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

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Abstract:

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).

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.

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.
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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.)

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<th>Full Members</th>
<th>Full Members</th>
<th>Observer Members</th>
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<td>London Metal Exchange</td>
<td>Belgrade Stock Exchange</td>
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<td>Boerse Stuttgart</td>
<td>Luxembourg Stock Exchange</td>
<td>RTS Exchange</td>
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<td>Bolsas y Mercados Españoles (BME)</td>
<td>Malta Stock Exchange</td>
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<td>Bolsas y Mercados Españoles (Madrid)</td>
<td>NASDAQ OMX Nordic Exchange Stockholm</td>
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<td>Bolsas y Mercados Españoles (MEFF)</td>
<td>NASDAQ OMX Nordic Exchange Helsinki</td>
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<td>Bolsas y Mercados Españoles (Valencia)</td>
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<td>Börse Berlin</td>
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<td>Bratislava Stock Exchange</td>
<td>NASDAQ OMX Tallinn</td>
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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 spilt 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 spilt 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)

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</table>

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 spilt 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 spilt 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)

<table>
<thead>
<tr>
<th>Exchange</th>
<th>Trades</th>
<th>Turnover (EUR m)</th>
<th>Trades</th>
<th>Turnover (EUR m)</th>
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<td>NASDAQ OMX Nordic - Stockholm</td>
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</table>
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 spilt 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 spilt 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)

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<tr>
<th>Exchange</th>
<th>Trades</th>
<th>Turnover (EUR m)</th>
<th>Trades</th>
<th>Turnover (EUR m)</th>
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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)

<table>
<thead>
<tr>
<th>Exchange</th>
<th>Electronic order book transactions</th>
<th>Off-Electronic order book transactions</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Trades</td>
<td>Turnover (EUR m)</td>
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<tr>
<td>Athens Exchange</td>
<td>10108927 46151.5</td>
<td>3249 4549.8</td>
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<td>31606642 897173.8</td>
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<td>Borsa Italiana</td>
<td>63898044 673141.1</td>
<td>0 0</td>
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<tr>
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<tr>
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<td>803639 563.9</td>
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<td>5067313 36448.9</td>
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<td>76 60.3</td>
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<tr>
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<td>NYSE Euronext</td>
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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 spilt 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 spilt 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)

<table>
<thead>
<tr>
<th>Exchange</th>
<th>Trades</th>
<th>Turnover (EUR m)</th>
<th>Trades</th>
<th>Turnover (EUR m)</th>
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<td><strong>642073.50</strong></td>
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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)

<table>
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<th></th>
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<td>Turnover (EUR m)</td>
<td>Trades (EUR m)</td>
<td>Turnover (EUR m)</td>
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<td>6276</td>
<td>22</td>
<td>469</td>
<td>209</td>
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</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>Total</th>
<th>Ratio of EOB</th>
<th>Ratio of Off-EOB</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>403470802</td>
<td>774950169</td>
<td>480967118</td>
<td>83.89%</td>
<td>16.11%</td>
</tr>
<tr>
<td>2007</td>
<td>612642021</td>
<td>859375801</td>
<td>698579501</td>
<td>87.70%</td>
<td>12.30%</td>
</tr>
<tr>
<td>2006</td>
<td>799947226</td>
<td>35065325</td>
<td>835012551</td>
<td>95.80%</td>
<td>4.20%</td>
</tr>
<tr>
<td>2009</td>
<td>709705746</td>
<td>26506357</td>
<td>73623103</td>
<td>96.40%</td>
<td>3.60%</td>
</tr>
<tr>
<td>2010</td>
<td>553656277</td>
<td>17645613</td>
<td>571302890</td>
<td>96.91%</td>
<td>3.09%</td>
</tr>
</tbody>
</table>
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)](image)
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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>Total</th>
<th>Ratio of EOB</th>
<th>Ratio of Off-EOB</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>10441422.6</td>
<td>6336816.2</td>
<td>16778238.8</td>
<td>62.23%</td>
<td>37.77%</td>
</tr>
<tr>
<td>2007</td>
<td>14820533.2</td>
<td>7351396.4</td>
<td>22171929.6</td>
<td>66.84%</td>
<td>33.16%</td>
</tr>
<tr>
<td>2008</td>
<td>12160545.2</td>
<td>3929796.1</td>
<td>16090341.3</td>
<td>75.58%</td>
<td>24.42%</td>
</tr>
<tr>
<td>2009</td>
<td>6893761.1</td>
<td>1607720</td>
<td>8501481.1</td>
<td>81.09%</td>
<td>18.91%</td>
</tr>
<tr>
<td>2010</td>
<td>5652536.1</td>
<td>642073.5</td>
<td>6294609.6</td>
<td>89.80%</td>
<td>10.20%</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total (Euro m)</th>
<th>EOB (Euro m)</th>
<th>Off-EOB (Euro m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>167,782,988</td>
<td>104,414,226</td>
<td>63,368,162</td>
</tr>
<tr>
<td>2007</td>
<td>221,719,296</td>
<td>148,205,332</td>
<td>73,513,964</td>
</tr>
<tr>
<td>2008</td>
<td>160,903,413</td>
<td>121,605,452</td>
<td>39,297,961</td>
</tr>
<tr>
<td>2009</td>
<td>850,148,11</td>
<td>689,376,11</td>
<td>160,7720</td>
</tr>
<tr>
<td>2010</td>
<td>629,460,96</td>
<td>565,253,61</td>
<td>64,207,35</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exchange</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Irish Stock</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exchange (85.70%)</td>
<td>Irish Stock</td>
<td>Exchange (83.04%)</td>
<td>Irish Stock</td>
<td>Exchange (77.21%)</td>
</tr>
<tr>
<td></td>
<td>Exchange (63.01%)</td>
<td>Exchange (58.47%)</td>
<td>Exchange (73.03%)</td>
<td>Exchange (73.27%)</td>
<td>Exchange (70.35%)</td>
</tr>
<tr>
<td></td>
<td>Bratislava Stock</td>
<td>Exchange (52.35%)</td>
<td>Exchange (52.35%)</td>
<td>Exchange (52.35%)</td>
<td>Exchange (52.35%)</td>
</tr>
</tbody>
</table>
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)

<table>
<thead>
<tr>
<th>Exchange</th>
<th>Ratio of EOB turnover to total turnover (EUR m)</th>
<th>Exchange</th>
<th>Ratio of EOB turnover to total turnover (EUR m)</th>
<th>Exchange</th>
<th>Ratio of EOB turnover to total turnover (EUR m)</th>
<th>Exchange</th>
<th>Ratio of EOB turnover to total turnover (EUR m)</th>
<th>Exchange</th>
<th>Ratio of EOB turnover to total turnover (EUR m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYSE Euronext</td>
<td>77.95%</td>
<td>Vienna Stock Exchange</td>
<td>100.00%</td>
<td>Boerse Stuttgart</td>
<td>100.00%</td>
<td>Boerse Stuttgart</td>
<td>100.00%</td>
<td>Boerse Stuttgart</td>
<td>100.00%</td>
</tr>
<tr>
<td>London Stock Exchange</td>
<td>36.99%</td>
<td>Luxembourg Stock Exchange</td>
<td>100.00%</td>
<td>Borsa Italiana</td>
<td>100.00%</td>
<td>Borsa Italiana</td>
<td>100.00%</td>
<td>Bulgarian Stock Exchange</td>
<td>100.00%</td>
</tr>
<tr>
<td>Deutsche Börse</td>
<td>73.57%</td>
<td>Malta Stock Exchange</td>
<td>100.00%</td>
<td>Vienna Stock Exchange</td>
<td>100.00%</td>
<td>Ljubljana Stock Exchange</td>
<td>100.00%</td>
<td>Ljubljana Stock Exchange</td>
<td>100.00%</td>
</tr>
<tr>
<td>Spanish Stock Exchange</td>
<td>74.92%</td>
<td>Budapest Stock Exchange</td>
<td>99.99%</td>
<td>Luxembourg Stock Exchange</td>
<td>100.00%</td>
<td>Vienna Stock Exchange</td>
<td>100.00%</td>
<td>Vienna Stock Exchange</td>
<td>100.00%</td>
</tr>
<tr>
<td>Borsa Italiana</td>
<td>91.07%</td>
<td>Prague Stock Exchange</td>
<td>99.89%</td>
<td>Malta Stock Exchange</td>
<td>100.00%</td>
<td>Luxembourg Stock Exchange</td>
<td>100.00%</td>
<td>Luxembourg Stock Exchange</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Exchange</th>
<th>2006 to total number of trades (%)</th>
<th>2007 to total turnover (EUR m)</th>
<th>2008 to total number of trades (%)</th>
<th>2009 to total turnover (EUR m)</th>
<th>2010 to total number of trades (%)</th>
<th>2010 to total turnover (EUR m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athens Exchange</td>
<td>83.33%</td>
<td>79.99%</td>
<td>81.63%</td>
<td>77.51%</td>
<td>99.96%</td>
<td>83.03%</td>
</tr>
<tr>
<td>Bolsas y Mercados Españoles (BME)</td>
<td>99.00%</td>
<td>74.92%</td>
<td>99.35%</td>
<td>77.11%</td>
<td>99.44%</td>
<td>75.14%</td>
</tr>
<tr>
<td>Borsa Italiana</td>
<td>99.88%</td>
<td>91.07%</td>
<td>99.91%</td>
<td>93.71%</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Bratislava Stock Exchange</td>
<td>93.42%</td>
<td>47.65%</td>
<td>81.97%</td>
<td>50.00%</td>
<td>80.87%</td>
<td>26.97%</td>
</tr>
<tr>
<td>Bucharest Stock Exchange</td>
<td>99.97%</td>
<td>91.72%</td>
<td>99.97%</td>
<td>84.57%</td>
<td>99.99%</td>
<td>91.95%</td>
</tr>
<tr>
<td>Budapest Stock Exchange</td>
<td>99.98%</td>
<td>91.47%</td>
<td>99.99%</td>
<td>99.40%</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Bulgarian Stock Exchange</td>
<td>99.84%</td>
<td>82.57%</td>
<td>97.66%</td>
<td>85.84%</td>
<td>97.34%</td>
<td>71.12%</td>
</tr>
<tr>
<td>Cyprus Stock Exchange</td>
<td>99.99%</td>
<td>86.20%</td>
<td>99.98%</td>
<td>92.77%</td>
<td>99.97%</td>
<td>91.51%</td>
</tr>
<tr>
<td>Deutsche Börse</td>
<td>48.74%</td>
<td>73.57%</td>
<td>59.91%</td>
<td>77.70%</td>
<td>83.17%</td>
<td>68.00%</td>
</tr>
<tr>
<td>Irish Stock Exchange</td>
<td>57.62%</td>
<td>14.30%</td>
<td>70.62%</td>
<td>16.96%</td>
<td>79.00%</td>
<td>22.79%</td>
</tr>
<tr>
<td>Istanbul Stock Exchange</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>100.00%</td>
<td>91.03%</td>
</tr>
<tr>
<td>Ljubljana Stock Exchange</td>
<td>99.47%</td>
<td>55.20%</td>
<td>99.55%</td>
<td>57.71%</td>
<td>99.65%</td>
<td>60.49%</td>
</tr>
<tr>
<td>London Stock Exchange</td>
<td>82.54%</td>
<td>36.99%</td>
<td>86.24%</td>
<td>41.53%</td>
<td>96.30%</td>
<td>59.64%</td>
</tr>
<tr>
<td>Luxembourg Stock Exchange</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Malta Stock Exchange</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>NASDAQ OMX Nordic</td>
<td>93.73%</td>
<td>74.80%</td>
<td>95.02%</td>
<td>78.42%</td>
<td>96.06%</td>
<td>89.10%</td>
</tr>
<tr>
<td>NYSE Euronext</td>
<td>99.31%</td>
<td>77.95%</td>
<td>99.51%</td>
<td>80.49%</td>
<td>99.59%</td>
<td>84.82%</td>
</tr>
<tr>
<td>Oslo Børs</td>
<td>98.15%</td>
<td>79.06%</td>
<td>98.42%</td>
<td>80.41%</td>
<td>99.55%</td>
<td>89.53%</td>
</tr>
<tr>
<td>Prague Stock Exchange</td>
<td>99.45%</td>
<td>94.49%</td>
<td>99.89%</td>
<td>98.28%</td>
<td>98.98%</td>
<td>98.79%</td>
</tr>
<tr>
<td>SIX Swiss Exchange</td>
<td>0.00%</td>
<td>62.69%</td>
<td>0.00%</td>
<td>73.61%</td>
<td>0.00%</td>
<td>93.48%</td>
</tr>
<tr>
<td>Vienna Stock Exchange</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Warsaw Stock Exchange</td>
<td>99.98%</td>
<td>93.44%</td>
<td>99.98%</td>
<td>95.73%</td>
<td>99.97%</td>
<td>95.60%</td>
</tr>
</tbody>
</table>

Note: The data is based on the number of trades of FESE from 2006-2010.
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


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>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>Ratio of Electronic order book transactions</th>
<th>Ratio of Off-Electronic order book transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>to total number of trades</td>
<td>to total turnover (EUR m)</td>
</tr>
<tr>
<td>2006</td>
<td>11128589</td>
<td>2225717</td>
<td>68034</td>
<td>17019.9</td>
<td>83.33%</td>
<td>79.99%</td>
</tr>
<tr>
<td>2007</td>
<td>11615994</td>
<td>2613598</td>
<td>94846.2</td>
<td>27518.3</td>
<td>81.63%</td>
<td>77.51%</td>
</tr>
<tr>
<td>2008</td>
<td>9375799</td>
<td>3606</td>
<td>64742.9</td>
<td>13229.9</td>
<td>99.96%</td>
<td>83.03%</td>
</tr>
<tr>
<td>2009</td>
<td>10108927</td>
<td>3249</td>
<td>46151.5</td>
<td>4549.8</td>
<td>99.97%</td>
<td>91.03%</td>
</tr>
<tr>
<td>2010</td>
<td>7876553</td>
<td>2625</td>
<td>32564.2</td>
<td>2189.6</td>
<td>99.97%</td>
<td>93.70%</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>Ratio of Electronic order book transactions</th>
<th>Ratio of Off-Electronic order book transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>to total number of trades</td>
<td>to total turnover (EUR m)</td>
<td>to total number of trades</td>
<td>to total turnover (EUR m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>22967332</td>
<td>231100</td>
<td>1150565</td>
<td>385068.8</td>
<td>99.00%</td>
<td>74.92%</td>
</tr>
<tr>
<td>2007</td>
<td>34637200</td>
<td>225418</td>
<td>1665762</td>
<td>494558.9</td>
<td>99.35%</td>
<td>77.11%</td>
</tr>
<tr>
<td>2008</td>
<td>37156188</td>
<td>207659</td>
<td>1243167</td>
<td>411391.8</td>
<td>99.44%</td>
<td>75.14%</td>
</tr>
<tr>
<td>2009</td>
<td>31606642</td>
<td>186545</td>
<td>897173.8</td>
<td>251396</td>
<td>99.41%</td>
<td>78.11%</td>
</tr>
<tr>
<td>2010</td>
<td>40402056</td>
<td>198476</td>
<td>1031318</td>
<td>219108.4</td>
<td>99.51%</td>
<td>82.48%</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>22967332</td>
<td>231100</td>
</tr>
<tr>
<td>2007</td>
<td>34637200</td>
<td>225418</td>
</tr>
<tr>
<td>2008</td>
<td>37156188</td>
<td>207659</td>
</tr>
<tr>
<td>2009</td>
<td>31606642</td>
<td>186545</td>
</tr>
<tr>
<td>2010</td>
<td>40402056</td>
<td>198476</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>1150565.2</td>
<td>385068.8</td>
</tr>
<tr>
<td>2007</td>
<td>1665761.9</td>
<td>494558.9</td>
</tr>
<tr>
<td>2008</td>
<td>1243166.5</td>
<td>411391.8</td>
</tr>
<tr>
<td>2009</td>
<td>897173.8</td>
<td>251396</td>
</tr>
<tr>
<td>2010</td>
<td>1031318.2</td>
<td>219108.4</td>
</tr>
</tbody>
</table>
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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB Trades</th>
<th>Off-EOB Trades</th>
<th>EOB Turnover</th>
<th>Off-EOB Turnover</th>
<th>Ratio of Electronic order book transactions</th>
<th>Ratio of Off-Electronic order book transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>to total number of trades</td>
<td>to total number of trades (EUR m)</td>
<td>to total turnover (EUR m)</td>
<td>to total number of trades</td>
<td>to total turnover (EUR m)</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>57527000</td>
<td>67000</td>
<td>1145650</td>
<td>112378</td>
<td>99.88%</td>
<td>91.07%</td>
</tr>
<tr>
<td>2007</td>
<td>72500296</td>
<td>68413</td>
<td>1574593</td>
<td>105607</td>
<td>99.91%</td>
<td>93.71%</td>
</tr>
<tr>
<td>2008</td>
<td>69293592</td>
<td>0</td>
<td>1029127</td>
<td>0</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>2009</td>
<td>63898044</td>
<td>0</td>
<td>673141.1</td>
<td>0</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>2010</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

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)

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

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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB (trades)</th>
<th>Off-EOB (trades)</th>
<th>EOB (turnover)</th>
<th>Off-EOB (turnover)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>601499</td>
<td>193</td>
<td>1163.9</td>
<td>105.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>99.97%</td>
<td>91.72%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>to total trades</td>
<td>to total turnover (EUR m)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.03%</td>
<td>8.28%</td>
</tr>
<tr>
<td>2007</td>
<td>734346</td>
<td>194</td>
<td>1682.9</td>
<td>307.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>99.97%</td>
<td>84.57%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.03%</td>
<td>15.43%</td>
</tr>
<tr>
<td>2008</td>
<td>800811</td>
<td>77</td>
<td>966</td>
<td>84.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>99.99%</td>
<td>91.95%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.01%</td>
<td>8.05%</td>
</tr>
<tr>
<td>2009</td>
<td>803639</td>
<td>96</td>
<td>563.9</td>
<td>76.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>99.99%</td>
<td>88.10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.01%</td>
<td>11.90%</td>
</tr>
<tr>
<td>2010</td>
<td>515800</td>
<td>140</td>
<td>542.3</td>
<td>161.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>99.97%</td>
<td>77.04%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.03%</td>
<td>22.96%</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>to total number of trades</th>
<th>to total turnover (EUR m)</th>
<th>to total number of trades</th>
<th>to total turnover (EUR m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>1464580</td>
<td>333</td>
<td>22524.6</td>
<td>2100.9</td>
<td>99.98%</td>
<td>91.47%</td>
<td>0.02%</td>
<td>8.53%</td>
</tr>
<tr>
<td>2007</td>
<td>1629278</td>
<td>95</td>
<td>34403.2</td>
<td>207.1</td>
<td>99.99%</td>
<td>99.40%</td>
<td>0.01%</td>
<td>0.60%</td>
</tr>
<tr>
<td>2008</td>
<td>1893044</td>
<td>73</td>
<td>20916.4</td>
<td>47.1</td>
<td>100.00%</td>
<td>99.78%</td>
<td>0.00%</td>
<td>0.22%</td>
</tr>
<tr>
<td>2009</td>
<td>3349838</td>
<td>47</td>
<td>18449.1</td>
<td>13.9</td>
<td>100.00%</td>
<td>99.92%</td>
<td>0.00%</td>
<td>0.08%</td>
</tr>
<tr>
<td>2010</td>
<td>2612330</td>
<td>135</td>
<td>19925.4</td>
<td>76.5</td>
<td>99.99%</td>
<td>99.62%</td>
<td>0.01%</td>
<td>0.38%</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>Ratio of Electronic order book transactions</th>
<th>Ratio of Off-Electronic order book transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>to total number of trades</td>
<td>to total turnover (EUR m)</td>
</tr>
<tr>
<td>2006</td>
<td>187896</td>
<td>298</td>
<td>1169.9</td>
<td>247</td>
<td>99.84%</td>
<td>82.57%</td>
</tr>
<tr>
<td>2007</td>
<td>457221</td>
<td>10952</td>
<td>3983.5</td>
<td>657.2</td>
<td>97.66%</td>
<td>85.84%</td>
</tr>
<tr>
<td>2008</td>
<td>378466</td>
<td>10355</td>
<td>939.2</td>
<td>381.3</td>
<td>97.34%</td>
<td>71.12%</td>
</tr>
<tr>
<td>2009</td>
<td>190518</td>
<td>442</td>
<td>339.5</td>
<td>18</td>
<td>99.77%</td>
<td>94.97%</td>
</tr>
<tr>
<td>2010</td>
<td>103180</td>
<td>0</td>
<td>280.9</td>
<td>0</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

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)

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

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.

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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>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>Ratio of Electronic order book transactions</th>
<th>Ratio of Off-Electronic order book transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>to total number of trades</td>
<td>to total turnover (EUR m)</td>
<td>to total number of trades</td>
<td>to total turnover (EUR m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>53131428</td>
<td>55886764</td>
<td>1592747</td>
<td>572100.2</td>
<td>48.74%</td>
<td>73.57%</td>
</tr>
<tr>
<td>2007</td>
<td>86880744</td>
<td>58138800</td>
<td>2442977</td>
<td>701173.4</td>
<td>59.91%</td>
<td>77.70%</td>
</tr>
<tr>
<td>2008</td>
<td>118036408</td>
<td>23877492</td>
<td>2191909</td>
<td>1031594</td>
<td>83.17%</td>
<td>68.00%</td>
</tr>
<tr>
<td>2009</td>
<td>86868000</td>
<td>14989663</td>
<td>1084238</td>
<td>159182.2</td>
<td>85.28%</td>
<td>87.20%</td>
</tr>
<tr>
<td>2010</td>
<td>99900496</td>
<td>15646501</td>
<td>1236940</td>
<td>188817.9</td>
<td>86.46%</td>
<td>86.76%</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>Ratio of Electronic order book transactions</th>
<th>Ratio of Off-Electronic order book transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>to total number of trades</td>
<td>to total turnover (EUR m)</td>
</tr>
<tr>
<td>2006</td>
<td>259571</td>
<td>190882</td>
<td>9237.9</td>
<td>55354.7</td>
<td>57.62%</td>
<td>14.30%</td>
</tr>
<tr>
<td>2007</td>
<td>609430</td>
<td>253519</td>
<td>16879.3</td>
<td>82670.9</td>
<td>70.62%</td>
<td>16.96%</td>
</tr>
<tr>
<td>2008</td>
<td>998076</td>
<td>265276</td>
<td>12815.7</td>
<td>43406.3</td>
<td>79.00%</td>
<td>22.79%</td>
</tr>
<tr>
<td>2009</td>
<td>914308</td>
<td>229259</td>
<td>7098.8</td>
<td>19456.6</td>
<td>79.95%</td>
<td>26.73%</td>
</tr>
<tr>
<td>2010</td>
<td>899791</td>
<td>157728</td>
<td>6752</td>
<td>16017.8</td>
<td>85.09%</td>
<td>29.65%</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>Ratio of Electronic order book transactions</th>
<th>Ratio of Off-Electronic order book transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>to total number of trades</td>
<td>to total turnover (EUR m)</td>
</tr>
<tr>
<td>2006</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>2007</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>2008</td>
<td>45616364</td>
<td>7</td>
<td>171854.7</td>
<td>148.8</td>
<td>100.00%</td>
<td>99.91%</td>
</tr>
<tr>
<td>2009</td>
<td>68318528</td>
<td>5</td>
<td>218197</td>
<td>80.4</td>
<td>100.00%</td>
<td>91.03%</td>
</tr>
<tr>
<td>2010</td>
<td>81133552</td>
<td>16</td>
<td>313570.1</td>
<td>308.4</td>
<td>100.00%</td>
<td>99.90%</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>to total number of trades</th>
<th>to total turnover (EUR m)</th>
<th>to total number of trades</th>
<th>to total turnover (EUR m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>166246</td>
<td>893</td>
<td>801.3</td>
<td>650.2</td>
<td>99.47%</td>
<td>55.20%</td>
<td>0.53%</td>
<td>44.80%</td>
</tr>
<tr>
<td>2007</td>
<td>229696</td>
<td>1031</td>
<td>1952</td>
<td>1430.3</td>
<td>99.55%</td>
<td>57.71%</td>
<td>0.45%</td>
<td>42.29%</td>
</tr>
<tr>
<td>2008</td>
<td>219382</td>
<td>778</td>
<td>970.6</td>
<td>634</td>
<td>99.65%</td>
<td>60.49%</td>
<td>0.35%</td>
<td>39.51%</td>
</tr>
<tr>
<td>2009</td>
<td>135853</td>
<td>0</td>
<td>719.9</td>
<td>0</td>
<td>100.00%</td>
<td>100.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>2010</td>
<td>101912</td>
<td>0</td>
<td>360.8</td>
<td>0</td>
<td>100.00%</td>
<td>100.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>to total number of trades</th>
<th>to total turnover (EUR m)</th>
<th>to total number of trades</th>
<th>to total turnover (EUR m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>78246360</td>
<td>16553175</td>
<td>2215963</td>
<td>3774529</td>
<td>82.54%</td>
<td>36.99%</td>
<td>17.46%</td>
<td>63.01%</td>
</tr>
<tr>
<td>2007</td>
<td>138833632</td>
<td>22155996</td>
<td>3133478.5</td>
<td>4411492</td>
<td>86.24%</td>
<td>41.53%</td>
<td>13.76%</td>
<td>58.47%</td>
</tr>
<tr>
<td>2008</td>
<td>194313088</td>
<td>7465809</td>
<td>2601411</td>
<td>1760787</td>
<td>96.30%</td>
<td>59.64%</td>
<td>3.70%</td>
<td>40.36%</td>
</tr>
<tr>
<td>2009</td>
<td>156441568</td>
<td>9564100</td>
<td>1270019.9</td>
<td>977054.6</td>
<td>94.24%</td>
<td>56.52%</td>
<td>5.76%</td>
<td>43.48%</td>
</tr>
<tr>
<td>2010</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>Ratio of Electronic order book transactions</th>
<th>Ratio of Off-Electronic order book transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>to total number of trades</td>
<td>to total turnover (EUR m)</td>
</tr>
<tr>
<td>2006</td>
<td>14558</td>
<td>0</td>
<td>187.1</td>
<td>0</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>2007</td>
<td>14642</td>
<td>0</td>
<td>175.7</td>
<td>0</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>2008</td>
<td>23094</td>
<td>0</td>
<td>1311</td>
<td>0</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>2009</td>
<td>14312</td>
<td>0</td>
<td>213.8</td>
<td>0</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>2010</td>
<td>11890</td>
<td>0</td>
<td>163.1</td>
<td>0</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>EOB to total number of trades</th>
<th>Turnover (EUR m)</th>
<th>Off-EOB to total turnover (EUR m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>30371</td>
<td>0</td>
<td>100.00%</td>
<td>205.1</td>
<td>0.00%</td>
</tr>
<tr>
<td>2007</td>
<td>10149</td>
<td>0</td>
<td>100.00%</td>
<td>64.7</td>
<td>0.00%</td>
</tr>
<tr>
<td>2008</td>
<td>8656</td>
<td>0</td>
<td>100.00%</td>
<td>48.9</td>
<td>0.00%</td>
</tr>
<tr>
<td>2009</td>
<td>6811</td>
<td>0</td>
<td>100.00%</td>
<td>25.4</td>
<td>0.00%</td>
</tr>
<tr>
<td>2010</td>
<td>8767</td>
<td>0</td>
<td>100.00%</td>
<td>36.2</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>14558</td>
<td>0</td>
</tr>
<tr>
<td>2007</td>
<td>14642</td>
<td>0</td>
</tr>
<tr>
<td>2008</td>
<td>23094</td>
<td>0</td>
</tr>
<tr>
<td>2009</td>
<td>14312</td>
<td>0</td>
</tr>
<tr>
<td>2010</td>
<td>11890</td>
<td>0</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>187.1</td>
<td>0</td>
</tr>
<tr>
<td>2007</td>
<td>175.7</td>
<td>0</td>
</tr>
<tr>
<td>2008</td>
<td>1311</td>
<td>0</td>
</tr>
<tr>
<td>2009</td>
<td>213.8</td>
<td>0</td>
</tr>
<tr>
<td>2010</td>
<td>163.1</td>
<td>0</td>
</tr>
</tbody>
</table>
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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB Trades</th>
<th>Off-EOB Trades</th>
<th>EOB Turnover</th>
<th>Off-EOB Turnover</th>
<th>Ratio of Electronic order book transactions</th>
<th>Ratio of Off-Electronic order book transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>to total number of trades</td>
<td>to total turnover (EUR m)</td>
<td>to total number of trades</td>
<td>to total turnover (EUR m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>104521792</td>
<td>723890</td>
<td>2375475</td>
<td>672112</td>
<td>99.31%</td>
<td>77.95%</td>
</tr>
<tr>
<td>2007</td>
<td>153977344</td>
<td>758982</td>
<td>3289384</td>
<td>797427</td>
<td>99.51%</td>
<td>80.49%</td>
</tr>
<tr>
<td>2008</td>
<td>191045696</td>
<td>784308</td>
<td>2606171</td>
<td>466246</td>
<td>99.59%</td>
<td>84.82%</td>
</tr>
<tr>
<td>2009</td>
<td>167127648</td>
<td>465530</td>
<td>1382736.2</td>
<td>123445</td>
<td>99.72%</td>
<td>91.80%</td>
</tr>
<tr>
<td>2010</td>
<td>180371472</td>
<td>845549</td>
<td>1532631</td>
<td>129320</td>
<td>99.53%</td>
<td>92.22%</td>
</tr>
</tbody>
</table>

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 105 million 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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>to total number of trades</th>
<th>to total turnover (EUR m)</th>
<th>to total turnover (EUR m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>29690560</td>
<td>1984781</td>
<td>775659.1</td>
<td>261302.6</td>
<td>93.73%</td>
<td>74.80%</td>
<td>6.27%</td>
</tr>
<tr>
<td>2007</td>
<td>46087736</td>
<td>2417672</td>
<td>1036515.8</td>
<td>285290.8</td>
<td>95.02%</td>
<td>78.42%</td>
<td>4.98%</td>
</tr>
<tr>
<td>2008</td>
<td>53354888</td>
<td>2188376</td>
<td>818367.6</td>
<td>100070.8</td>
<td>96.06%</td>
<td>89.10%</td>
<td>3.94%</td>
</tr>
<tr>
<td>2009</td>
<td>51159892</td>
<td>999794</td>
<td>498984.6</td>
<td>43384.5</td>
<td>98.08%</td>
<td>92.00%</td>
<td>1.92%</td>
</tr>
<tr>
<td>2010</td>
<td>68759152</td>
<td>729710</td>
<td>568050.4</td>
<td>44656</td>
<td>98.95%</td>
<td>92.71%</td>
<td>1.05%</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>Ratio of Electronic order book transactions</th>
<th>Ratio of Off-Electronic order book transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>to total number of trades</td>
<td>to total turnover (EUR m)</td>
<td>to total number of trades</td>
<td>to total turnover (EUR m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>8663262</td>
<td>163235</td>
<td>253766.6</td>
<td>67204.9</td>
<td>98.15%</td>
<td>79.06%</td>
</tr>
<tr>
<td>2007</td>
<td>11916739</td>
<td>191831</td>
<td>320886.7</td>
<td>78167.1</td>
<td>98.42%</td>
<td>80.41%</td>
</tr>
<tr>
<td>2008</td>
<td>16872192</td>
<td>77057</td>
<td>325916.1</td>
<td>32251.6</td>
<td>99.55%</td>
<td>89.53%</td>
</tr>
<tr>
<td>2009</td>
<td>15780814</td>
<td>48106</td>
<td>163642.8</td>
<td>12139.5</td>
<td>99.70%</td>
<td>93.09%</td>
</tr>
<tr>
<td>2010</td>
<td>18735452</td>
<td>53082</td>
<td>198753</td>
<td>18448.7</td>
<td>99.72%</td>
<td>91.51%</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>Ratio of Electronic order book transactions</th>
<th>Ratio of Off-Electronic order book transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>to total number of trades</td>
<td>to total turnover (EUR m)</td>
</tr>
<tr>
<td>2006</td>
<td>567893</td>
<td>318</td>
<td>28360.7</td>
<td>1654.7</td>
<td>99.45%</td>
<td>94.49%</td>
</tr>
<tr>
<td>2007</td>
<td>670873</td>
<td>765</td>
<td>35953.8</td>
<td>627.6</td>
<td>99.89%</td>
<td>98.28%</td>
</tr>
<tr>
<td>2008</td>
<td>1395871</td>
<td>315</td>
<td>33764</td>
<td>414.6</td>
<td>99.96%</td>
<td>98.79%</td>
</tr>
<tr>
<td>2009</td>
<td>1571640</td>
<td>127</td>
<td>17471.9</td>
<td>92.6</td>
<td>99.99%</td>
<td>99.47%</td>
</tr>
<tr>
<td>2010</td>
<td>1162508</td>
<td>135</td>
<td>15258.2</td>
<td>132.8</td>
<td>99.99%</td>
<td>99.14%</td>
</tr>
</tbody>
</table>

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)

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

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)

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)

<table>
<thead>
<tr>
<th>Year</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>EOB</th>
<th>Off-EOB</th>
<th>Ratio of Electronic order book transactions</th>
<th>Ratio of Off-Electronic order book transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>to total number of trades</td>
<td>to total turnover (EUR m)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>to total turnover (EUR m)</td>
<td>to total turnover (EUR m)</td>
</tr>
<tr>
<td>2006</td>
<td>3177974</td>
<td>0</td>
<td>64892.6</td>
<td>0</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>2007</td>
<td>5576556</td>
<td>0</td>
<td>94488.8</td>
<td>0</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>2008</td>
<td>6205029</td>
<td>0</td>
<td>71850.6</td>
<td>0</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>2009</td>
<td>5067313</td>
<td>0</td>
<td>36448.9</td>
<td>0</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>2010</td>
<td>4783239</td>
<td>0</td>
<td>36814.7</td>
<td>0</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

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)