction. Moreover, from 2009-2010 the 'Turnover' in EOB transaction as well has relatively been higher than that of Off-EOB transaction.

The relative fluctuation between EOB and Off-EOB transaction, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 25 & 26.

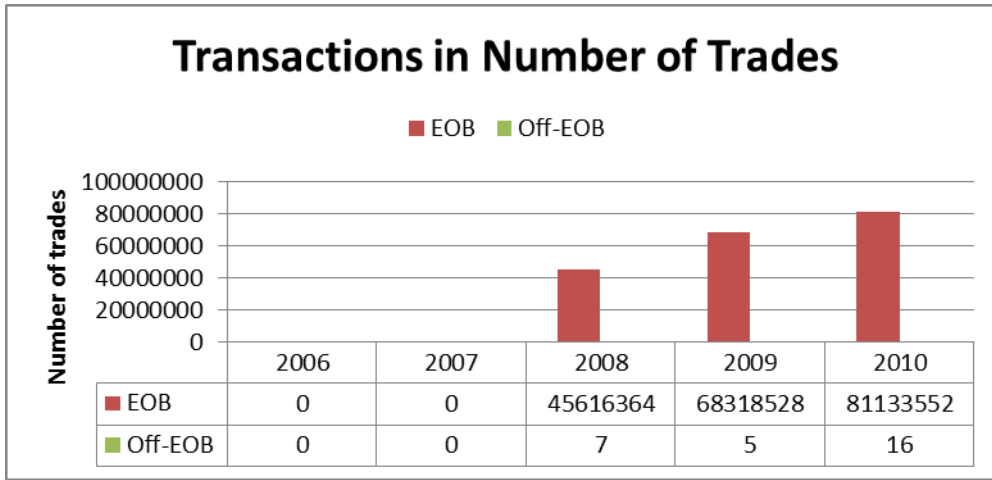


Figure 25. The 'Number of Trades'-pattern in EOB and Off-EOB transaction in The Istanbul Stock Exchange from 2006-2010 (FESE, 2006-2010)

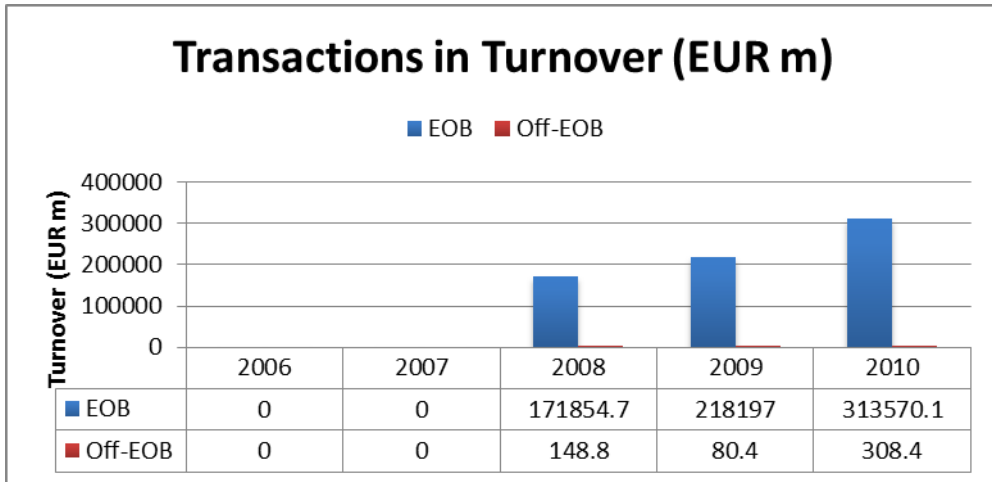


Figure 26. The 'Turnover'-pattern in EOB and Off-EOB transaction in The Istanbul Stock Exchange from 2006-2010 (FESE, 2006-2010)

Appendix 12: Ljubljana Stock Exchange

Table 24. Annual figure (2006-2010) of Ljubljana Stock Exchange from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Ljubljana Stock Exchange from 2006-2010 (FESE, 2006-2010)

Ljubljana Stock Exchange	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	166246	893	801.3	650.2	99.47%	55.20%	0.53%	44.80%
2007	229696	1031	1952	1430.3	99.55%	57.71%	0.45%	42.29%
2008	219382	778	970.6	634	99.65%	60.49%	0.35%	39.51%
2009	135853	0	719.9	0	100.00%	100.00%	0.00%	0.00%
2010	101912	0	360.8	0	100.00%	100.00%	0.00%	0.00%

Ljubljana Stock Exchange is a stock exchange located in Ljubljana, Slovenia.

In 2006, the total 'Number of Trades' in EOB transaction is around 0.16 million where for Off-EOB is 893 only. The difference between 'Number of Trades' of EOB and Off-EOB transaction is about 0.16 million which is prominently significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off-EOB) is 99.47% and for Off-EOB it is 0.53%. Similar scenario, EOB transaction is higher than that of Off-EOB is apparent in 'Turnover' segment. The ratio of 'Turnover' in EOB transaction is 55.2% to the total 'Turnover' in 2006. The 'Turnover' for Off-EOB transaction is 44.80% which is significantly almost 19% lower than that of EOB transaction.

In the next four consecutive years from 07-2010, the EOB transaction in total 'Number of Trades' has been 99.55%, 99.65%, 100% and 100% respectively, and higher than that of Off-EOB transaction. Moreover, from 2006-2010 the 'Turnover' in EOB transaction as well has relatively been higher than that of Off-EOB transaction. The Off-EOB transaction data for year 2009 and 2010 is not included in FESE reports.

The relative fluctuation between EOB and Off-EOB transaction, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 27 & 28.

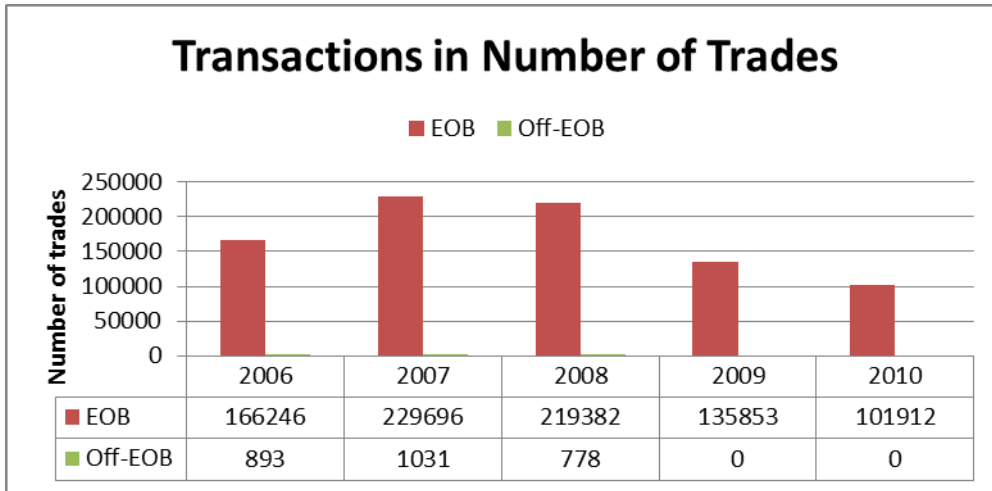


Figure 27. The 'Number of Trades'-pattern in EOB and Off-EOB transaction in Ljubljana Stock Exchange from 2006-2010 (FESE, 2006-2010)

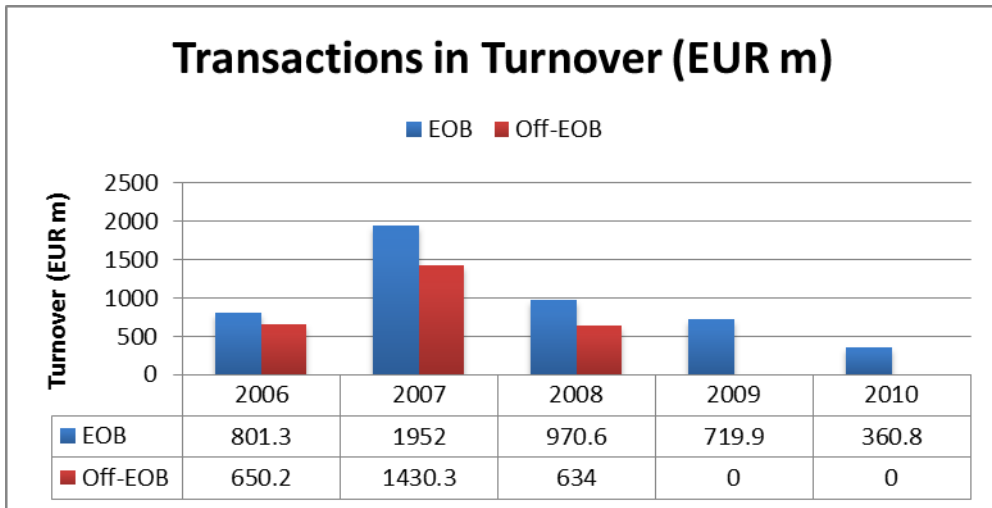


Figure 28. The 'Turnover'-pattern in EOB and Off-EOB transaction in Ljubljana Stock Exchange from 2006-2010 (FESE, 2006-2010)

Appendix 13: London Stock Exchange

Table 25. Annual figure (2006-2010) of London Stock Exchange from FESE reports and annual ratio analysis.*The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of London Stock Exchange from 2006-2010 (FESE, 2006-2010)

London Stock Exchange	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	78246360	16553175	2215963	3774529	82.54%	36.99%	17.46%	63.01%
2007	138833632	22155996	3133478.5	4411492	86.24%	41.53%	13.76%	58.47%
2008	194313088	7465809	2601411	1760787	96.30%	59.64%	3.70%	40.36%
2009	156441568	9564100	1270019.9	977054.6	94.24%	56.52%	5.76%	43.48%
2010	0	0	0	0	0.00%	0.00%	0.00%	0.00%

The London Stock Exchange is located in the City of London in the United Kingdom.

In 2006, the total 'Number of Trades' in EOB transaction is around 78.25 million where for Off-EOB is 16.55 million approximately. The difference between 'Number of Trades' of EOB and Off- EOB transaction is about 61.70 million, which is conspicuously significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off- EOB) is 82.54% and for Off- EOB it is 17.46%. But different scenario observed in 'Turnover' segment. Despite the higher percentage in 'Number of Trades', EOB transaction in 'Turnover' is lower than the 'Turnover' of Off-EOB transaction. The ratio of 'Turnover' in EOB transaction is 36.99% to the total 'Turnover' in 2006. The 'Turnover' for Off- EOB transaction is 63.01% which is surprisingly about 70% higher than that of EOB transaction.

In the next three consecutive years from 07-2009, the EOB transaction in total 'Number of Trades' has been 86.24%, 96.30%, and 94.24% respectively, and higher than that of Off- EOB transaction. On the other hand, in 2007 the 'Turnover' in EOB transaction has been relatively lower than that of Off- EOB transaction by 41%. Then, again in 2008 and 2009 the 'Turnover' in EOB transaction is higher than that of Off-EOB transaction. The data for 2010 is not presented in FESE report.

The relative fluctuation between EOB and Off- EOB transaction, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 29 & 30.

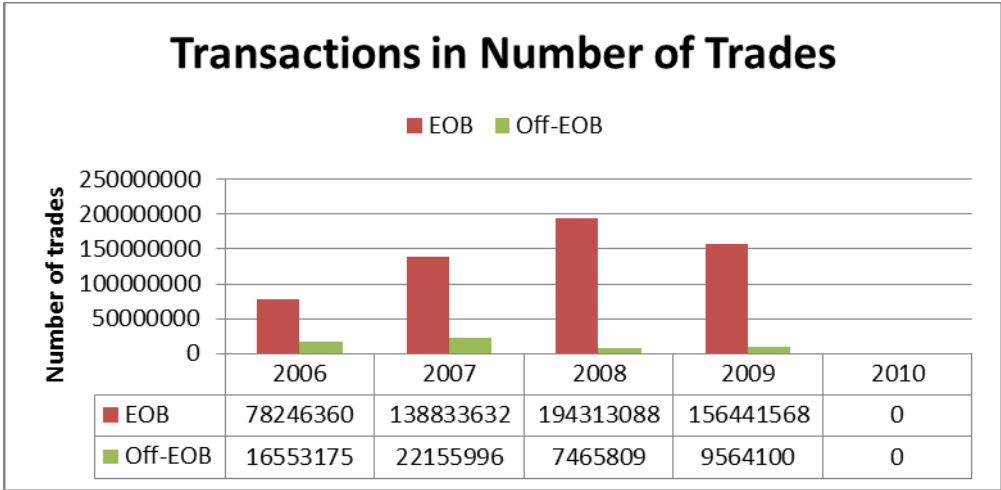


Figure 29. The 'Number of Trades'-pattern in EOB and Off-EOB transaction in London Stock Exchange from 2006-2010 (FESE, 2006-2010)

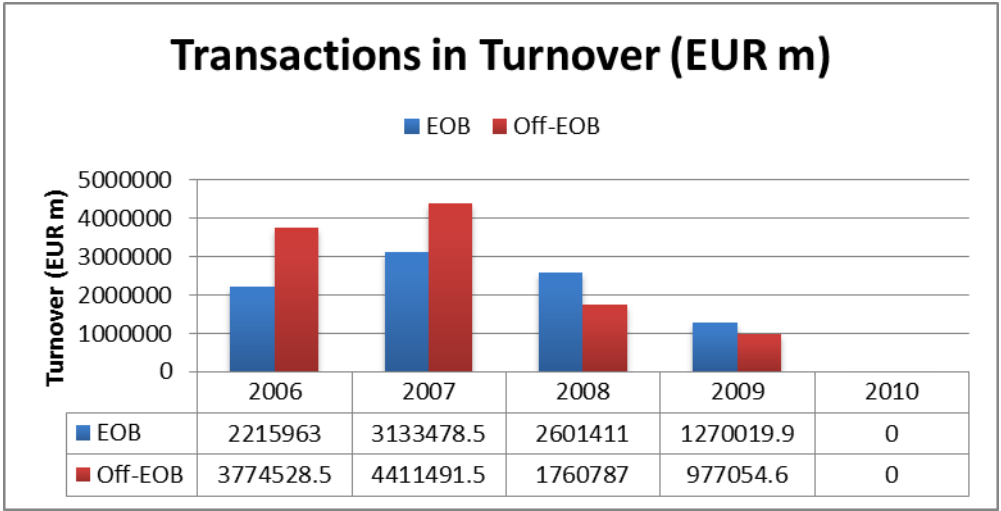


Figure 30. The 'Turnover'-pattern in EOB and Off-EOB transaction in London Stock Exchange from 2006-2010 (FESE, 2006-2010)

Appendix 14: Luxembourg Stock Exchange

Table 26. Annual figure (2006-2010) of Luxembourg Stock Exchange from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Luxembourg Stock Exchange from 2006-2010 (FESE, 2006-2010)

Luxembourg Stock Exchange	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	14558	0	187.1	0	100.00%	100.00%	0.00%	0.00%
2007	14642	0	175.7	0	100.00%	100.00%	0.00%	0.00%
2008	23094	0	1311	0	100.00%	100.00%	0.00%	0.00%
2009	14312	0	213.8	0	100.00%	100.00%	0.00%	0.00%
2010	11890	0	163.1	0	100.00%	100.00%	0.00%	0.00%

The Luxembourg Stock Exchange is based in Luxembourg City, in southern Luxembourg.

Luxembourg Stock Exchange only represents the data of EOB transaction in the annual reports from 2006-2010 in FESE exchange reports.

The EOB transaction data, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 31 & 32.

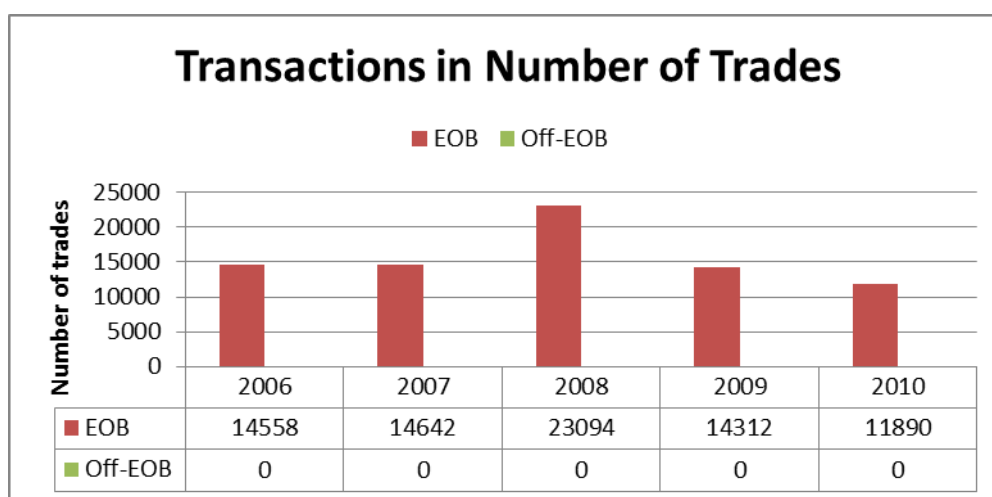


Figure 31. The 'Number of Trades'-pattern in EOB transaction in Luxembourg Stock Exchange from 2006-2010 (FESE, 2006-2010)

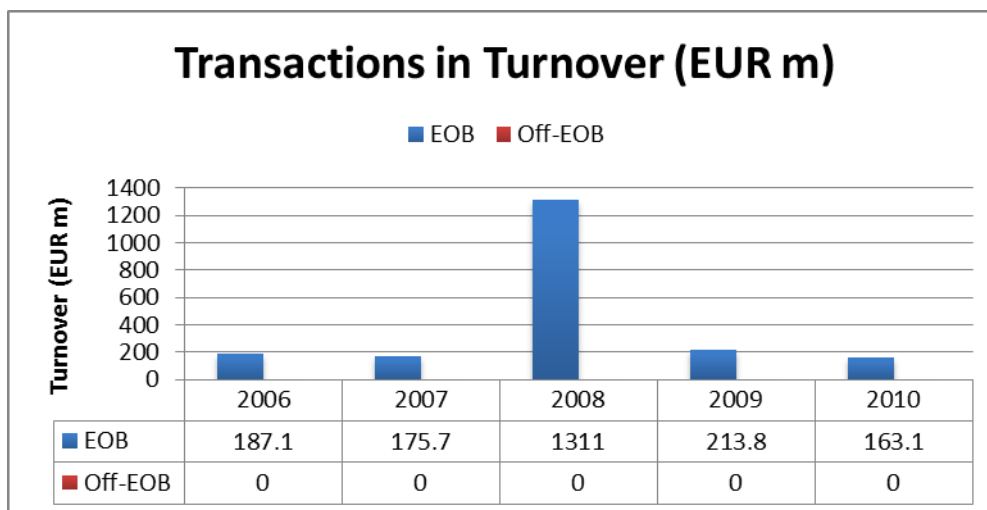


Figure 32. The 'Turnover'-pattern in EOB transaction in Luxembourg Stock Exchange from 2006-2010 (FESE, 2006-2010)

Appendix 15: Malta Stock Exchange

Table 27. Annual figure (2006-2010) of Malta Stock Exchange from FESE reports and annual ratio analysis.*The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Malta Stock Exchange from 2006-2010 (FESE, 2006-2010)

Malta Stock Exchange	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	30371	0	205.1	0	100.00%	100.00%	0.00%	0.00%
2007	10149	0	64.7	0	100.00%	100.00%	0.00%	0.00%
2008	8656	0	48.9	0	100.00%	100.00%	0.00%	0.00%
2009	6811	0	25.4	0	100.00%	100.00%	0.00%	0.00%
2010	8767	0	36.2	0	100.00%	100.00%	0.00%	0.00%

The Malta Stock Exchange is a stock exchange based in Malta's capital, Valletta.

Malta Stock Exchange only represents the data of EOB transaction in the annual reports from 2006-2010 in FESE exchange reports.

The EOB transaction data, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 33 & 34.

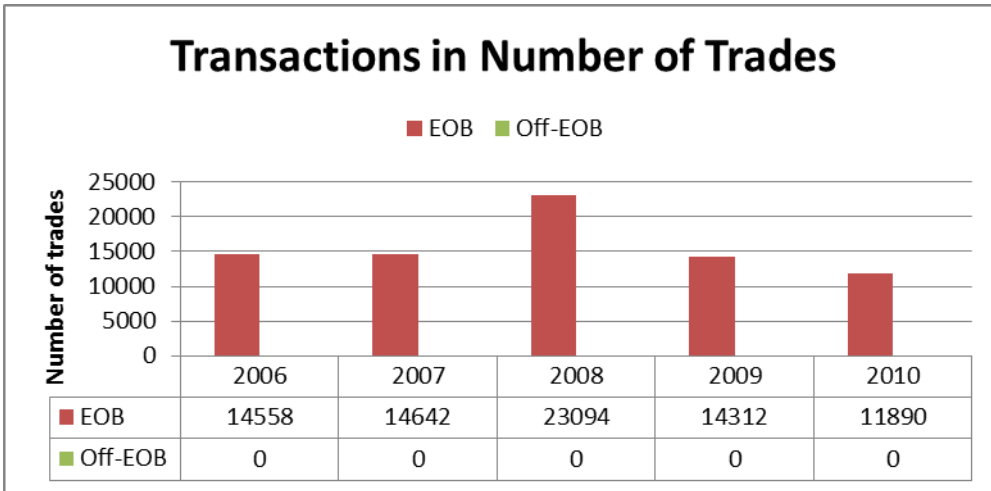


Figure 33. The 'Number of Trades'-pattern in EOB transaction in Malta Stock Exchange from 2006-2010 (FESE, 2006-2010)

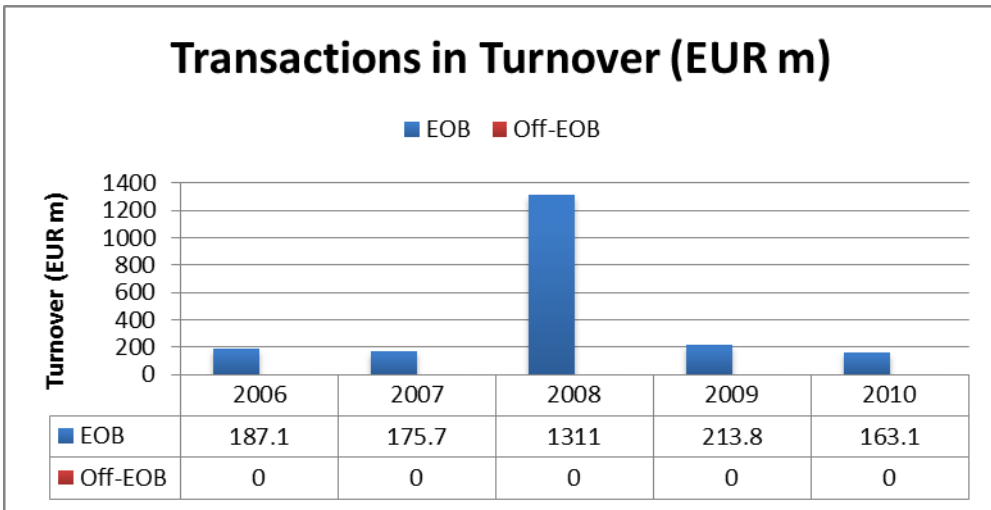


Figure 34. The 'Turnover'-pattern in EOB transaction in Malta Stock Exchange from 2006-2010 (FESE, 2006-2010)

Appendix 16: NYSE Euronext

Table 28. Annual figure (2006-2010) of NYSE Euronext from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of NYSE Euronext from 2006-2010 (FESE, 2006-2010)

NYSE Euronext	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	104521792	723890	2375475	672112	99.31%	77.95%	0.69%	22.05%
2007	153977344	758982	3289384	797427	99.51%	80.49%	0.49%	19.51%
2008	191045696	784308	2606171	466345	99.59%	84.82%	0.41%	15.18%
2009	167127648	465530	1382736.2	123445	99.72%	91.80%	0.28%	8.20%
2010	180371472	845539	1532631	129320	99.53%	92.22%	0.47%	7.78%

NYSE Euronext, Inc. is a Euro-American multinational financial services corporation that operates multiple securities exchanges. In Europe, NYSE Euronext incorporates: Euronext Amsterdam, Euronext Brussels, Euronext Lisbon, Euronext Paris and Euronext.liffe.

In 2006, the total 'Number of Trades' in EOB transaction is around 105million where for Off-EOB is 0.72 million approximately. The difference between 'Number of Trades' of EOB and Off- EOB transaction is about 104 million which is prominently significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off- EOB) is 99.31% and for Off- EOB it is 0.69%. Similar scenario, EOB transaction is higher than that of Off-EOB, is apparent in 'Turnover' segment. The ratio of 'Turnover' in EOB transaction is 77.95% to the total 'Turnover' in 2006. The 'Turnover' for Off- EOB transaction is 22.05% which is significantly about 72% lower than that of EOB transaction.

In the next four consecutive years from 07-2010, the EOB transaction in total 'Number of Trades' has been 99.51%, 99.59%, 99.72% and 99.53% respectively, and higher than that of Off- EOB transaction. Moreover, from 2007-2010 the 'Turnover' in EOB transaction as well has relatively been higher than that of Off- EOB transaction.

The relative fluctuation between EOB and Off- EOB transaction, in terms of both the total ‘Number of Trades’ and ‘Turnover’, is presented in figure 35 & 36.

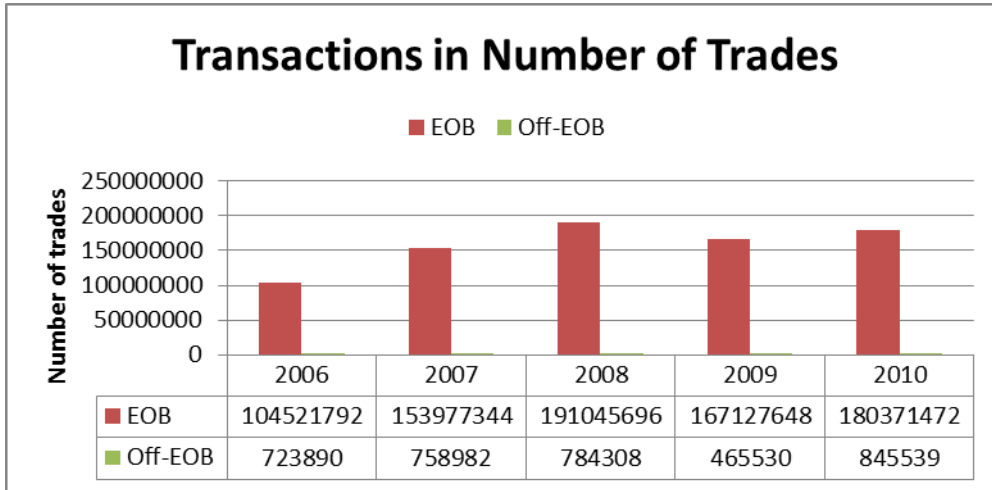


Figure 35. The ‘Number of Trades’-pattern in EOB and Off-EOB transaction in NYSE Euronext from 2006-2010 (FESE, 2006-2010)

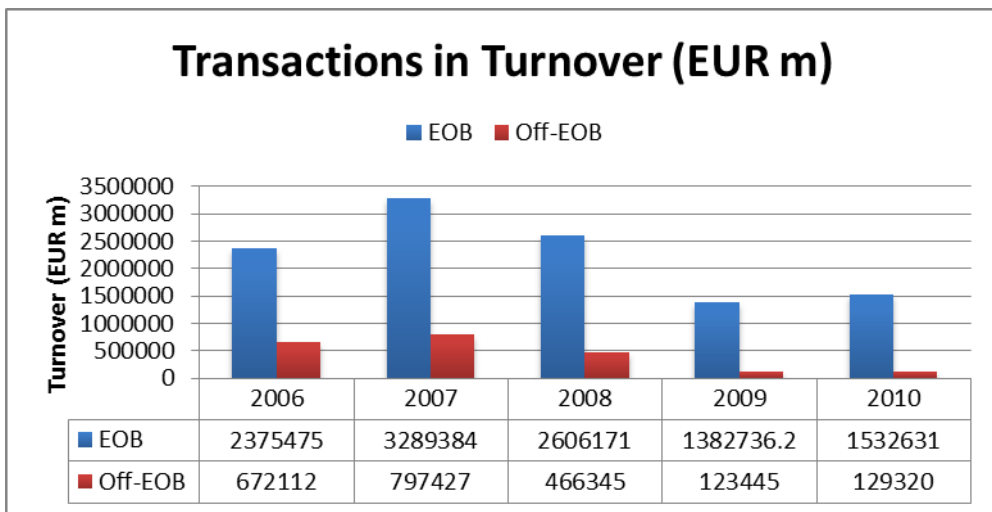


Figure 36. The ‘Turnover’-pattern in EOB and Off-EOB transaction in NYSE Euronext from 2006-2010 (FESE, 2006-2010)

Appendix 17: NASDAQ OMX Nordic

Table 29. Annual figure (2006-2010) of NASDAQ OMX from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' NASDAQ OMX Nordic FESE from 2006-2010 (FESE, 2006-2010)

NASDAQ OMX	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	29690560	1984781	775659.1	261302.6	93.73%	74.80%	6.27%	25.20%
2007	46087736	2417672	1036515.8	285290.8	95.02%	78.42%	4.98%	21.58%
2008	53354888	2188376	818367.6	100070.8	96.06%	89.10%	3.94%	10.90%
2009	51159892	999794	498984.6	43384.5	98.08%	92.00%	1.92%	8.00%
2010	68799152	729710	568050.4	44656	98.95%	92.71%	1.05%	7.29%

The NASDAQ OMX Nordic is a joint stock company and represents four stock exchanges that are NASDAQ OMX Nordic – Copenhagen, NASDAQ OMX Nordic – Helsinki, NASDAQ OMX Nordic – Iceland, NASDAQ OMX Nordic – Stockholm and NASDAQ OMX Nordic – Vilnius.

In 2006, the total 'Number of Trades' in EOB transaction is around 30 million where for Off-EOB is 2 million approximately. The difference between 'Number of Trades' of EOB and Off-EOB transaction is about 28 million which is prominently significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off-EOB) is 99.73% and for Off-EOB it is 6.27%. Similar scenario, EOB transaction is higher than that of Off-EOB is apparent in 'Turnover' segment. The ratio of 'Turnover' in EOB transaction is 74.80% to the total 'Turnover' in 2006. The 'Turnover' for Off-EOB transaction is 25.20% which is significantly about 66% lower than that of EOB transaction.

In the next four consecutive years from 07-2010, the EOB transaction in total 'Number of Trades' has been 95.02%, 96.06%, 98.08% and 98.95% respectively, and higher than that of Off-EOB transaction. Moreover, from 2007-2010 the 'Turnover' in EOB transaction as well has relatively been higher than that of Off-EOB transaction.

The relative fluctuation between EOB and Off- EOB transaction, in terms of both the total ‘Number of Trades’ and ‘Turnover’, is presented in figure 37 & 38.

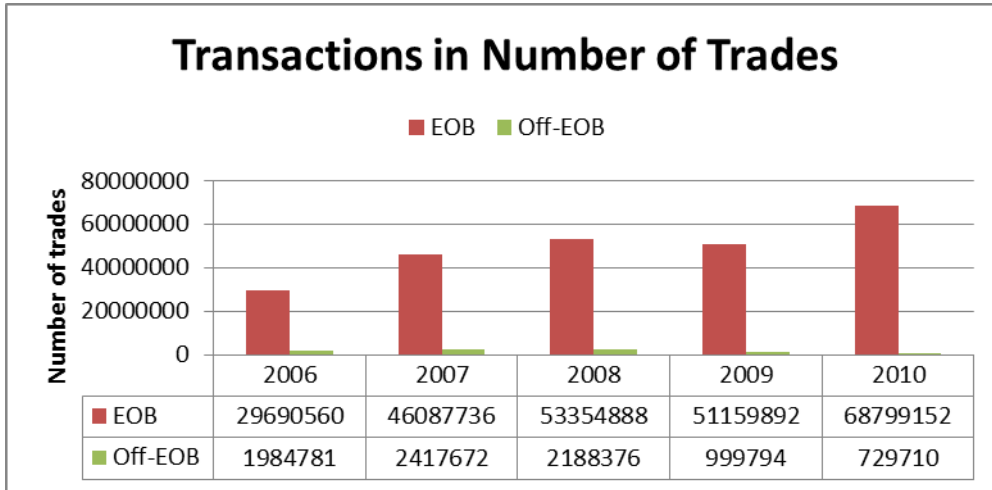


Figure 37. The ‘Number of Trades’-pattern in EOB and Off-EOB transaction in NASDAQ OMX from 2006-2010 (FESE, 2006-2010)

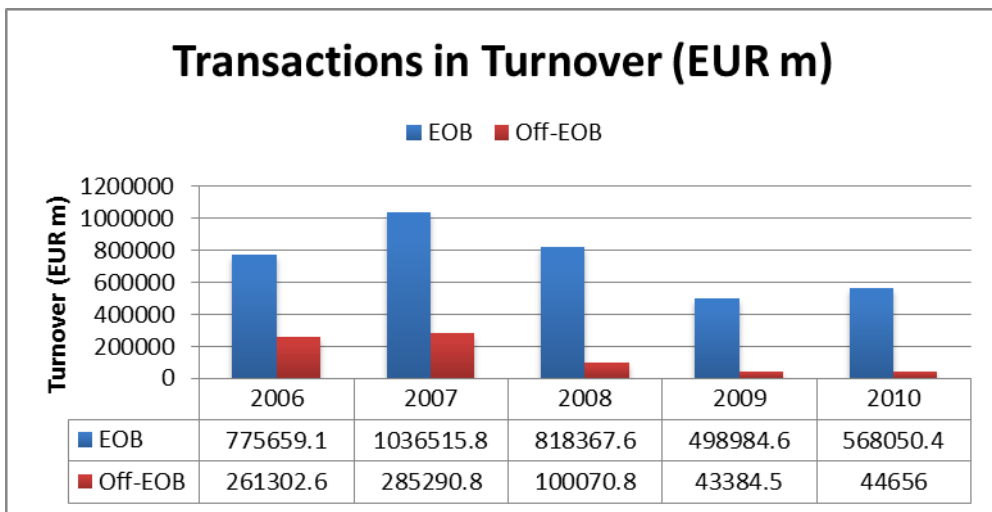


Figure 38. The ‘Turnover’-pattern in EOB and Off-EOB transaction in NASDAQ OMX from 2006-2010 (FESE, 2006-2010)

Appendix 18: Oslo Stock Exchange

Table 30. Annual figure (2006-2010) of Oslo Børs from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Oslo Stock Exchange from 2006-2010 (FESE, 2006-2010)

Oslo Børs	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	8663262	163235	253766.6	67204.9	98.15%	79.06%	1.85%	20.94%
2007	11916739	191831	320886.7	78167.1	98.42%	80.41%	1.58%	19.59%
2008	16872192	77057	275916.1	32251.6	99.55%	89.53%	0.45%	10.47%
2009	15780814	48106	163642.8	12139.5	99.70%	93.09%	0.30%	6.91%
2010	18735452	53082	198753	18448.7	99.72%	91.51%	0.28%	8.49%

The Oslo Stock Exchange (Norwegian: Oslo Børs) is the main securities exchange market in Norway.

In 2006, the total 'Number of Trades' in EOB transaction is around 8.66 million where for Off-EOB is 0.16 million approximately. The difference between 'Number of Trades' of EOB and Off-EOB transaction is about 8.5 million which is prominently significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off-EOB) is 98.15% and for Off-EOB it is 1.85%. Similar scenario, EOB transaction is higher than that of Off-EOB is apparent in 'Turnover' segment. The ratio of 'Turnover' in EOB transaction is 79.06% to the total 'Turnover' in 2006. The 'Turnover' for Off-EOB transaction is 20.94% which is significantly about 74% lower than that of EOB transaction.

In the next four consecutive years from 07-2010, the EOB transaction in total 'Number of Trades' has been 98.42%, 99.55%, 99.70% and 99.72% respectively, and higher than that of Off-EOB transaction. Moreover, from 2007-2010 the 'Turnover' in EOB transaction as well has relatively been higher than that of Off-EOB transaction.

The relative fluctuation between EOB and Off-EOB transaction, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 39 & 40.

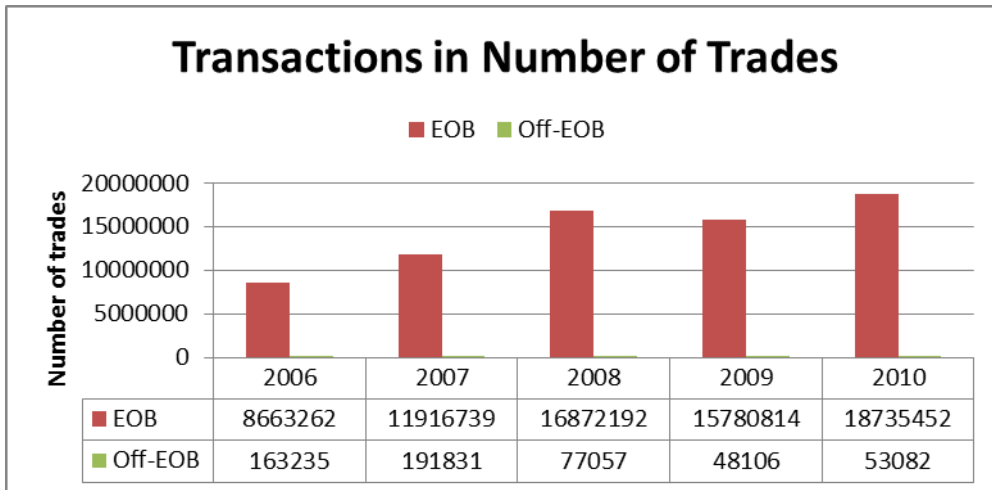


Figure 39. The 'Number of Trades'-pattern in EOB and Off-EOB transaction in Oslo Børs from 2006-2010 (FESE, 2006-2010)

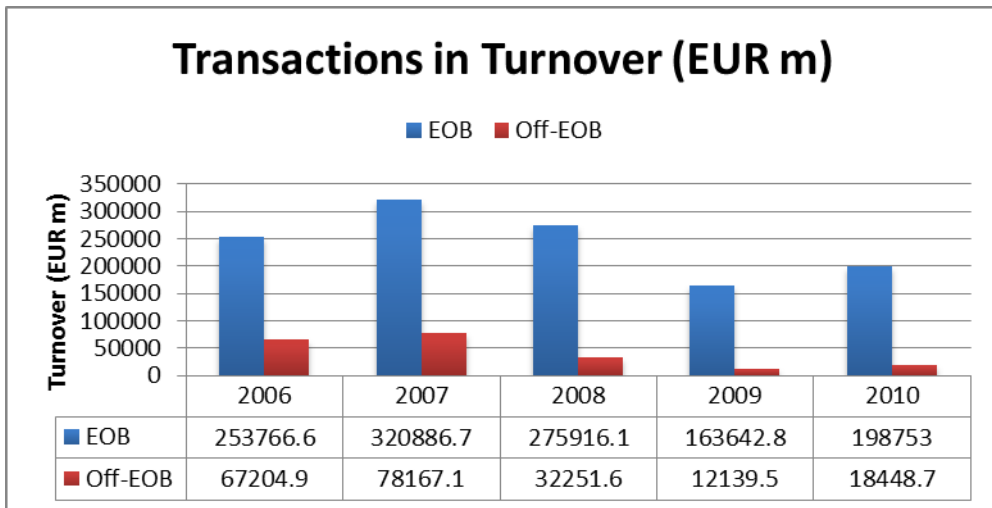


Figure 40. The 'Turnover'-pattern in EOB and Off-EOB transaction in Oslo Børs from 2006 (FESE, 2006-2010)

Appendix 19: Prague Stock Exchange

Table 31. Annual figure (2006-2010) of Prague Stock Exchange from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Prague Stock Exchange from 2006-2010 (FESE, 2006-2010)

Prague Stock Exchange	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	567893	3138	28360.7	1654.7	99.45%	94.49%	0.55%	5.51%
2007	670873	765	35953.8	627.6	99.89%	98.28%	0.11%	1.72%
2008	1395871	315	33764	414.6	99.98%	98.79%	0.02%	1.21%
2009	1571640	127	17471.9	92.6	99.99%	99.47%	0.01%	0.53%
2010	1162508	135	15258.2	132.8	99.99%	99.14%	0.01%	0.86%

The Prague Stock Exchange main securities exchange in Czech Republic.

In 2006, the total 'Number of Trades' in EOB transaction is around 0.567 million where for Off-EOB is 0.003 million approximately. The difference between 'Number of Trades' of EOB and Off- EOB transaction is about 0.565 million which is prominently significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off- EOB) is 99.45% and for Off- EOB it is 0.55%. Similar scenario, EOB transaction is higher than that of Off-EOB is apparent in 'Turnover' segment. The ratio of 'Turnover' in EOB transaction is 94.49% to the total 'Turnover' in 2006. The 'Turnover' for Off- EOB transaction is 5.51% which is significantly about 94% lower than that of EOB transaction.

In the next four consecutive years from 07-2010, the EOB transaction in total 'Number of Trades' has been 99.89%, 99.98%, 99.99% and 99.79% respectively, and higher than that of Off- EOB transaction. Moreover, from 2007-2010 the 'Turnover' in EOB transaction as well has relatively been higher than that of Off- EOB transaction.

The relative fluctuation between EOB and Off- EOB transaction, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 41 & 42.

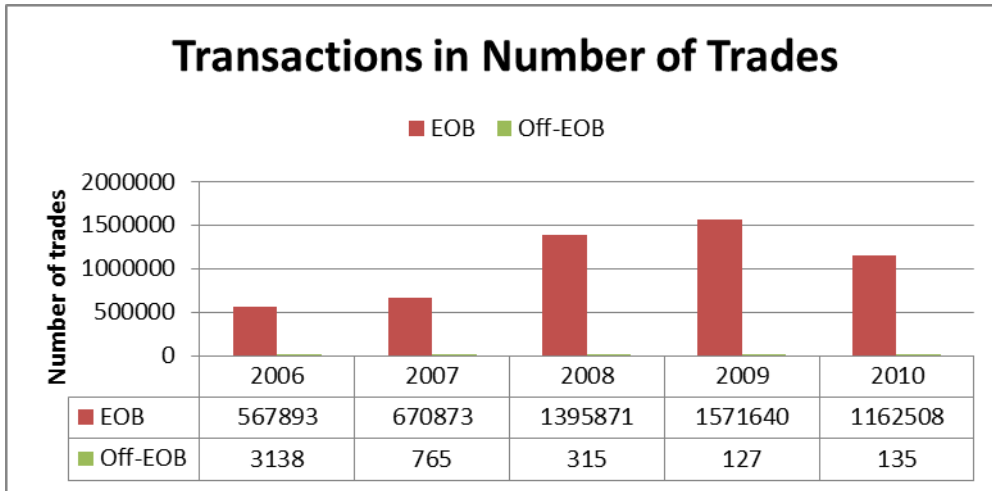


Figure 41. The 'Number of Trades'-pattern in EOB and Off-EOB transaction in Prague Stock Exchange from 2006-2010 (FESE, 2006-2010)

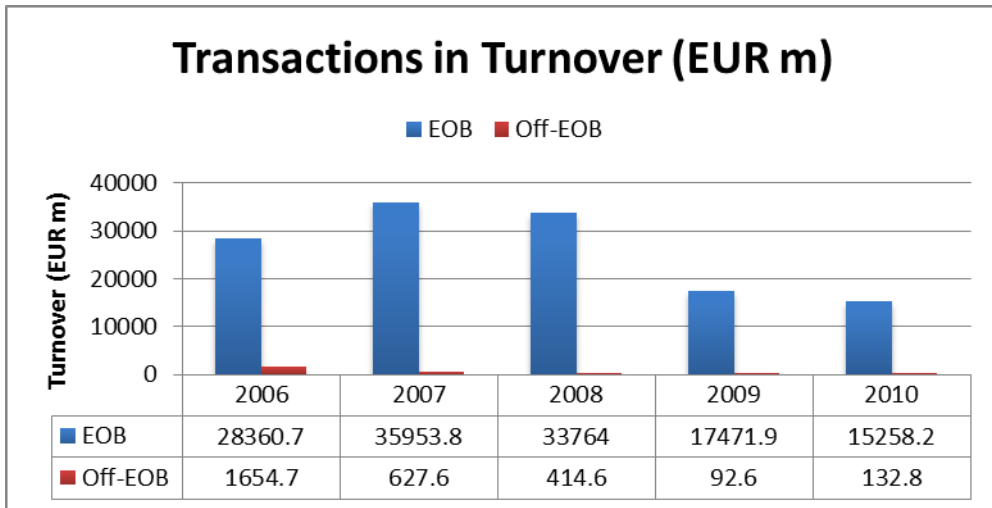


Figure 42. The 'Turnover'-pattern in EOB and Off-EOB transaction in Prague Stock Exchange from 2006-2010 (FESE, 2006-2010)

Appendix 20: SIX Swiss Exchange

Table 32. Annual figure (2006-2010) of SIX Swiss Exchange from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of SIX Swiss Exchange from 2006-2010 (FESE, 2006-2010)

SIX Swiss Exchange	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	20289232	1687453	691773.5	411668.2	92.32%	62.69%	7.68%	37.31%
2007	30365892	1709730	1007615.1	361236.5	94.67%	73.61%	5.33%	26.39%
2008	41867200	180609	957270.9	66765.4	99.57%	93.48%	0.43%	6.52%
2009	31990112	15454	529887.9	14055.3	99.95%	97.42%	0.05%	2.58%
2010	32103416	6933	595339.4	14875.6	99.98%	97.56%	0.02%	2.44%

The SIX Swiss Exchange is based in Zurich and Switzerland's principal stock exchange. In 2006, the total 'Number of Trades' in EOB transaction is around 20 million where for Off-EOB is 2 million approximately. The difference between 'Number of Trades' of EOB and Off- EOB transaction is about 18 million which is prominently significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off- EOB) is 92.32% and for Off- EOB it is 7.68%. Similar scenario, EOB transaction is higher than that of Off-EOB is apparent in 'Turnover' segment. The ratio of 'Turnover' in EOB transaction is 62.69% to the total 'Turnover' in 2006. The 'Turnover' for Off- EOB transaction is 37.31% which is significantly about 40% lower than that of EOB transaction.

In the next four consecutive years from 07-2010, the EOB transaction in total 'Number of Trades' has been 94.67%, 99.57%, 99.95% and 99.98% respectively, and higher than that of Off- EOB transaction. Moreover, from 2007-2010 the 'Turnover' in EOB transaction as well has relatively been higher than that of Off- EOB transaction.

The relative fluctuation between EOB and Off- EOB transaction, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 43 & 44.

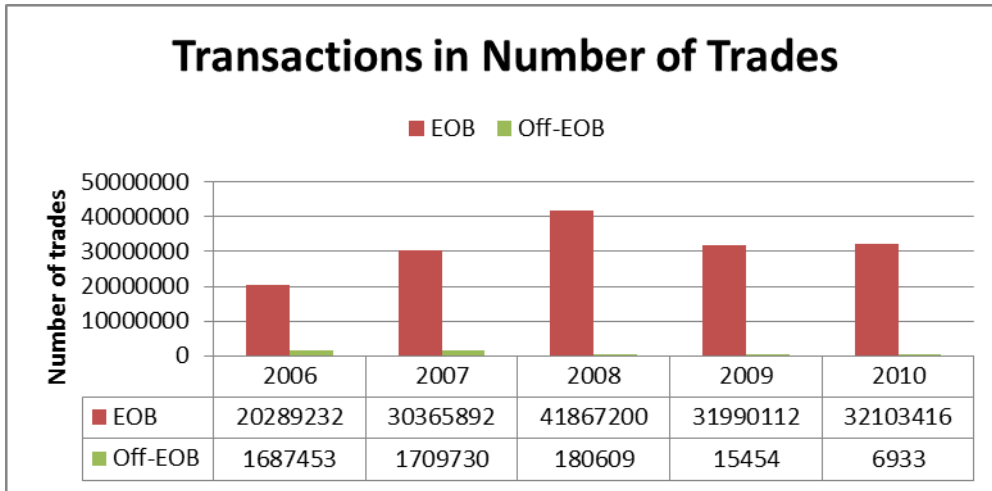


Figure 43. The 'Number of Trades'-pattern in EOB and Off-EOB transaction in SIX Swiss Exchange from 2006-2010 (FESE, 2006-2010)

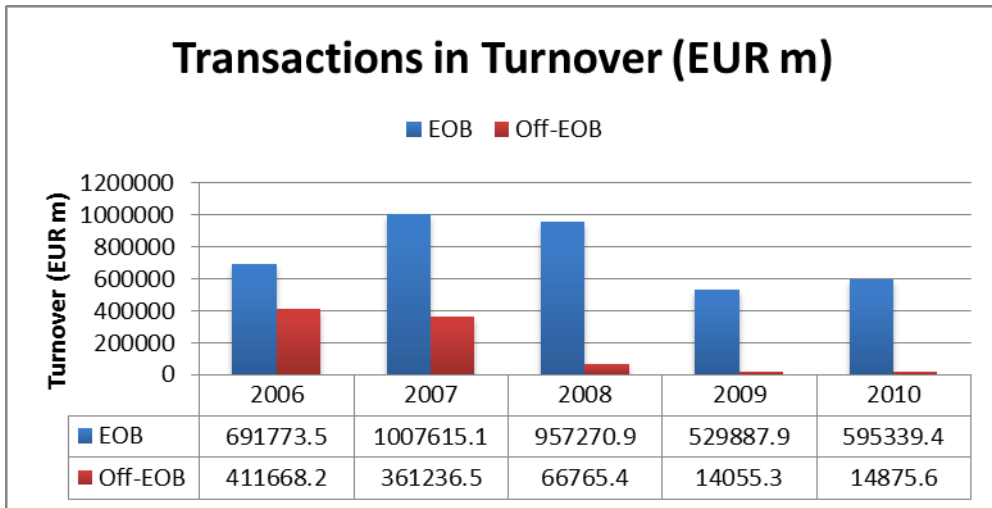


Figure 44. The 'Turnover'-pattern in EOB and Off-EOB transaction in SIX Swiss Exchange from 2006-2010 (FESE, 2006-2010)

Appendix 21: Warsaw Stock Exchange

Table 33, Annual figure (2006-2010) of Warsaw Stock Exchange from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Warsaw Stock Exchange from 2006-2010 (FESE, 2006-2010)

Warsaw Stock Exchange	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	10280959	1691	40401.1	2834.1	99.98%	93.44%	0.02%	6.56%
2007	15203866	2961	61151.7	2724.4	99.98%	95.73%	0.02%	4.27%
2008	9836831	2969	45748.3	2105.2	99.97%	95.60%	0.03%	4.40%
2009	13274986	3409	38818.8	2596.3	99.97%	93.73%	0.03%	6.27%
2010	13120775	5076	52260	7466.7	99.96%	87.50%	0.04%	12.50%

The Warsaw Stock Exchange is a stock exchange located in Warsaw, Poland.

In 2006, the total 'Number of Trades' in EOB transaction is around 10 million where for Off-EOB is 0.002 million approximately. The difference between 'Number of Trades' of EOB and Off- EOB transaction is about 10 million which is prominently significant. The significant difference between both is more apprehensible when seen as ratios. In year 2006, the ratio of trades in EOB transaction to the total 'Number of Trades' (EOB + Off- EOB) is 99.98% and for Off- EOB it is 0.02%. Similar scenario, EOB transaction is higher than that of Off-EOB, is apparent in 'Turnover' segment. The ratio of 'Turnover' in EOB transaction is 93.44% to the total 'Turnover' in 2006. The 'Turnover' for Off- EOB transaction is 6.56% which is significantly about 93% lower than that of EOB transaction.

In the next four consecutive years from 07-2010, the EOB transaction in total 'Number of Trades' has been 99.98%, 99.97%, 99.97% and 99.96% respectively, and higher than that of Off- EOB transaction. Moreover, from 2007-2010 the 'Turnover' in EOB transaction as well has relatively been higher than that of Off- EOB transaction.

The relative fluctuation between EOB and Off- EOB transaction, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 45 & 46.

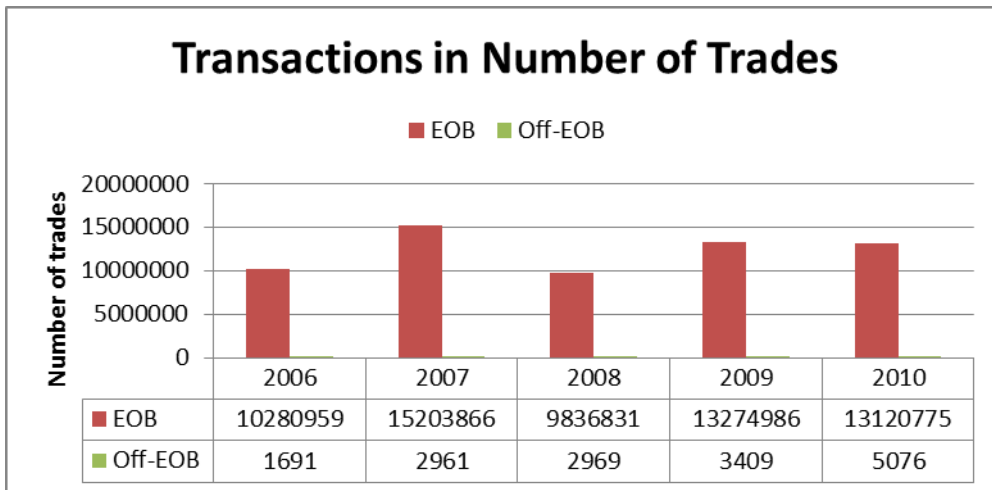


Figure 45. The 'Number of Trades'-pattern in EOB and Off-EOB transaction in Warsaw Stock Exchange from 2006-2010 (FESE, 2006-2010)

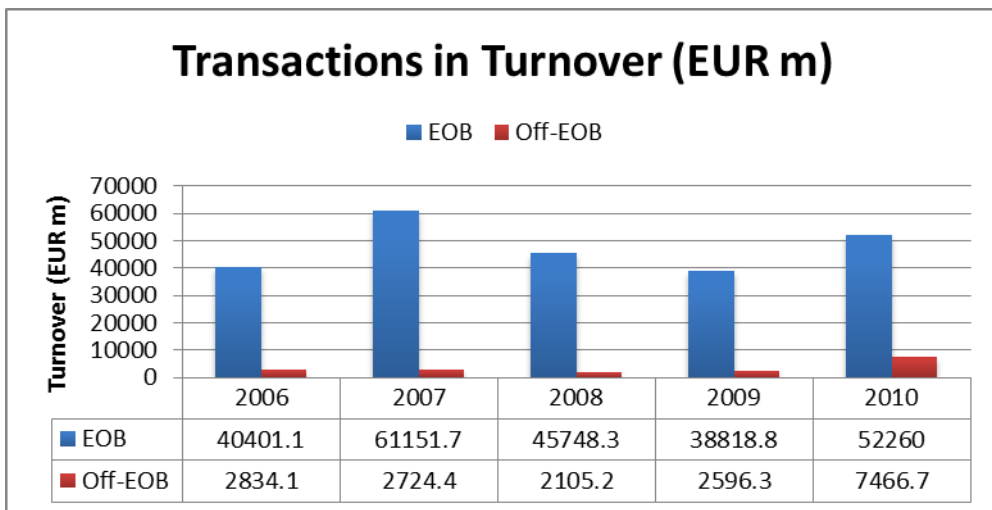


Figure 46. The 'Turnover'-pattern in EOB and Off-EOB transaction in Warsaw Stock Exchange from 2006-2010 (FESE, 2006-2010)

Appendix 22: Vienna Stock Exchange

Table 34. Annual figure (2006-2010) of Wiener Börse from FESE reports and annual ratio analysis. *The ratio analysis is done based on data of 'Number of Trades' and 'Turnover' of Vienna Stock Exchange from 2006-2010 (FESE, 2006-2010)

Wiener Börse	Trades		Turnover		Ratio of Electronic order book transactions		Ratio of Off-Electronic order book transactions	
	EOB	Off-EOB	EOB	Off-EOB	to total number of trades	to total turnover (EUR m)	to total number of trades	to total turnover (EUR m)
2006	3177974	0	64892.6	0	100.00%	100.00%	0.00%	0.00%
2007	5576556	0	94488.8	0	100.00%	100.00%	0.00%	0.00%
2008	6205029	0	71850.6	0	100.00%	100.00%	0.00%	0.00%
2009	5067313	0	36448.9	0	100.00%	100.00%	0.00%	0.00%
2010	4783239	0	36814.7	0	100.00%	100.00%	0.00%	0.00%

Vienna Stock Exchange (Wiener Börse) is the only stock exchange in Vienna, Austria. Malta Stock Exchange only represents the data of EOB transaction in the annual reports from 2006-2010 in FESE exchange reports.

The data of EOB transaction, in terms of both the total 'Number of Trades' and 'Turnover', is presented in figure 47 & 48.

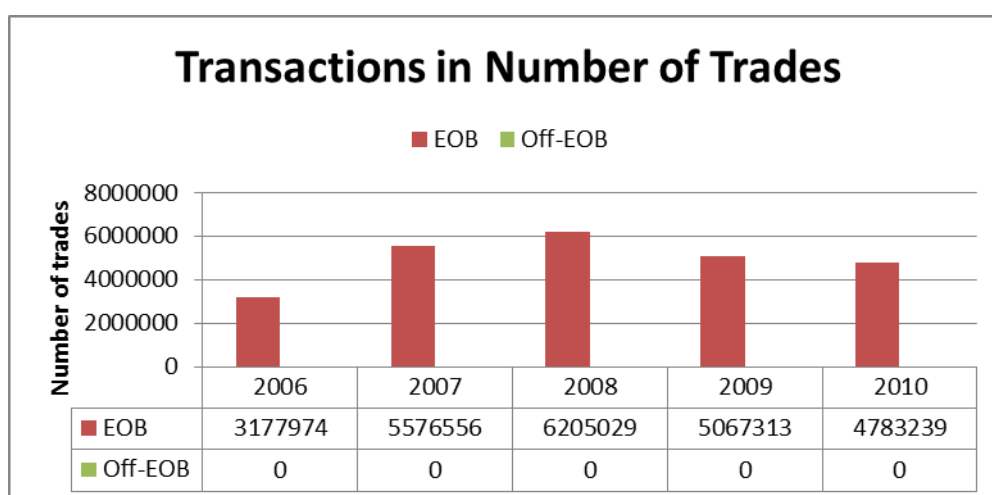


Figure 47. The 'Number of Trades'-pattern in EOB and Off-EOB transaction in Wiener Börse from 2006-2010 (FESE, 2006-2010)

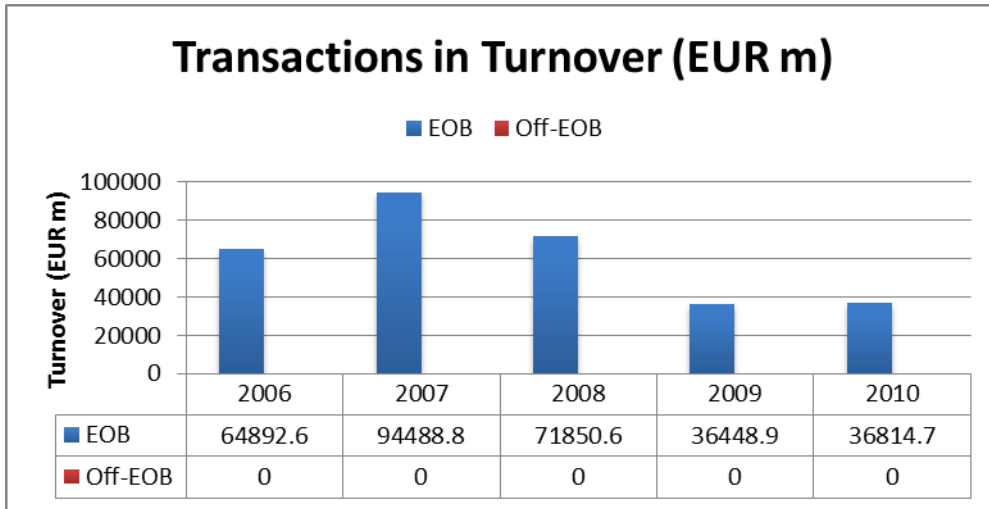


Figure 48. The 'Turnover'-pattern in EOB and Off-EOB transaction in Wiener Börse from 2006-2010 (FESE, 2006-2010)