

Overview

This document is the Statistics Methodology of the Federation of European Securities Exchanges (FESE).

The manual provides the reader with detailed explanations of the statistics published by the FESE on each of its members. Where relevant, detailed examples have been provided to aid clarity.

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Introduction

Securities exchanges provide environments for admitting financial instruments to listing or to trading, along with rules and facilities for the trading of financial instruments.

Exchanges typically have a main market and may also have parallel/specialised markets. OTC trading or national electronic markets not operated and supervised by a recognized exchange are not included in the statistics provided by the FESE.

FESE makes all reasonable efforts to ensure that its statistics are comparable between individual members. Notable exceptions from this rule are mentioned in this document. One should be cautious when directly comparing FESE figures with statistics of other trading venues as these may be based on different standards.

Definitions

Specialised market/segment

Those markets/segments operated by the exchange which have different listing rules than those of the Official List/Main Market. Multilateral Trading Facilities (MTFs) managed by FESE members are included under this category. They may be dedicated to small and medium enterprises; young, fast-growing companies from the high-tech sector, etc.

Company admitted to listing

A company whose shares are listed and traded on a certain exchange. Admitted to listing implies that the issuing company have to comply with a series of different admission requirements before they could be admitted by the Exchange authorities and/or the Competent Authorities.

Company admitted to trading

A company whose shares are traded but not listed at the exchange.

Dark Pool Trading

It includes all transfers of ownership by way of trades automatically executed in special markets / segments managed by Exchanges/MTFs where matching algorithms do not provide for pre-trade transparency and where both orders were not transparent. In case of platforms offering also smart order routing systems for the management of unexecuted orders, flows routed to other trading venues for their execution should not be included. In case of smart order routing, only the ultimate execution venue is allowed to integrate the corresponding trade in its own statistics. All dark pools trades are single counted. All turnover categories: Dark Pool, Electronic Order Book, Off-Electronic Order Book and Reporting transactions are mutually exclusive.

Domestic Companies

A company is considered domestic when it is incorporated in the same country as where the exchange is located. Exclusively listed foreign companies are included in the statistics together with domestic companies.

Electronic Order Book Transactions (EOB)

This contains all transfers of ownership by way of trades executed through the Exchanges/MTFs 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/MTFs (generally based on price / time priority) and whose prices are displayed to the market. These trades may include floor trading organized by an Exchange/MTF. All electronic order book transactions are single-counted. All turnover categories: Dark Pool, Electronic Order Book, Off-Electronic Order Book and Reporting transactions are mutually exclusive.

For equities trades additional data granularity is available. Electronic order book trades and turnover statistics display details broken down by scheduled opening auction, scheduled closing auction, scheduled intraday auction, Continuous trading and miscellaneous (unscheduled auctions). This more granular data breakdown is designed alongside FIX Market Model Typology (MMT).

Please refer to FIX Website for detailed definitions:

<http://www.fixtradingcommunity.org/pg/group-types/mmt>

Exclusively Listed Foreign Companies

Shares of foreign companies which are exclusively listed on an exchange, i.e. the foreign company is not listed on any other exchange (see definition of “Domestic Companies” above).

Foreign Companies

A company is considered foreign when it is incorporated in a country other than that where the exchange is located.

Index database

FESE Economics and Statistics Committee and SIX Swiss Exchange have prepared a detailed overview of more than 120 market indices most commonly used in Europe. You will find precise information on their technical details, data dissemination, related derivatives products and legal and administrative details. All indices available on FESE statistical tables are described in detail.

The FESE index database can be accessed through the link:

<http://www.fese.eu/statistics-market-research/index-database/>

IPO (Initial public offering)

The placement of stocks by an unlisted company aimed at creating the float for the admission to listing on a market operator (i.e. Exchange Regulated or Regulated Market). Figures presented include both IPOs (when a prospectus has been approved by a regulator) and private placements (where the prospectus is not mandatory). During the offer, both existing shareholders (i.e. qualified investors and private individual) and the company itself may place – through an offer usually run by a pool of intermediaries and managed by a global coordinator – already issued or newly issued shares.

IPOs statistics are collected based on the following definition:

- The company must be listed for the first time
- The prospectus, approved by a regulatory authority, or a document required by the rules of a Multilateral Trading Facility (MTF) for shares to become listed on the MTF, must be available
- Shares must be offered to the public

Off Electronic Order Book Transactions (Off EOB) – Applicable to equity tables 4a-e, 6a-b

This contains trades different from the EOB, confirmed through a system managed (directly or indirectly) by the Exchange, where both seller and buyer agree on the transaction (price and quantity). This system checks automatically if the transaction is compliant with the exchange rules, including most often consistency with EOB price. All turnover categories: Dark Pool, Electronic Order Book, Off-Electronic Order Book and Reporting transactions are mutually exclusive. This category is included as of January 2009 figures onwards.

Off Electronic Order Book Trades (Off-EOB) – Applicable to other tables

These figures are all other transfers of ownership by way of trades matched neither on an electronic order book nor on a dark pool. Bilateral negotiations leading to such trades may not be exposed to the market until after the trade is completed. In compliance with the Exchange/MTF/trade reporting venue trading rules, they can be executed in several ways adopted by intermediaries for their interaction. They are reported by an intermediary to the Exchange/MTF/trade reporting venue, that should avoid counting both sides of the trade. They include also late trades (reported after market close), OTC trades (matched at conditions different from those established by the Exchange) and those trades for which MiFID allows a delayed reporting. In order to be included in FESE statistics, this activity must generate revenues to the Exchange/MTF/trade reporting venue and/or be managed by a reporting system organised by the Exchange/MTF/trade reporting venue. Due to the variety of business collected by this category the figures are not directly comparable between individual members (see "Single Counting"). All turnover categories: Dark Pool, Electronic Order Book, Off-Electronic Order Book and Reporting transactions are mutually exclusive.

Official List / Main Market

The official list of an Exchange (often also known as main market) is the market in which securities are officially admitted to listing. Admission to the official list implies that issuing companies have to

comply with a series of different admission requirements before they could be admitted by the Exchange authorities and/or the Competent Authorities.

Reporting Transactions

This contains trades reported through a Trade Reporting Facility (TRF) when only one counterparty provides information on the trade and offers dissemination services at the request of the reporting trader. The other counterparty could use this facility if reporting is mandatory. All turnover categories: Dark Pool, Electronic Order Book, Off-Electronic Order Book and Reporting transactions are mutually exclusive. This category is included as of January 2009 figures onwards.

Single counting

In order to ensure data comparability, the number of trades and turnover are generally single counted. The single counting procedure depends on the methodology of every exchange.

The most common procedures used are:

- halving the trades and turnover figures
- counting only one side of the transaction
- using one single identification per trade as suggested by the exchange systems.

Due to the great variety of business included under Off-Electronic Order Book Transactions the concept of single counting cannot be applied to all components in this category.

Turnover

Turnover or trading value is the total number of cash financial instruments traded during a certain period multiplied by their respective executed prices.

Turnover velocity (%)

The turnover velocity is calculated as follows:

$$\frac{[(\text{Monthly domestic share EOB turnover}) * 12]}{[(\text{Previous Month-end Domestic Market Capitalisation} + \text{Month-end Domestic Market Capitalisation}) / 2]}$$

Volatility

The volatility of traded indices shown in table 1c is calculated as follows:

$$\text{Standard Deviation of } \ln \left[\left(\frac{\text{Index value}_d}{\text{Index value}_{d-1}} \right) \dots \left(\frac{\text{Index value}_{d-124}}{\text{Index value}_{d-125}} \right) \right]$$

Multiplied by square root of 250

Multiplied by 100

Where “d” stands for “day”.

Notation

The following notation is used in the statistics monthly factsheets:

- “n/a” means “not available”. Figures may exist although cannot be reported (i.e. due to technical reasons, etc.)
- “0” means “zero”. There was not trading in that instrument during the relevant period.
- “//” means “not applicable”. The instrument is not traded on the exchange or there is not such market at the exchange. Under circumstances, there is no meaningful data.

Table 1a, 1b, 1c & 1d: Stock Exchange Indices

A stock exchange index is an indicator which reflects the aggregated performance of the underlying set of constituents included in the index. Broad market indices generally include a large number of shares (constituents), while basket indices and sector indices are composed by a subset of listed shares, according to their size/liquidity or sectoral activity. Usually stock indices are market capitalisation weighted or free-float based. Indices calculations are adjusted to reflect changes in constituents and corporate actions such as changes in share capital. Three further classifications of indices are:

Price Index (table 1a)

A Price index reflects the aggregated performance of the underlying index constituents based upon the price value of the shares only. It does not include dividend payments.

Return Index (table 1b)

A Return index reflects the aggregated performance of the underlying index constituents based upon the price value of the shares plus dividend payments.

Traded Index (table 1c)

Traded indices can be Price or Return indices; the index value is the basis for options, futures, exchange traded funds and other derivatives. These indices include the most liquid shares traded in the Stock Exchange and are generally free-float weighted.

Specialised market/segment Index in Equity (table 1d) and in Bonds (table 1e)

Specialised indices can be Price or Return indices; these indices represent markets/segments that are defined as having different listing rules than those of the main market, in particular lower requirements. These indices include the most liquid shares traded in the specialised market/segment of each Stock Exchange and some of them are free-float weighted.

Free Float

When calculating free-float, two types of shareholder are excluded; firstly shares held by interested parties (strategic holdings, directors, employee holdings etc.) and secondly shareholders of a significant portion of the issued shares.

Monthly high and low figures provided are based on all available index figures throughout the month, i.e. they include intra-day figures where available and not just end of day figures. Some Exchanges may use end-of-day figures in line with their policy.

Table 2: Market Capitalisation

A company's market capitalisation is the total number of issued shares of the company (including their several classes) multiplied by the respective share price at a given time. The total market capitalisation of an Exchange is the sum of the total market capitalisation of each domestic company and exclusively listed foreign companies included in all markets / segments of an Exchange.

The market capitalisation figures include:

- shares of domestic companies
- shares of foreign companies which are exclusively listed on an exchange, i.e. the foreign company is not listed on any other exchange
- common and preferred shares
- shares without voting rights when available
- investment /participation certificates when available

The market capitalisation figures exclude:

- collective investment funds
- rights, warrants, convertible instruments
- options, futures
- foreign listed shares other than exclusively listed ones
- companies whose only business goal is to hold shares of other listed companies
- companies admitted to trading (not admitted to listing).

Note that statistics of "Specialised Markets / Segments in Equity" (Table 6a) are included in these figures.

Market Capitalisation example:

Company	Share Class	Shares	Price	Share Class Market Cap	Company Market Cap	Exchange Market Cap
Company A	Ordinary Shares	100	1	100	Included	
Company B	Ordinary Shares	100	2	200	Included	
Company B Total					300	300
Company C	Ordinary Shares	300	2	600	Included	
Company C	Warrants	100	2	200	Not included	
Company C Total					600	600
Company D	Ordinary Shares	100	1	100	Included	
Company D	Preference Shares	50	1	50	Included	
Company D Total					150	150
Company E (Foreign and listed on more than on exchange)	Ordinary Shares	100	3	300	Included	Not included as foreign and listed on more than one exchange
Company E Total					300	
Company F (Foreign and not listed on more than one exchange)	Ordinary Shares	100	4	400	Included	
Company F Total					400	400
Total Exchange Market Cap						1450

Exchanges that are part of a large international group (e.g. NYSE Euronext, NASDAQ OMX, etc.) calculate market capitalisation figures based on the underlying listed companies of all their European countries of incorporation. Thus double counting is excluded.

Tables 3a & 3b: Listed Companies and Investment Flows

Table 3a, Listed Companies and **Table 3b**, Investments Flows include all market and segments and exclude ETFs, Investment trusts, Listed Unit Trusts, UCITS and market transfers. Only those companies admitted to listing are included in these tables.

Note that statistics of “Specialised Markets / Segments in Equity” (Table 6a) are included in these figures.

Table 3a: Listed Companies

Number of new companies listed through an IPO

The number of companies (split between domestic and foreign) whose shares were admitted to listing during the period through an offer of subscription and/or sale of shares (IPO). A company with several classes of shares is counted just once. A company is considered foreign when it is incorporated in a country other than that where the exchange is located. A company is considered domestic when it is incorporated in the same country as where the exchange is located (with the above mentioned exception for foreign securities with exclusive listing).

Number of other new companies listed

The number of companies (split between domestic and foreign) whose shares were admitted to listing during the period through a procedure different than an IPO (i.e. splits, mergers, or having already floated shares). A company with several classes of shares is counted just once. A company is considered foreign when it is incorporated in a country other than that where the exchange is located. A company is considered domestic when it is incorporated in the same country as where the exchange is located (with the above mentioned exception for foreign securities with exclusive listing).

Number of companies with listed shares

The total number of companies (split between domestic and foreign), whose shares are listed on a stock market at the end of the period. A company with several classes of shares is counted just once. A company is considered foreign when it is incorporated in a country other than that where the exchange is located. A company is considered domestic when it is incorporated in the same country as where the exchange is located (with the above mentioned exception for foreign securities with exclusive listing).

Listed Companies example:

Company	Date of listing	New Companies Domestic (IPO)	New Companies Foreign (IPO)	Other New Companies Domestic	Other New Companies Foreign	Domestic Companies with listed shares	Foreign Companies with listed shares
Domestic Company A Ordinary Shares Preference Shares	Within the last month	1				1	
Domestic Company B Ordinary Shares Preference Shares	Prior to the last month					1	
Foreign Company A Ordinary Shares Preference Shares	Within the last month				1		1
Foreign Company B Ordinary Shares	Prior to the last month						1
Domestic / Foreign Total		1			1	2	2
Grand Total		1		1		4	

Table 3b: Investments flows

Investment Flows channelled through the Exchange

It represents a proxy of the financing capacity of the stock market. The aggregated value of money raised on the primary market with offer of domestic shares and exclusive traded foreign shares (already issued or newly issued) in the period. Primary market operations - representing new funds for companies or providing money to former shareholders - are placed through rights issues for a capital increase, initial or secondary public offers, and placements of newly or already issued shares via underwriters/banks or other ways. The figure is calculated by multiplying the number of shares that were placed by the offer price or the first price of the new shares in the market when the offer price is not available.

Only the companies **admitted to listing** are included in FESE Statistics. Companies admitted to listing in Exchange A and **admitted to trading** in Exchange B are not included in the statistics of exchange B (see definition for further information on admitted to listing and admitted to trading).

The aggregate figure for **Investment flows channelled through the Exchange** comes from three origins:

- **IPOs:** Money raised by New Companies through IPOs of new and already listed shares. See definition for IPO in this document.
- **New Companies (Non-IPO):** Money raised by New Companies that do not fall under IPO definition, through offerings of new and/or already listed shares.
- **Already listed companies:** Money raised by Already Listed Companies through rights issues, through offerings of new and already listed shares via public offerings or underwriters/banks or other ways that involve capital increases.

The new detailed definitions are available [here](#).

In order to provide the users of statistics with additional info about investment flows representing new funds for companies or providing money to former shareholders during the period, an additional breakdown with aggregated figures is provided in table 3b between **Newly Issued Shares Total** (new funds for companies) and **Already Issued Shares Total** (money to former shareholders)

Tables 4a, 4b, 4c, 4d & 4e: Value of Equity Trading

Share trading value (EUR million) (turnover) is the total number of shares traded multiplied by their respective prices. The number of trades represents the actual number of transactions which have occurred during the period on the relevant Exchange. All trading figures (value and number of transactions) are single counted¹. Companies admitted to listing and admitted to trading are included in these tables.

Equity trading data is represented in three separate tables, domestic, foreign and year to date total. Figures are further broken down by the mechanism by which the transaction occurred, i.e. on an electronic order book or as an off-electronic order book transaction² or as a dark pool transaction. All three categories are mutually exclusive.

Electronic order book trading tables also display more granular data. Details about scheduled opening auction, scheduled closing auction, scheduled intraday auction, continuous trading and miscellaneous (unscheduled auctions) are available on tables 4a2, 4b2, 4c2, 4d2 and 4e2.

Under domestic equity trading, the turnover velocity³ is included.

Note that transactions in “Specialised Markets / Segments in Equity” (Table 6a) are included in these figures.

Equity trading example:

Trade	Buyer	Seller	Platform	Shares	Price	Electronic Order Book Transactions		Off-Electronic Order Book Transactions	
						Turnover	Trades	Turnover	Trades
A	Member A	Member B	Order Book	100	1	100	1		
B	Member A	Member B	Bi-lateral negotiation	20	2			40	1
C	Member A	Non - Member	Bi-lateral negotiation	30	3			90	1
D	Member B	Member A	Order Book	400	1	400	1		
E	Member B	Member A	Bi-lateral negotiation	50	1			50	1
F	Member B	Non - Member	Bi-lateral negotiation	60	1			60	1
Total						500	2	240	4

¹ See Single counting methodology in section Definitions.

² See Electronic Order Book ,Off-Electronic Order Book and Dark Pool Trading methodology in section Definitions.

³ See turnover velocity methodology in section Definitions.

Table 5: Top 5 Most Traded Shares

This table represents for each Exchange, the top five companies for the month based on the value of order-book share trading.

Top 5 Most Traded Shares example:

Exchange X	Order-book Turnover	Order-book Turnover %
<i>Company A</i>	<i>1000</i>	<i>19.23%</i>
<i>Company B</i>	<i>900</i>	<i>17.31%</i>
<i>Company C</i>	<i>800</i>	<i>15.38%</i>
<i>Company D</i>	<i>700</i>	<i>13.46%</i>
<i>Company E</i>	<i>600</i>	<i>11.54%</i>
Company F	500	9.62%
Company G	400	7.69%
Company H	300	5.77%
Total	5200	100.00%

From the above table it is clear that Company A to Company E in red italics are the top five companies for the period based on the value of order-book share trading.

Tables 6a, 6b, 6c & 6d: Specialised Markets / Segments

Specialised Markets/Segments contains aggregated data on markets / segments with listing rules different than those of the Exchanges' Official List/Main Market. Multilateral Trading Facilities (MTFs) managed by FESE members are included under this category. For equities, companies admitted to listing and exclusively listed foreign companies are included under the headlines Listed Companies and Market Capitalisation. The equity trading values include as well companies admitted to trading.

Tables 6a-b are a sub-set of the figures which are in Tables 2, 3 and 4.

Tables 6c-d are a sub-set of the figures which are in Tables 10 and 11.

Tables 7a & 7b: Securitised Derivatives

A securitised derivatives product is a tradable financial instrument designed to meet specific investor needs and to respond to different investment strategies, by incorporating special, non-standard features.

These products are in general used for capital protection, hedging against exposure to national or foreign equities, indices variations, commodity and currencies prices, arbitrage strategies, directional trading etc. Each securitised derivatives product has its own characteristics. They are generally issued by intermediaries different from the issuer of the underlying financial instruments.

Securitised derivatives products include different types of instruments such as (but not limited to) covered warrants and certificates.

- **Covered warrants** incorporate an option to buy or sell other financial instruments; according to their features, may be distinguished between plain vanilla (underlying represented by a single product) and structured/exotic (more complex products whose underlying is represented by a basket of products, and/or incorporating combinations of call and/or put and/or exotic options). The underlying assets can be represented by equities, bonds, indices, currencies and commodities. In most cases covered warrants lead to a cash settlement, without the physical delivery of the underlying financial instruments.
- **Certificates** track the performance of an underlying asset, often with a leverage effect (those without leverage being defined “investment certificates”). They provide the investor the opportunity to spread risk with moderate capital and administration costs, thus making possible the investment in foreign or largely diversified assets.

Trading statistics for securitised derivatives are presented in a manner comparable to the trading statistics for equities in Tables 4a, 4b and 4c.

Other statistics provided in Table 7a include:

- **Newly Listed End of Month (EoM)** details the number of securitised derivatives which were admitted to listing during the month.
- **Listed End of Month (EoM)** details the total number of securitised derivatives which were listed at the end of the month.

Tables 8a & 8b: Exchange Traded Funds (ETFs)

ETFs are portfolio investment products that are admitted to listing or trading on a regulated Exchange. An ETF provides investors with exposure to a diversified basket of shares or other financial instruments. ETFs aim to replicate the performance of a specific index; this index can be a blue chip, a regional, or a sector index. The index type is not just limited to shares and may include bond indices and other types of sophisticated index.

ETFs are traded in the same way as any other share.

These instruments can be used by investors as a hedging tool or as an investment product.

Trading statistics for Exchange Traded Funds presented in the manual are presented in a manner comparable to the trading statistics for equities in Tables 4a, 4b and 4c.

Other statistics provided in Table 8a include:

- Newly Listed End of Month (EoM) details the number of Exchange Traded Funds which were admitted to listing during the month.
- Listed End of Month (EoM) details the total number of Exchange Traded Funds which were listed at the end of the month.

Tables 9a & 9b: Investment Funds, Listed Unit Trusts, UCITs

UCITs are collective funds managed by an investment trust company (a company established with the purpose of investing in other companies) or a management team. UCITs, listed unit trusts, closed-end funds and investment trusts are all different forms of collective investment, depending on a country's legislation.

Trading statistics for “Investment Funds, Listed Unit Trusts, UCITs” presented in the manual are presented in a manner comparable to the trading statistics for equities in Tables 4a, 4b and 4c.

Other statistics provided in Table 9a include:

- Newly Listed End of Month (EoM) details the number of “Investment Funds, Listed Unit Trusts, UCITs” which were admitted to listing during the month.
- Listed End of Month (EoM) details the total number of “Investment Funds, Listed Unit Trusts, UCITs” which were listed at the end of the month.

Tables 10a, 10b, 10c, 10d, & 10e: Bond Turnover

Bonds are fixed income financial instruments, issued by Governments, local authorities and State-owned or private organisations. They may be listed or traded in one or several exchanges, and ensure predetermined levels of returns in the form of interest rate. Interest rates may remain fixed throughout the bond's life or vary according to the bond's terms of listing.

Bond trading value (turnover) is the total number of bonds traded, multiplied by their respective matching prices (figures supplied in the statistics of the FESE are based on the real market value of transactions and not the nominal value). The number of trades represents the actual number of transactions, which have occurred during the period. All trading figures are single counted.

Bond Turnover example:

Bond Financial Instrument	Price (in percentage)	Nominal value	Bond Turnover
A	95'5	500,000,000	478,500,000

Bond trading data is represented in three separate tables: domestic public sector, domestic non-public sector and international. Figures are further broken down by their respective sub-category (which are specified in the "Table 11: Listed Bonds"), and by the mechanism by which the transaction occurred, i.e. on an electronic order book or as an off-electronic order book transaction.

Electronic Order Book Transactions

This contains all transfers of ownership by way of trades automatically executed through the Exchanges' electronic order book. Orders are placed by Exchange members / intermediaries. Orders are usually matched on a price / time priority basis.

Off-Electronic Order Book Transactions

These figures are all other transfers of ownership by way of trades executed away from the electronic order book and involving at least one member / intermediary of an Exchange. These trades are bilateral negotiations that are not exposed to the market until after the trade is completed. They can be executed in a number of ways - including floor trading and special trading platforms, telephone trading or other structures and are reported by the Exchange members. To be included in the statistical reporting, this activity must generate revenues to the exchange and/or managed by a reporting system organized by the Exchange.

Trading statistics for Bonds presented in the manual are presented in a manner comparable to the trading statistics for equities in Tables 4a.

Note that transactions in "Specialised Markets / Segments in Bonds" (Table 6c) are included in these figures.

Tables 11a & 11b: Listed Bonds

This table consolidates all segments of the bonds markets of the exchanges. It includes:

- **Domestic public sector**, include Government / State owned organisations bonds and bills, State-related institutions whose instruments are guaranteed by the State and municipal bonds. Split into:
 - **Sovereign** – bond issued by the national government,
 - **Sub-sovereign** – bonds issued by a country’s non-central government, subset of the central government (e.g. federal states, municipalities etc.) and by agencies and organizations established by a country's central or non-central governments. issued
- **Domestic non-public sector**, include corporate bonds, bonds issued by domestic banks, other financial institutions or corporations of the private sector. . Split into:
 - **Financials** - Bonds issued by banks, insurances, real estates or financial services companies (including issuers of structured finance and special purpose vehicles).
 - **Ex Financials** - Bonds issued by corporations of the private sector, excluding ‘financials’.
- **International**, include bonds issued by non-resident institutions (Foreign governments, banks, financial institutions, corporations) and supranational organisations (EIB, EBRD, World Bank, etc.). They also include eurobonds (bonds issued under a law of a State different from the one issuer and placed in a foreign country).
- **Supranational** - Bonds issued by multilateral, international organizations established for the advancement of regional economic and social development (e.g. World Bank, EIB). They are outside or beyond the authority or jurisdiction of the national government. - This applies to entities that are formed by two or more central government through international treaties.
- **New bonds listed in the month:** The aggregated number of bonds (all segments Domestic public / non-public and international) admitted to listing during the month.
- **Money Raised:** The corresponding value of newly listed bonds in an exchange and tap issues in already listed bonds.

Note that transactions in “Specialised Markets / Segments in Bonds” (Table 6c) are included in these figures.

Table 12: Exchange Rates

This table details the euro (€) conversion rates of the domestic currency of each exchange. It includes currency, conversion rate and the percentage change on the previous month.

The table below shows the source and type of exchange rate used:

Exchange	Currency	Source of exchange rate	Type of exchange rate
Borsa Istanbul	Turkish Lira	National Central Bank	Daily
Bucharest Stock Exchange	Romanian Leu	National Central Bank	Daily
Budapest Stock Exchange	Hungarian forint	National Central Bank	End of Month
Oslo Børs	Norwegian krone	National Central Bank	Interbank market calculation ³
Prague Stock Exchange	Czech koruna	National Central Bank	End of Month
Warsaw Stock Exchange	Polish zloty	National Central Bank	Daily
SWX Swiss Exchange	Swiss franc	Telekurs ¹	Daily
OMX Nordic Exchange Iceland	Icelandic krona	Bids from Participants ³	Daily
OMX Nordic Exchange Copenhagen	Danish krone	Bids from Participants ³	Daily
OMX Nordic Exchange Stockholm	Swedish krona	Bids from Participants ³	Daily

¹ Middle point buying selling.

² Proprietary fixing based on early morning FX feed from Telekurs and stored into SWX Swiss Exchange trading systems as standard parameter

³ Bids from Participants: Den Danske Bank Consensus, Nordea Bank AB (publ), Skandinaviska Enskilda Banken AB, Svenska Handelsbanken AB, Swedbank AB. Fixed Currency Calculated by OMX Nordic Exchange.

⁴ Mid-point between buying and selling rates in the interbank market each day

Note well that as of January 2010, market capitalisation is calculated with the end-of-month exchange rate and turnover calculations are calculated with the daily average exchange rate.

Table 13a & 13b: Stock / Index Options and Futures Turnover

These tables provide information on standardised derivatives, Options and Futures, which have stocks / equity indices as underlying value.

Options

An option is an instrument, which allows investors to buy or sell an underlying asset (commodity or financial instrument) at a pre-determined price the strike price of the option, and terms during a specified period, the lifetime of the option. Options can be exercised either solely on the expiration day (European type) or at any time during their lifetime (American type). After the end of its lifetime the option has no value, as it has expired. Options are also distinguished into Call (providing the right to buy) or Put (sell) options.

In an options transaction agreement, investors are equally distinguished into holders (i.e. buyers) and writers (i.e. sellers). Holders have the right but not the obligation (to sell or buy) while writers have the obligation only (to sell or buy). Therefore, call options allow holders to buy and oblige writers to sell, the underlying asset, while put options allow holders to sell and writers to buy the underlying asset.

Options are distinguished according to the underlying asset with the most common being:

- **Stock Options** entitle holders with the right-but not the obligation- to buy or sell shares of a stock at a predetermined price and terms. Stock options are settled by physical delivery of underlying stocks.
- **Index Options** entitle holders with the right-but not the obligation- to buy or sell the value that corresponds to an index in accordance with the option's specifications. The value that corresponds to the index is the underlying value of the index option and is the cash equivalent value of the index (also called the index amount). Index options are settled cash.

Futures

A futures contract is a standardised tradable contract that provides the terms of a transaction on underlying assets (commodity or financial instrument) at a specified date in the future at a predetermined price.

- **A Stock Futures contract** is a standardised contract for the purchase and delivery of stocks in a future date. The buyer of a futures contract is obliged to buy a specified number of shares from a seller, at a specified future date, at an agreed price (the future's contract price). Correspondingly, the seller is also obliged to accept and complete the transaction, i.e. deliver the stock at the agreed price at the specified date. According to the market rules, stock futures contracts are settled by the physical delivery of underlying stocks and settled cash (i.e. the difference between the value of the underlying stock at the expiration and the price of futures is credited / debited to the counterparties).

- **An Index Futures contract** is a standardised contract that enables a buyer and a seller to exchange, in a specified date in the future at a predetermined price, an amount based on the value of an index (i.e. a stock index). Stock index futures are settled cash: the buyer is credited the difference between the value of the index at the expiration date and the futures contract price. Should the expiration index value being less than the futures contract price, the seller is credited and the buyer is debited the difference.

Key characteristics of an Options and a Futures transaction could be summarised in the following table:

Basic characteristics	Options contract transaction	Futures contract transaction
Agreement today	Yes	Yes
Delivery and payment in the future	Yes	Yes
Obligation to complete the transaction	One of the parties may choose to complete the transaction	Both parties have the obligation to complete the transaction

The information provided by these tables consists of:

- **Contracts traded:** This is the number of standardised **units of trading**, as defined by an exchange. The standardised units of trading are part of the products specifications and as such they are individual for each product.
- **Notional Turnover:** It is an approximate measure of the value of the number of contracts traded expressed with reference to the underlying, enabling comparison between cash and derivatives trading and among different derivatives products. It is computed
 - for futures, as the product of the number of contracts traded by the price by the value of an index point (in the case for index futures) or by the size (number of underlying shares) in the case for stock futures; alternatively, the value of the underlying asset may be used in place of the futures price;
 - for options, as the product of number of contracts traded by strike price and by the value of an index point (index options) or by the size (number of underlying shares) of the contract (stock options); alternatively, it may be computed using the value of the underlying asset.
- **Open Interest:** Number of derivatives contracts (futures and options) outstanding at a given time (close of trading at the last trading day of the month). It may be computed on a net or gross basis, according to the way the opening/closing of position by the same trader is managed at the clearing level. This is usually used in analysis of liquidity and market size.

Tables 14a &14b: Interest Rate Options and Futures Turnover

These tables consolidate Options and Futures turnover of interest rate derivatives products.

Interest Rate Options

Interest rate options entitle holders with the right -but not the obligation- to buy or sell a determined amount of the underlying reference at a predetermined price (strike price) and terms. In the case of interest rate options, the value of the underlying reference (for example a bond or a currency) is determined by the level of a specific, depending upon the extent of the term (long or short term) interest rate. A short-term interest rate refers to maturity periods equal or shorter to 12 months while long term interest rates refer to periods exceeding 12 months (treasury bonds, corporate bonds, Eurobonds etc.).

Interest Rate Futures Contracts

The value of the underlying reference of an interest rate futures contract is determined by the level of a specific, depending upon the extent of the term (long or short term) interest rate. The buyer of an interest rate futures contract is obliged to buy a determined amount of the contracts underlined reference from a seller, at a specified future date, at an agreed price, the future's contract price. Correspondingly, the seller of the underlying reference is obliged to complete the transaction and deliver the underlying reference at the agreed price at the specified date.

The information provided by the tables consists of:

- **Contracts traded:** This is the number of standardised **units of trading**; the amount of capital that may vary from class to class or from product to product, as defined by the Exchange. The standardised units of trading are part of the products specifications and as such they are individual for each product.
- **Notional Turnover:** It consists of the number of **contracts traded** multiplied by the nominal value of the underlying, trading unit/contract size (for futures) or multiplied by the strike price (for options).
- **Open Interest:** Number of derivatives contracts (futures and options) outstanding at a given time (close of trading at the last trading day of the month). It may be computed on a net or gross basis, according to the way the opening/closing of position is managed at the clearing level.

Tables 15a & 15b: Commodities Derivatives Turnover

These tables consolidate Options and Futures turnover of derivatives products, which have commodity contracts as underlying value.

Commodity Options entitle holders with the right -but not the obligation- to buy or sell a determined amount of commodities at a predetermined price and terms. Commodity options are settled by physical delivery and they can be based on a wide range of commodities

Commodity Futures contracts are contracts for the purchase and delivery of commodities. The buyer is obliged to buy a determined amount of commodities from a seller, at a specified future date, at an agreed price (the future's contract price). Correspondingly, the seller is obliged to complete the transaction, i.e. deliver the commodities at the agreed price at the specified date. Commodity Futures contracts are settled by physical delivery and they can be based on a wide range of commodities from agricultural to mining products.

The information provided by the tables consists of:

- **Contracts traded:** This is the number of standardised units of trading denoted by the amount of commodities; it may vary from class to class or from product to product, as defined by the Exchange.
- **Notional Turnover:** It consists of the number of contracts traded multiplied by the commodities underlying amount and value. The contracts' underlying value is calculated by multiplying the number of contracts times the market price, times the contract's size (multiplier). It is an approximate measure of the underlying value of the number of contracts traded.
- **Open Interest:** Number of commodities derivatives contracts outstanding at a given time (close of trading at the last trading day of the month). It may be computed on a net or gross basis, according to the way the opening/closing of position by the same trader is managed at the clearing level. This is usually used in analysis of liquidity and market size.

Tables 16: Trading Participants

Tables 16 represents trading participants (clearing and settlement members are excluded). Trading participants include dealers, brokers, broker-dealers and individuals who acquired the status of exchange member or equivalent and trade on the exchange through direct access to the trading system (either through native exchange connectivity or through connectivity from application service providers).

The table is split into new trading participants in the current month and into total number of trading participants in the exchange.

A FESE member operating more than one exchange/market but reporting as one operator to FESE should not multiple count legal entities/participants in their figures in case it is the same legal entity. For instance, if the same legal entities/participant has access to one or more exchange/market that the member is reporting for it should be counted as one trading participant.

The information provided by this table consists of:

- Equity: Number of intermediaries trading equity in the exchange.
- Bonds: Number of intermediaries trading bonds in the exchange.
- Derivatives: Number of intermediaries trading derivatives in the exchange.

Note that each category is independent from the others. In this table there are not cumulative figures.

Exchange example:

Trading member A in equity which belongs to G	1
Trading member B in equity which belongs to G	1
Trading member C in equity which belongs to H	1
Number of Trading Participants in equity	3

Contacts

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