



Price formation and market data

An economic analysis of
equity trading in Europe

FESE Convention, Dublin

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Overview

1 Price formation

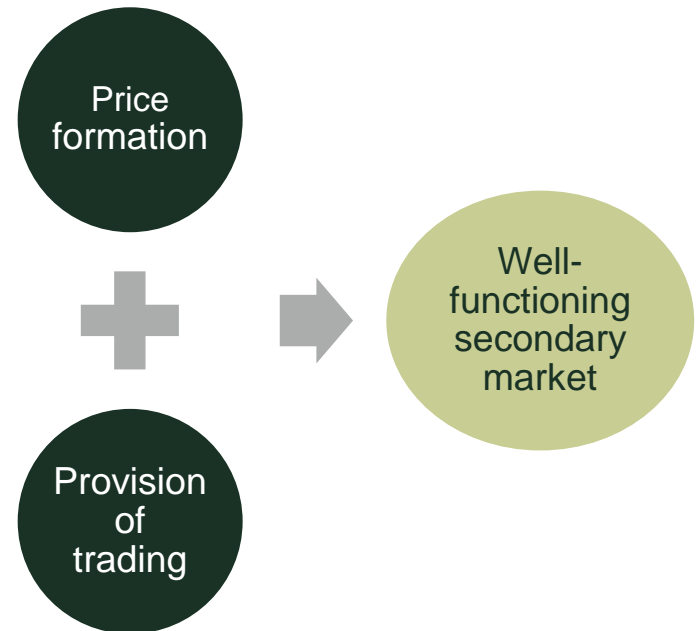
2 MiFID and the market design for equity trading

3 Market data

Price formation

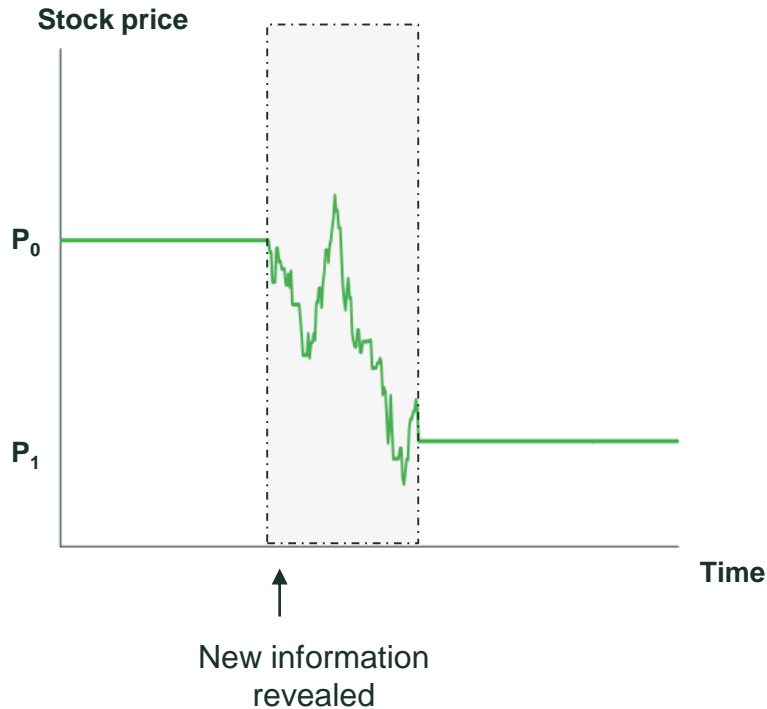
Core functions of a stock exchange

- stock exchanges create a market in equity instruments
- provision of liquidity/trading
 - enabling traders to easily buy or sell assets
- price formation
 - determining the price of an asset in the market place so participants can make well-informed commercial decisions
 - information-gathering process

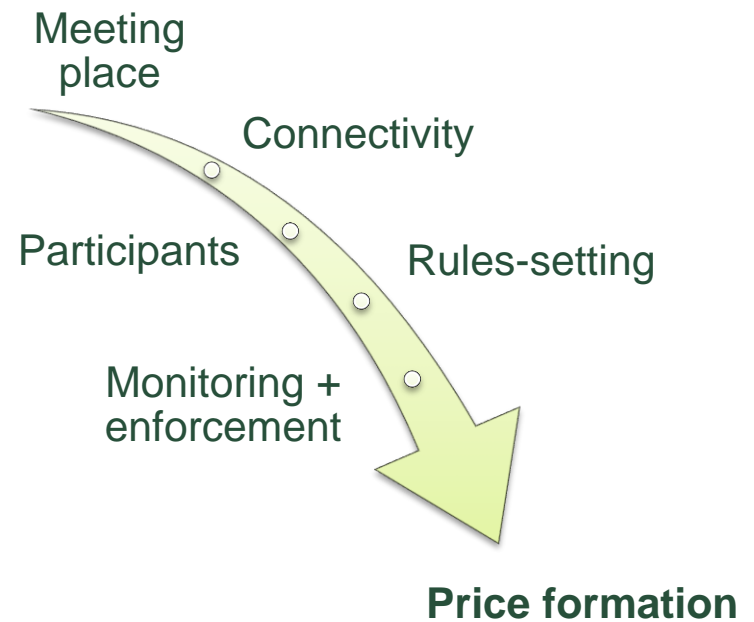


Price formation

The price formation process



Exchange activities facilitate the price formation process



Source: Oxera.

Price formation

Benefits of price formation



Source: Oxera.

Overview

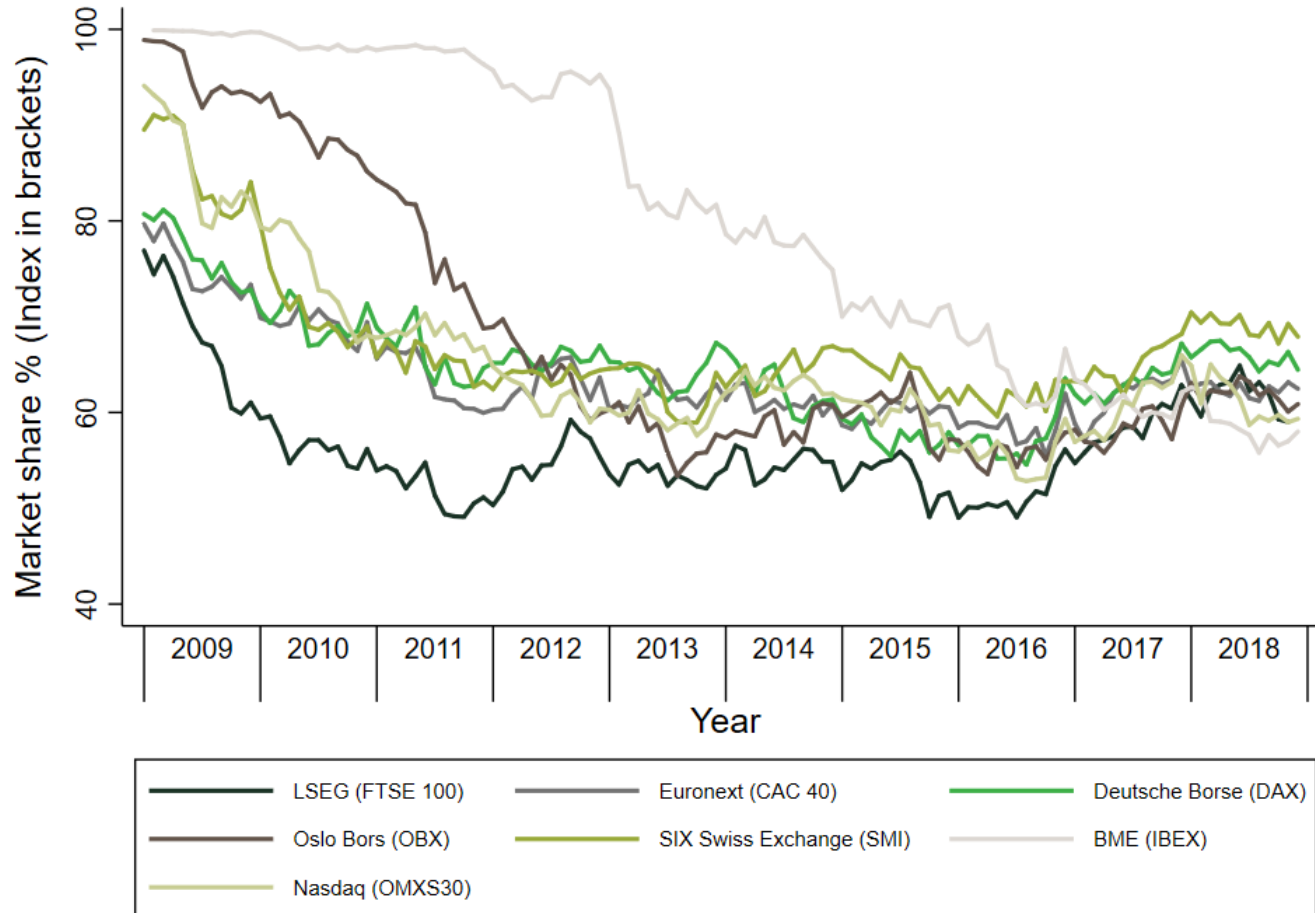
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MiFID and market design of equity trading

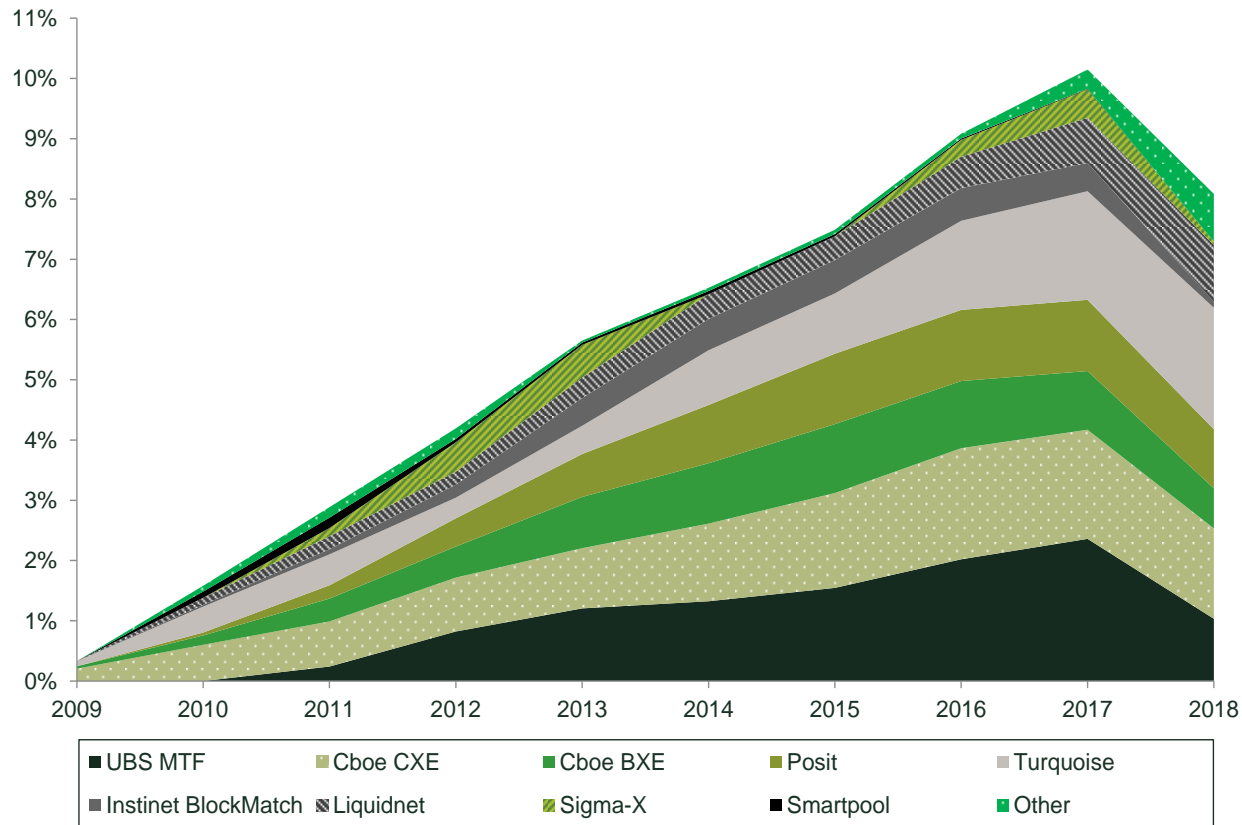
Decline in share of equity trading on primary exchanges



Source: Cboe.

MiFID and market design of equity trading

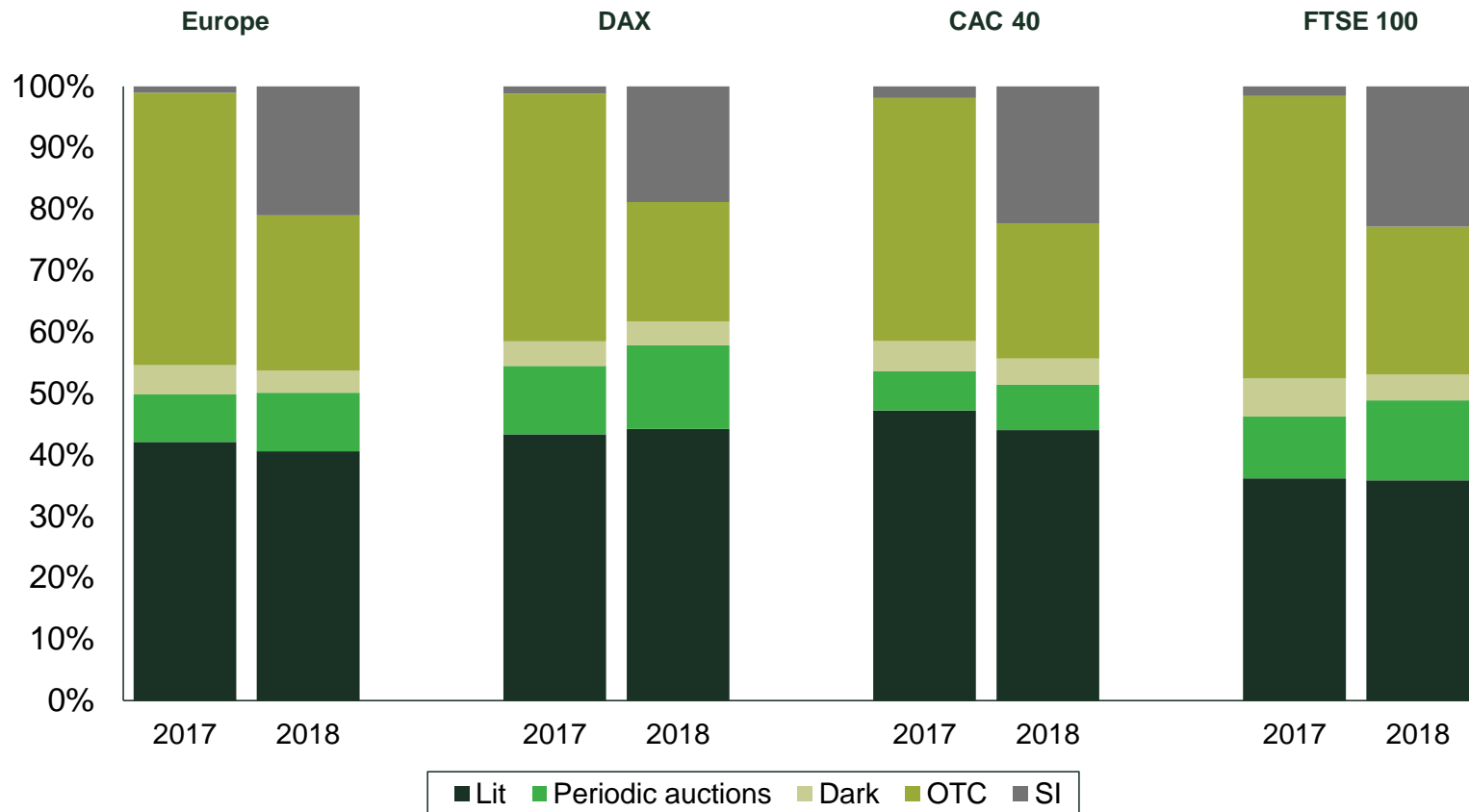
Growth in dark pool market share, 2009–18



Source: Oxera analysis of data from Petrescu, M. and Wedow, M. (2017), 'Dark pools in European equity markets: emergence, competition and implications', ECB Occasional Paper Series No. 193, Cboe and Fidessa.

MiFID and market design of equity trading

Rise in periodic auction and SI trading following MiFID II



Source: Fidessa Fragmentation Index.

MiFID and market design of equity trading

- MiFID I has resulted in greater choice and lower trading costs
- key trends over the last ten years have been:
 - falling share of equity trading on primary exchanges
 - growth in dark trading (on dark venues and OTC)
 - growth in algorithmic and high-frequency trading
- MiFID II had a focus on improving transparency and promoting lit trading
- important to maintain quality of price formation

Overview

1 Price formation

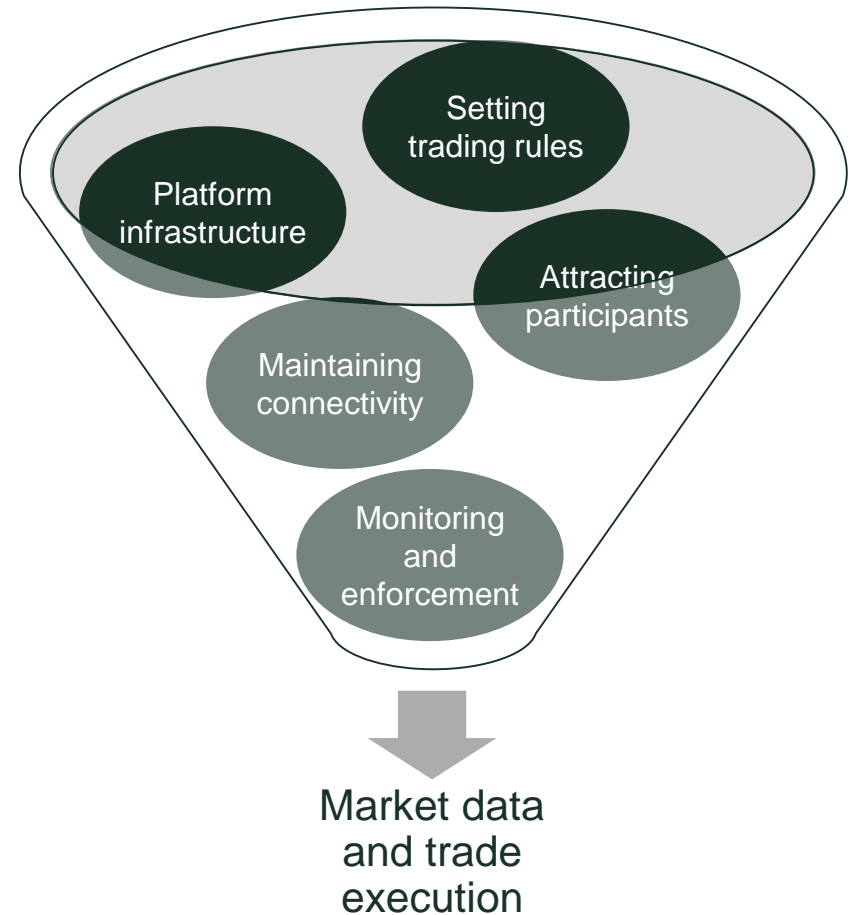
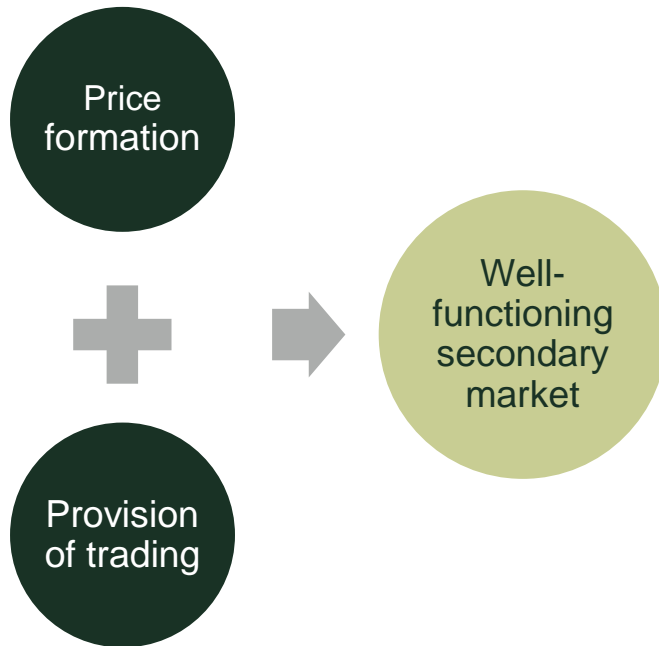
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Market data

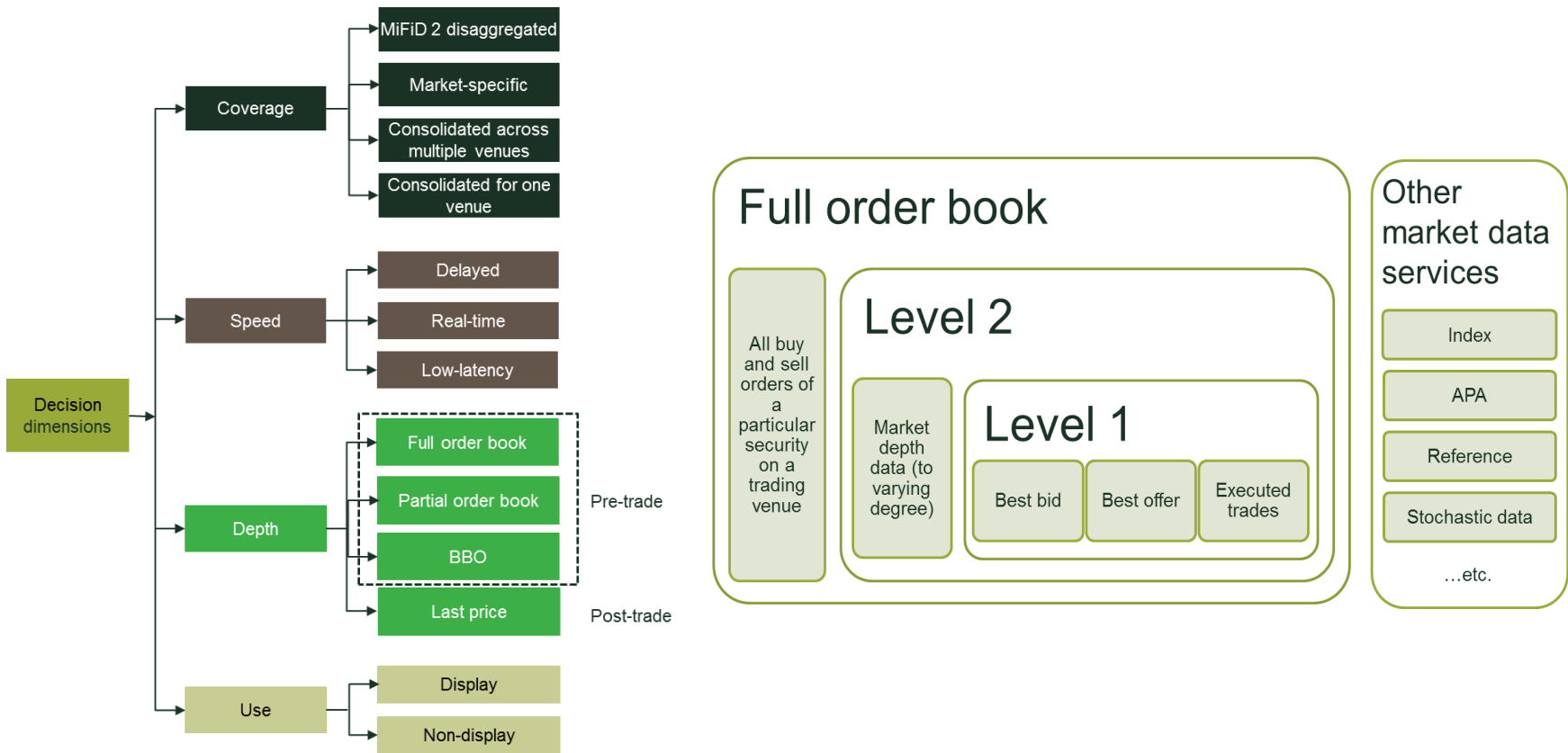
Price formation and trade execution as joint products

- trade execution and market data are joint products → efficient to generate revenues through fees from both products



Market data

Data products provided by stock exchanges



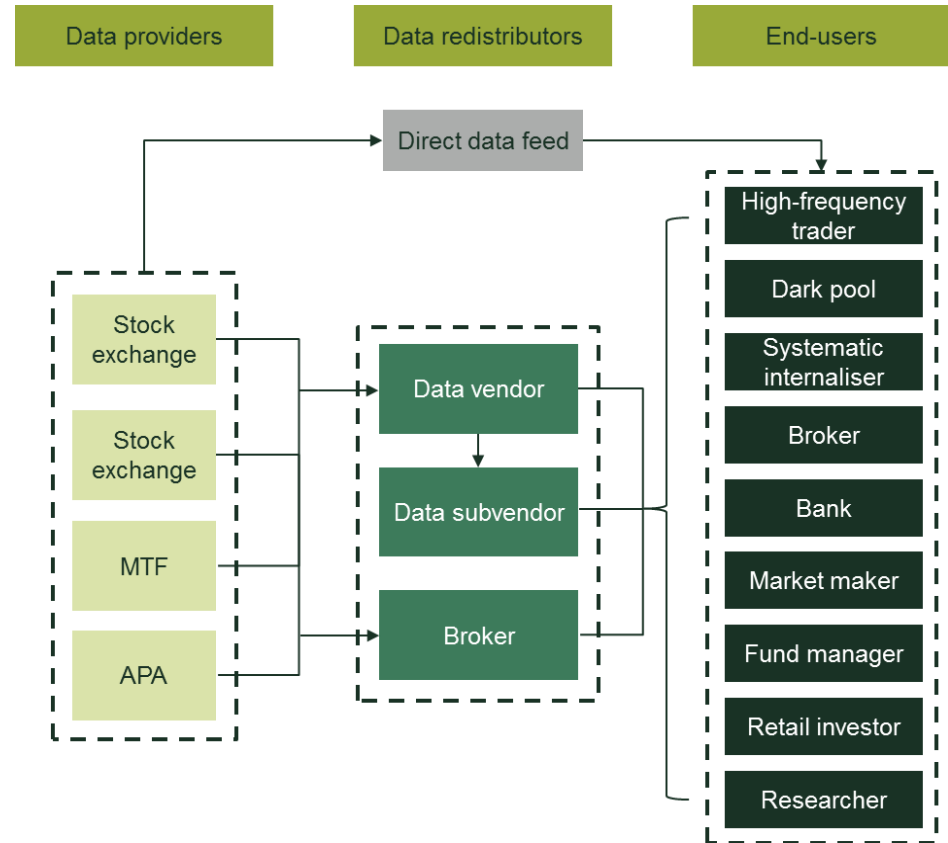
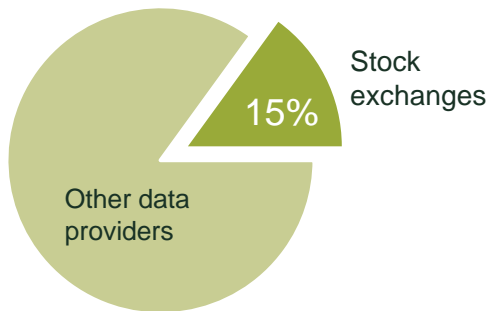
BBO = Best Bid and Offer; APA = approved publication arrangement.

Source: Oxera.

Market data

Value chain overview

- data redistributors
 - aggregation of data from different providers
 - value-added services
- end-users
 - various profiles
- market data offered by stock exchanges accounts for ~15% of the value chain

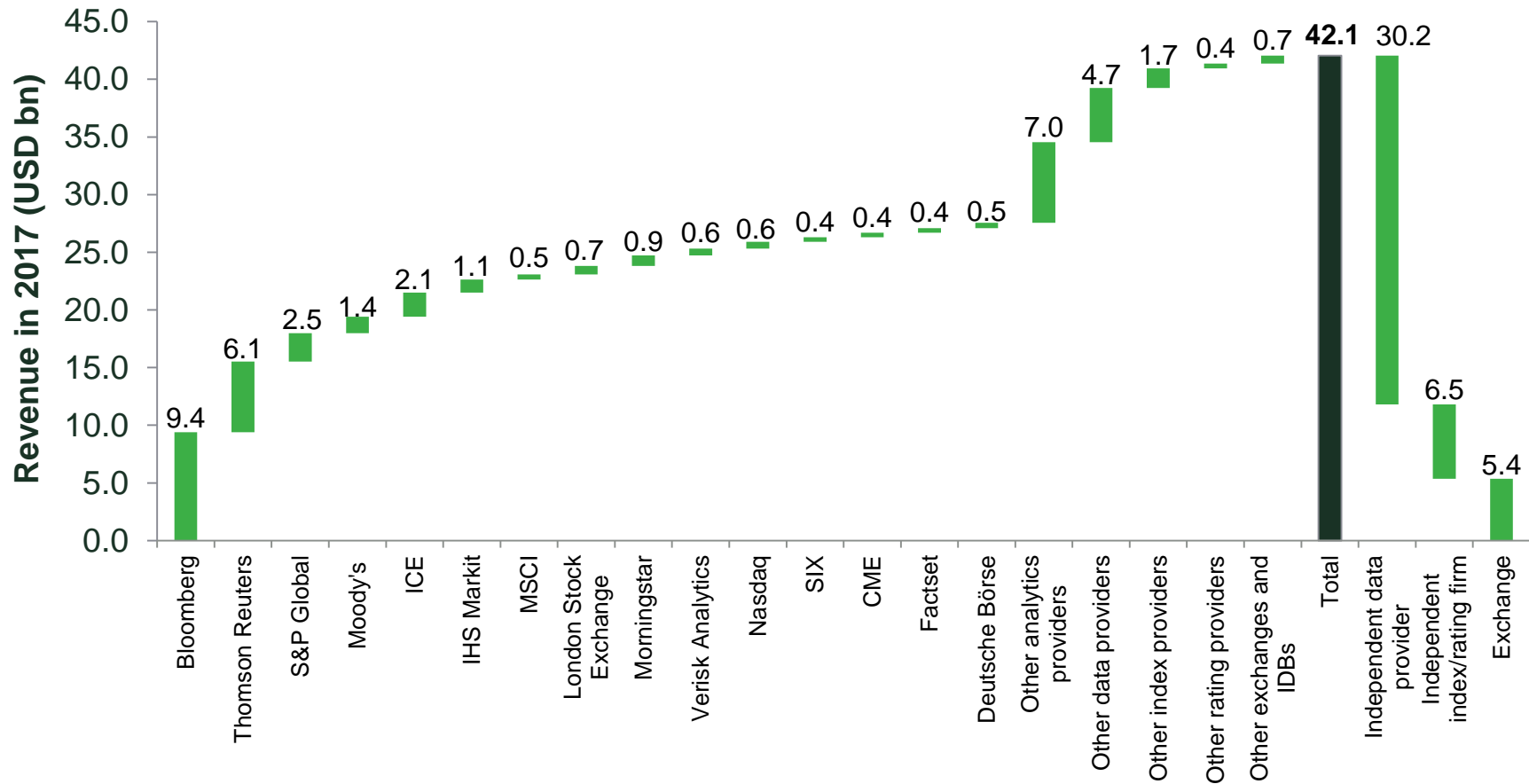


MTF = multilateral trading facility; APA = approved publication arrangement.

Source: Oxera.

Market data

Value chain – global revenues, USD 2017

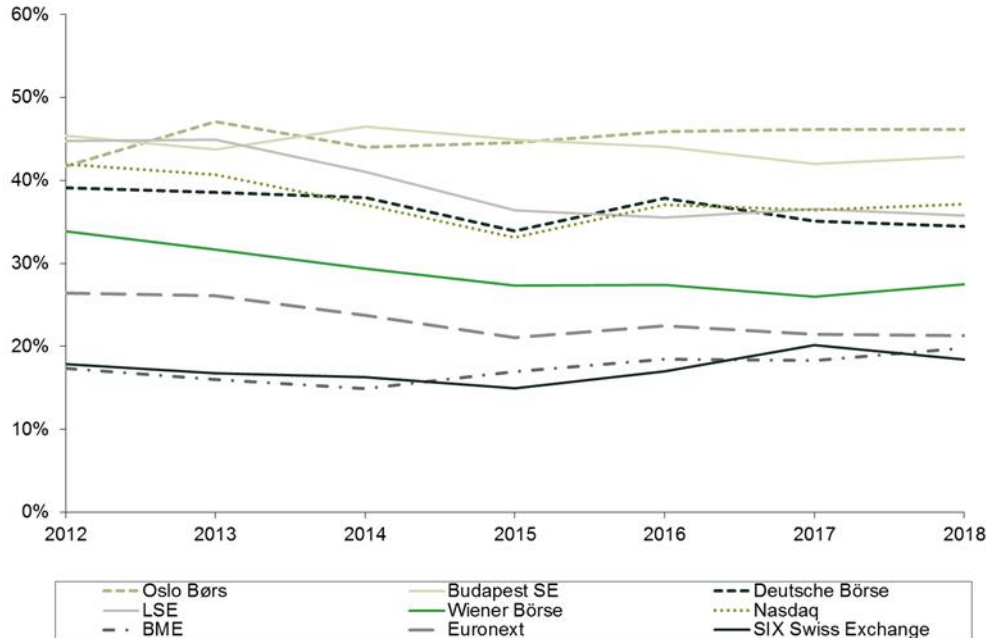


Note: This chart estimates the share of total global revenues for vendors offering data redistribution and data analytics services based on 2017 data in USD. This analysis includes data on all financial instruments – i.e. not just equity market data.

Source: Oxera analysis of annual reports of providers. The estimate for Bloomberg is sourced from Burton-Taylor International Consulting.

Market data

Percentage of exchange market data revenues, as share of total combined (trade + market data) revenues



Market data revenues as a share of total combined (trade and market data) revenues* have remained fairly stable, ranging from around 20% to 50% across exchanges in 2018 (31% on average)

$$* \text{ Ratio} = \frac{\text{revenue from market data}}{\text{total joint revenue from trade execution and market data}}$$

Note: The ratios for BME, Nasdaq and Budapest SE are based on equity-only figures. Wiener Börse, Deutsche Börse and Euronext ratios are cash markets only. Remaining stock exchanges are calculated using total revenues. Ratios are all calculated using revenue attributable to matching products. Luxembourg Stock Exchange is excluded from this analysis due to the very limited share of equity trading in its business model. 2018 data for Oslo Børs is indicative. 2018 data for other exchanges is provisional and unaudited.

Aggregate market data revenues were approximately €245m in 2018

Source: Oxera analysis of data provided directly by participating stock exchanges (London Stock Exchange data taken from annual reports).

Market data

Key messages

- market data offered by stock exchanges accounts for ~15% of a much longer value chain
- the share of revenues that comes from market data services (as a percentage of the total combined revenues from trade execution and market data) has been relatively stable over the past few years—on average around 30%. The ratio ranges between 20% and 50% across exchanges in Europe
- joint unit costs to end-investors were generally lower in 2018 than in 2012
- the costs to end-investors are small—aggregate market data revenues were approximately EUR 245m in 2018, which represents 0.003% of total assets under management

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