



European Securities and
Markets Authority

MiFID II/MiFIR Review Report No. 1

On the development in prices for pre- and post-trade data and on the consolidated tape for equity instruments



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APA	Approved Publication Arrangement
ARM	Approved Reporting Mechanism
CDR 2017/565	Commission Delegated Regulation (EU) 2017/565 on organisational requirements and operating conditions for investment firms and defined terms under MiFID II
CDR 2017/567	Commission Delegated Regulation (EU) 2017/567 on definitions, transparency, portfolio compression and supervisory measures on product intervention and positions
CMU	Capital Markets Union
CP	Consultation Paper
CQ	Consolidated Quote
CSA	Canadian Securities Administrators
CT	Consolidated Tape
CTA	Consolidated Tape Association
CTP	Consolidated Tape Provider
DRSP	Data Reporting Services Provider
EEA	European Economic Area
EC	European Commission
ETF	Exchange-traded fund
EU	European Union
ESMA	European Securities and Markets Authority
FIGI	Financial Instrument Global Identifier
FINRA	Financial Industry Regulatory Authority
FIRDS	Financial Instruments Reference Data System
FITRS	Financial Instruments Transparency System
IP	Information Processor
MiFID II	Markets in Financial Instruments Directive (recast) - Directive 2014/65 of the European Parliament and of the Council
MiFIR	Markets in Financial Instruments Regulation – Regulation 600/2014 of the European Parliament and of the Council
MMT	Market Model Typology
MTF	Multilateral Trading Facility
NCA	National Competent Authority
NI	National Instrument
OTC	Over-the-counter
OTF	Organised Trading Facility



Q&A	Question and answer
RCB	Reasonable Commercial Basis
Regulation NMS	Regulation National Market System
RTS	Regulatory Technical Standard
RTS 1	Commission Delegated Regulation (EU) 2017/587 on transparency requirements for trading venues and investment firms in respect of shares, depositary receipts, exchange-traded funds, certificates and other similar financial instruments and on transaction execution obligations in respect of certain shares on a trading venue or by a systematic internaliser
RTS 13	Commission Delegated Regulation (EU) 2017/571 on the authorisation, organisational requirements and the publication of transactions for DRSPs
RTS 14	Commission Delegated Regulation (EU) 2017/572 specifying the offering of pre- and post-trade data and the level of disaggregation of data.
RTS 27	Commission Delegated Regulation (EU) 2017/575 concerning the data to be published by execution venues on the quality of execution of transactions,
RTS 28	Commission Delegated Regulation (EU) 2017/576 for the annual publication by investment firms of information on the identity of execution venues and on the quality of execution
SDR	Swap data repository
SEC	Securities and Exchange Commission
SI	Systematic Internaliser
SIP	Securities Information Processor
SME	Small and Medium Enterprises
SMSG	Securities and Markets Stakeholder Group
UK	United Kingdom
US	United States of America
UTP	Unlisted Trading Privilege



1 Executive Summary

Reasons for publication

MiFID II/MiFIR provide for a number of review reports requiring the European Commission (EC), after consulting ESMA, to present a report to the European Parliament and the Council on various provisions. Following a public consultation this first review report covers the review provisions on the development in prices for pre- and post-trade transparency data from regulated markets, multilateral trading facilities (MTFs), organised trading facilities (OTFs), approved publication arrangements (APAs) and consolidated tape providers (CTPs) as well as the functioning of the consolidated tape (CT) for equity instruments as provided for in Articles 90(1)(g) and 90(2) of MiFID II and Article 52(7) of MiFIR. Since these mandates are linked, ESMA decided to cover them in one single review report. The review report builds upon the extensive feedback received from market participants representing data users, trading venues and data vendors and also integrates the advice received from the Securities and Markets Stakeholder Group (SMSG)

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Section 2 presents the scope of the issues covered in the review report: the development of prices for pre- and post-trade transparency data and the functioning of the CT. Section 3 presents ESMA's assessment and recommendations on the development of prices for market data and the application of the main MiFID II/MiFIR provisions aiming at reducing the cost of market data: the requirement to publish market data on a reasonable commercial basis (RCB), the requirement to provide market data in a disaggregated format, and the requirement to make market data available free of charge 15 minutes after publication.

Section 4 presents ESMA's assessment and recommendations of the functioning of the CT. In particular, section 4 analyses the reasons for the lack of an equity CT in today's environment, the availability, timeliness and quality of the current data offer for post-trade transparency data in equity markets and the risks of not having an equity CT. On the basis of this analysis, ESMA identifies potential success factors for establishing an equity CT. Furthermore, section 4 briefly assesses the impact of Brexit on establishing an equity CT.

Next Steps

This report is submitted to the European Commission and is expected to feed into the review report on development in prices for pre- and post-trade transparency data and on the CT for equity instruments to be presented by the European Commission to the European Parliament and Council.

In the area of market data, ESMA will start working on supervisory guidance on the application of the provision to provide market data on an RCB.

ESMA stands ready to provide technical advice on the legislative amendments necessary for establishing an equity CT as well as to launch a negotiated procedure for the appointment



of a CT as envisaged in MiFID II. ESMA wishes to highlight that any establishment of an equity CT will require a significant amount of time to put the necessary legislative framework, technical infrastructure and governance framework in place.

2 Introduction

1. MiFID II/MiFIR requires the EC, after consulting ESMA, to present reports to the European Parliament and the Council reviewing many provisions in MiFID II/MiFIR. This review report covers the following three mandates for reviewing the MiFID II/MiFIR provisions:

- Article 52(7) of MiFIR: the development in prices for pre- and post-trade transparency data from regulated markets, MTFs, OTFs, APAs and CTPs. The EC should present the report by 3 July 2020.
- Article 90(1)(g) of MiFID II: the development in prices for pre- and post-trade transparency data from regulated markets, MTFs, OTFs and APAs. The EC should present the report by 3 March 2020.
- Article 90(2) of MiFID II: the functioning of the CT for equity instruments. The EC should present the report by 3 September 2019.

2. Since these topics are linked, ESMA decided to cover them in one review report. Nevertheless, it is important to stress that even though there are interlinkages between market data prices and the potential establishment of a CT, ESMA's recommendations covering market data will not necessarily address issues identified around the CT, and vice versa. In particular, while the establishment of a CT may help addressing some of the issues identified in the area of market data, ESMA does not consider that it would be a sufficient measure on its own to resolve the issues with market data identified in this report. The report therefore sets out ESMA's assessment of and recommendations for the development in prices of market data and the CT separately.

3. ESMA engaged in a dialogue with the EC to agree on the timeline for delivering ESMA's advice. Due to uncertainties in the context of the United Kingdom's (UK) withdrawal from the EU and its implication on the landscape of entities providing pre- and post-trade market data, ESMA proposed to the EC to delay ESMA's delivery of the report on the CT for equity instruments to December 2019. To avoid splitting closely interconnected topics, ESMA is slightly anticipating the timeline for the delivery of the reports under Article 52(7) of MiFIR and 90(1)(g) of MiFID II to December 2019 meaning the report for market data is delivered ahead of schedule.

4. This report covers the assessment of the MiFID II/MiFIR provisions in the area of market data aiming at improving the quality and availability of market data and reducing costs for market participants when purchasing data as well as the provisions for the equity CT. Most notably, these provisions include:

- the obligation to make pre-trade and post-trade data available separately (Article 12 of MiFIR);
- the obligation to make pre- and post-trade data available on an RCB, to ensure non-discriminatory access to that data and to make available data free of charge 15 minutes after publication (Article 13 of MiFIR, and Articles 64 and 65 of MiFID II);



- the obligation for systematic internalisers (SIs) to make quotes public to other market participants on an RCB; and
- the requirements for the CT for equity instruments (Article 59-65 of MiFID II, in particular Article 65(1) of MiFID II)¹.

5. These provisions are further specified in implementing and delegating Regulations, most notably:

- Commission Delegated Regulation (EU) 2017/565 (CDR 2017/565) further specifies the data provision obligations for DRSPs (Articles 84-89);
- Commission Delegated Regulation (EU) 2017/567 (CDR 2017/567) further specifies the data provision obligations for trading venues and SIs (Articles 6-11);
- Commission Delegated Regulation (EU) 2017/572 (RTS 14) further specifying the offering of pre- and post-trade data and the level of disaggregation of data; and
- Commission Delegated Regulation (EU) 2017/571 (RTS 13) further specifying the authorisation, organisational requirements and the publication of transactions for data reporting services providers (in particular Articles 13,14, 15,19 and 20).

6. Furthermore, ESMA issued supervisory guidance on the market data provisions in the ESMA Q&A on MiFID transparency issues and the ESMA Q&A on market structure issues.

7. This review report includes feedback received from stakeholders to the CP on which ESMA consulted from 12 July to 6 September 2019. It incorporates responses received from trading venues and APAs on two ESMA questionnaires, the first one in summer 2018 and the second in summer 2019 as well as feedback from data users on the prices for market data. Finally, the review report takes into account advice received from the SMSG.

8. There remains significant uncertainty on the timing and conditions of Brexit. ESMA's assessment covers the EU28, i.e. including the UK. ESMA's reflections on the possible way forward to address deficiencies identified distinguish, where possible and necessary, between an EU28 scenario (i.e. before Brexit) and an EU27 scenario (i.e. after Brexit).

9. Section 3 of the review report assesses the developments in prices for pre- and post-trade transparency data, including the feedback received to the CP, and presents ESMA's assessment and recommendations. The section starts with a preliminary assessment of overall developments of prices for market data following the application of MiFID II/MiFIR before assessing the impact of the three main provisions in this area: 1) the requirement to provide market data on an RCB, including the possibility of replacing the current transparency plus approach by an alternative approach such as price regulation, 2) the requirement to provide disaggregated data, and 3) the provision to make market data available free of charge

¹ To be noted that the provisions on the CT will be moved to MiFIR following the ESAs review.



15 minutes after publication. Section 3 ends with an overview of ESMA's assessment and recommendations on the development of prices for pre- and post-trade transparency data.

10. Section 4 assesses the functioning of the equity CT, including the feedback received to the CP, and presents ESMA's assessment and recommendations. The section presents the applicable legal framework, assesses the reasons for the lack of the emergence of an equity CT so far and the availability and quality of post-trade information provided by existing commercial entities. Moreover, section 4 includes an assessment of the risks of not having an equity CT in the EU, presents key factors necessary for the successful establishment of a CT and discusses the potential impact of Brexit on a CT. Section 4 ends with an overview of ESMA's assessment and recommendations on the establishment of an equity CT.

3 Developments in prices for pre- and post-trade transparency data from regulated markets MTFs, OTFs and APAs

11. The discussion on the cost of market data in the EU has been very controversial for many years with opposing views expressed by trading venues selling such data and market data users buying market data.

12. Already back in 2010, when consulting on the review of MiFID I, the EC stressed that prices for market data in the Union were considered as being too high, in particular in comparison with the US, and should be brought down to a reasonable level. Contributions from stakeholders to that consultation, and to the general discussion on the prices for market data, ranged from banks and buy side firms calling for market data prices to be fixed at marginal cost plus a reasonable profit margin, to trading venues arguing that their existing charging schemes were reasonable and disputing the evidence of high prices for market data in Europe. These split views on the level of prices for market data in the EU were illustrated by two studies of Copenhagen Economics (2012)² and Oxera (2014)³.

13. This section of the CP assesses the overall developments in prices for pre- and post-trade data in the EU since the application of MiFID II/MiFIR and of the various provisions introduced to lower the cost of market data: (i) the publication of pre- and post-trade transparency data on an RCB, (ii) the obligation to provide pre- and post-trade transparency data on a disaggregated basis, and (iii) the requirement to make pre- and post-trade data available free of charge 15 minutes after publication.

14. Given that pre- and post-trade transparency requirements for equity instruments other than shares and for non-equity instruments have only been introduced in MiFID II/MiFIR, with reference to these asset classes it is challenging to assess at this stage developments in the price of market data. In light of this, Section 3.1 focusses on developments in equity markets. Section 3.2-3.4 covers both equity and non-equity markets.

3.1 Overall developments

15. Before assessing how market participants are complying with the granular transparency requirements set out in MiFID II/MiFIR, it is worth looking at the overall developments since MiFID II/MiFIR have been applied, in particular to consider whether MiFID II/MiFIR delivered on its objective of ensuring that market data is available to market participants in an easily accessible, fair and non-discriminatory manner. The MiFID II/MiFIR provisions also intended to decrease the average cost of the market data and make them available to a wider range of market participants.

² The study was commissioned by the Danish and Swedish Securities Dealers Association. The Copenhagen Economics study recommended a bottom-up price regulation prescribing a price limit for raw data.

³ The study was commissioned by Deutsche Börse, Nasdaq OMX, NYSE Euronext and SIX Swiss Exchange. The Oxera study concluded that there was no justification for regulating venues' data prices, which would distort the market. However, Oxera recognised that there might be benefits from more transparency about how venues recover their costs.



16. Compared to the situation before the application of MiFID II/MiFIR, it can be observed, as confirmed by feedback received to the CP that while on some limited aspects data users and trading venues share a common assessment, the different perceptions of market data users and trading venues have persisted in other areas.

17. Both trading venues and market data users acknowledge that, in an environment driven by technological development, the demand for market data and its value is increasing. This is for instance reflected in a shift in the consumption from display to non-display data⁴. Furthermore, MiFID I and II resulted in increased competition in equity markets and in a wider choice of execution venues. Since market data can address the adverse effects of a more fragmented trading environment, demand for market data increased. Both groups also concur that market data vendors play an important role in the value chain of market data and that the discussion on the price of market data should include the assessment of the role of data vendors.

18. However, data users and trading venues continue to disagree as to whether the price for market data is reasonable, as also documented in two new studies published by Copenhagen Economics⁵ and Oxera⁶.

19. Section 3.1.1 and 3.1.2 present feedback received from trading venues and market data users to the CP and to two questionnaires sent to trading venues and APAs by ESMA in the summer 2018 and summer 2019 on revenues and practices with regards to market data.⁷ In addition, it also incorporates additional quantitative and qualitative information received from market data users.

3.1.1 Feedback from trading venues

20. According to the feedback received from trading venues and APAs, overall prices of market data have been stable since the application of MiFID II/MiFIR. While trading venues and APAs acknowledge that the prices for some products have increased, they stress that at the same time other services have become less expensive. In particular, trading venues consider that the provision of disaggregated products allow customers to purchase only selected parts of the data for a price lower than the package. At the same time, trading venues increased prices for other use cases, such as the non-display usage in the trading applications, or data used by SIs.

21. In the view of trading venues such differentiation makes pricing fairer, since the fees depend on the value that market data creates for market participants. Furthermore, trading venues consider that such pricing benefits retail investors.

⁴ The terms display and non-display data are defined differently across trading venues. Broadly speaking, display data is data that is consumed on a screen by a human user, whereas non-display data is directly fed into trading algorithms, i.e. non-displayed. Moreover, some trading venues also consider the use of the data for determining whether display or non-display fees apply.

⁵ <https://www.copenhageneconomics.com/dyn/resources/Publication/publicationPDF/6/466/1543587169/pricing-of-market-data.pdf>

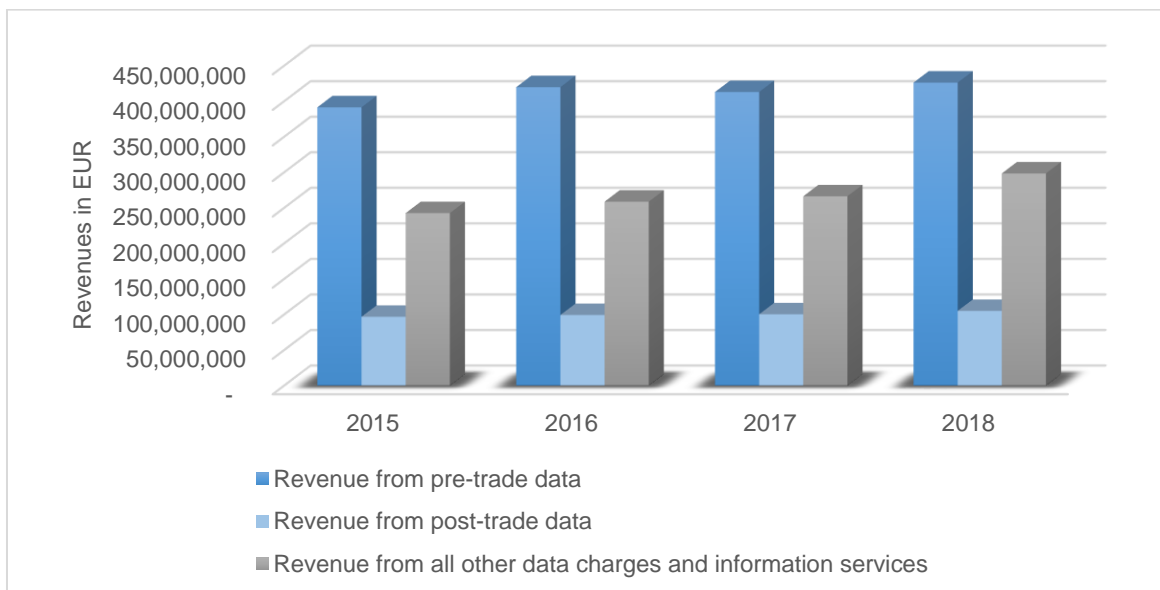
⁶ <https://www.oxera.com/wp-content/uploads/2019/03/design-of-equity-trading-markets-1.pdf>

⁷ The sample included most regulated markets, MTFs and OTFs in the EU, except in the UK where due to large number of the venues, only a representative sample of entities was included in the survey.

22. The trading venue’s view is that market data is the outcome of a dynamic price formation process and is a joint product with trade execution. Trading venues consider the changes in the cost of market data as a natural consequence of the structural changes in the market, such as the move from terminal use to increased electronic and algorithmic trading. This reflects the ongoing automation of activities using market data, driven by technological developments. Trading venues stressed that those changes require as well constant investment in hardware and software by trading venues and other data providers. Furthermore, trading venues and APAs consider that MiFID II/MiFIR created a need for adaptation to regulatory requirements that had an impact on data provision.

23. According to the responses received to the questionnaire sent to trading venues and APAs, the overall revenues of trading venues from selling market data have been stable over the period 2015-2018 with a slight upward trend, as evidenced in Figure 1. The revenues from pre-trade data are the most important source of market data income for trading venues, followed by other data charges and information services, and by revenues from post-trade data.

FIGURE 1: THE DEVELOPMENT OF TRADING VENUES’ REVENUES FROM MARKET DATA, 2015-2018



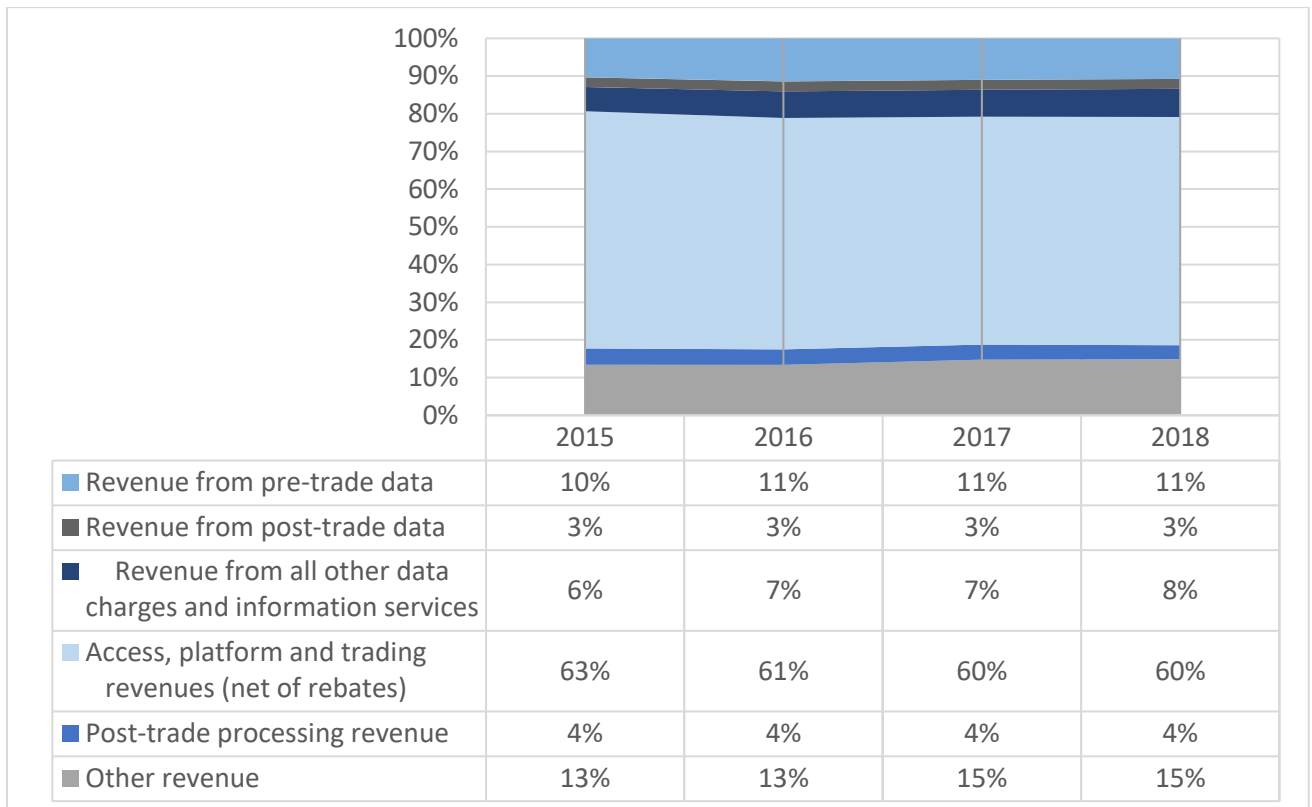
Source: ESMA calculation based on the data provided by trading venues in the questionnaire on market data

24. When analysing the individual responses, it is evident however that there are significant differences across trading venues in the EU. Some trading venues base their revenues mainly on trading fees, while for other venues market data fees are the main source of income. Among the ten largest trading venues in Europe⁸, the proportion of revenues from market data fees to total revenues ranged from 7 to 42% in 2018.

⁸ The largest ten trading venues were selected based on the total revenues in 2018 provided in the questionnaire, those are: Eurex Deutschland, Euronext, London Stock Exchange, BME, Nasdaq, ICE Futures, Xetra, Borsa Italiana, LME and CBOE.

25. The breakdown of overall trading venues’ revenues across the analysed period is also fairly stable, as shown in Figure 2. The largest part of the overall revenues is attributed to trading fees. The proportion of this item has not changed significantly during the period analysed when looking at aggregated data from all the trading venues. Among the ten largest trading venues in the EU, there was one for which the revenues for market data compared to overall revenues have increased significantly from 25% in 2015 to 42% in 2018, while for the others this proportion remained unchanged or increased only slightly.

FIGURE 2: THE BREAKDOWN OF TRADING VENUE’S REVENUES, 2015-2018



Source: ESMA calculation based on the data provided by trading venues in the questionnaire on market data

26. The responses to the questionnaire also displayed the increasing complexity of market data policies of trading venues and APAs. ESMA had asked trading venues and APAs to provide a high-level summary of their market data policy. Only very few trading venues and APAs were capable of doing this, many trading venues referred to long legal documents and price lists (see also Box 1 in section 3.1.2).

3.1.2 Feedback from market data users

27. Overall, market data users are of the view that market data prices have increased significantly since the application of MiFID II/MiFIR. This was also reflected in the feedback received to the CP, where market data users highlighted that the most significant increases are related to non-display use and to the use of data by SIs. Some market data users also provided ESMA with qualitative and quantitative evidence.

28. For instance, one trade association provided ESMA with a model use case presenting the development in market data prices after the implementation of MiFID II/MiFIR. The model was made for a hypothetical small principal trading firm in which the usage characteristics remain broadly unchanged over a four-year period. ESMA believes that this model is representative of the overall feedback received from market data users on the evolution of market data prices. In ESMA's view looking only at the development of costs paid by individual companies might not give a fair representation on developments in the prices for market data, since many data users have reduced their data consumption due to increased prices, for example by limiting the number of staff having access to data.

29. The model is based on the following assumptions:

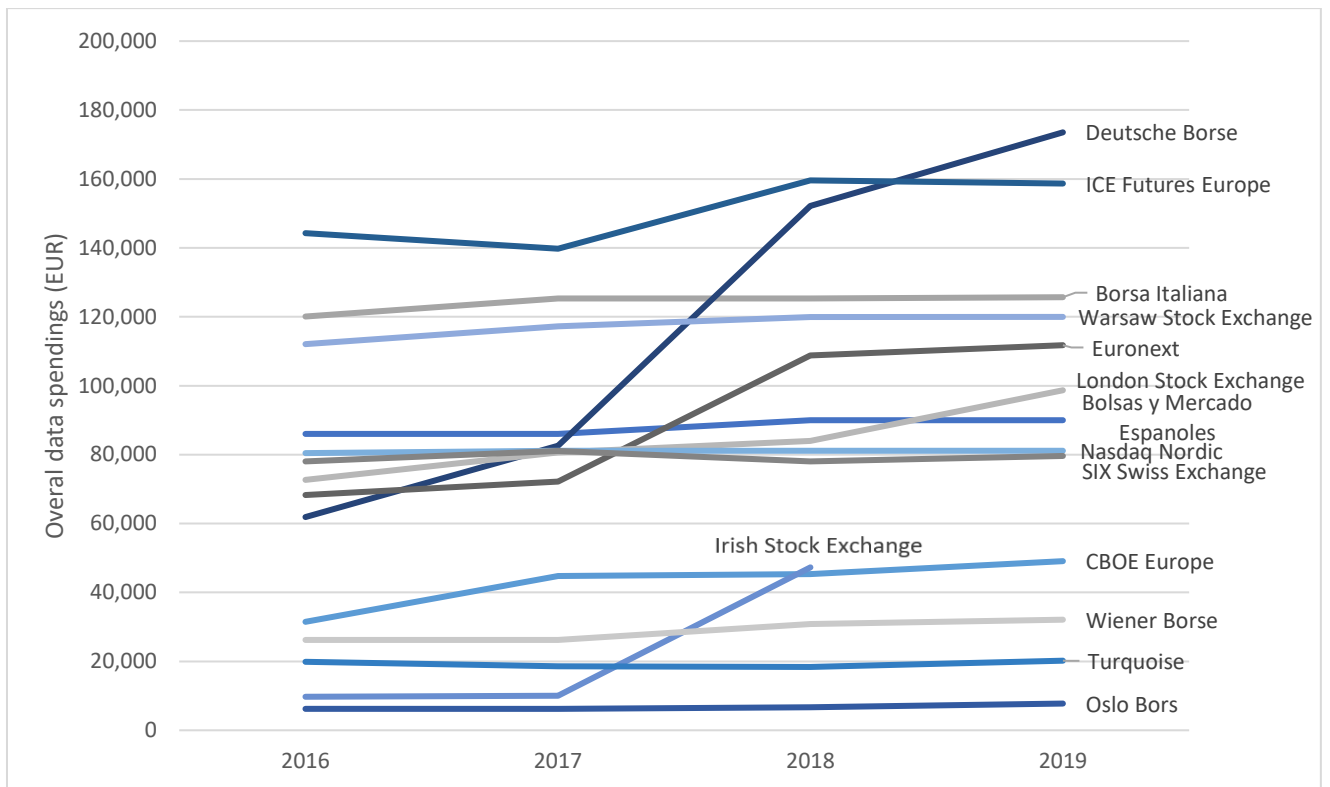
- the firm is active on a broad range of EU financial markets and trades both equities and listed derivatives;
- the firm subscribes to market data directly from trading venues⁹;
- there are 10 display users, 15 non-display users and up to 6 additional users under Risk/Compliance/Quality Assurance;
- there is internal distribution of the data within the group but no external distribution;
- pricing is based on the most relevant update for each calendar year (normally by January 1 or within early Q1), except for certain cases where material changes were made to individual venue market data agreements mid-year; and,
- any non-Euro prices were converted to EUR using the ECB average rates for the relevant calendar year.

30. Figure 3 displays the yearly expenditure of the hypothetical firm on market data for those per different trading venues included in the model, across the period 2016-2019. On basis of the aggregate costs, this firm would have seen its market data costs rise by approximately 27% from 2016 to 2019 (from EUR 917k to over EUR 1.16m).

31. When looking at the different usage types of the hypothetical firm, it is possible to see from Figure 4 that the increase in prices for display usage is low, whereas the cost increase is highest for non-display data.

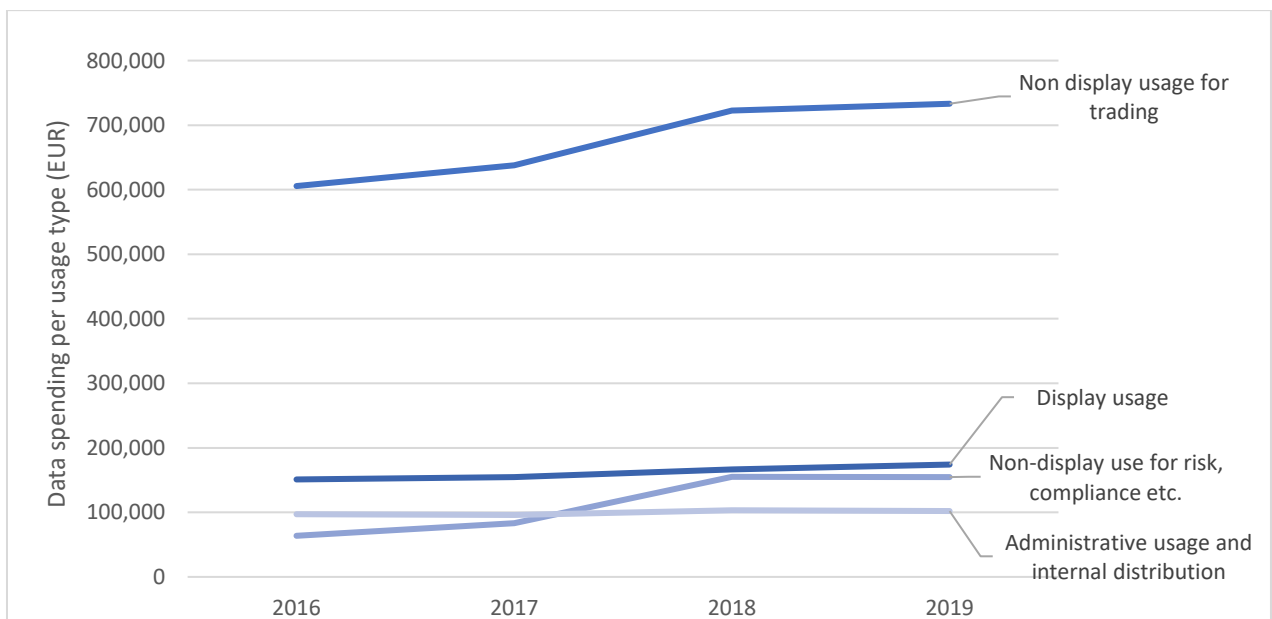
⁹ One Swiss exchange was included to represent the integration of EU and Swiss markets.

FIGURE 3: OVERALL HYPOTHETICAL DATA SPENDING



Source: Data provided as evidence to the CP by the European Principal Traders Association. In the 2016-19 period a number of technical and structural changes at different exchange groups specifically impacted certain fee categories. Notably, in the period Euronext launched its new Optiq Market Data gateway during 2017. While, also in 2017, Deutsche Borse launched the new Xetra Order by Order product. Furthermore, in 2019, Euronext completed its acquisition of the Irish Stock Exchange.

FIGURE 4 HYPOTHETICAL PER USAGE DATA SPENDING



Source: Data provided as evidence to the CP by the European Principal Traders Association

32. ESMA also received evidence from another association, which shows the increase in actual fees paid by a subset of its members for non-display market data. This data confirms the observation that overall firms pay more for market data although the situation differs per trading venue.

TABLE 1 NON-DISPLAY MARKET DATA EXPENDITURE PER TRADING VENUE

Year	TV1	TV2	TV3	TV4	TV5	TV6	TV7	TV8	TV9	Total
2017'H1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2017'H2	0%	17%	5%	8%	22%	10%	11%	-4%	12%	10%
2018'H1	-27%	3%	7%	415%	61%	18%	151%	0%	27%	41%
2018'H2	-27%	0%	5%	439%	50%	35%	176%	-2%	20%	41%
2019'H1	-7%	66%	5%	417%	107%	76%	188%	55%	20%	96%

Source: Data provided as evidence to the CP by the Association for Financial Markets in Europe

33. Furthermore, ESMA received quantitative data on market data fees paid by data users as feedback to the consultation as well as based on a request ESMA sent to a number of market data users on their spending during the period 2016-2019. The feedback received confirmed that market data prices have not increased across all trading venues and that some trading venues have more aggressively increased prices.¹⁰

34. Data users highlighted that the increase in prices consist not only of direct fee rises of existing products, but also included the introduction of fees for services which were previously provided free of charge, or changes in the definitions used in the price lists. Respondents to the CP highlighted the following reasons for the increase in prices:

- the data market is an oligopoly where each trading venue provides indispensable and irreplaceable real time datasets;
- inelastic demand for data due to best execution requirements;
- introduction of new types of fees; and
- a lack of enforcement of RCB legislation.

35. Moreover, there are additional practices which seem to impact the prices of market data, such as:

¹⁰ Given that most data users signed non-disclosure agreements, ESMA cannot disclose details on the exact fee paid by data users as well as on the sector in which the data user is active.



- requiring data users to provide information on the intended use of data;
- disaggregated data costs set at levels that encourage the purchase of 'all data' packages;
- complex and frequently amended market data policies;
- lack of standardization of fee policies and terminologies;
- non-disclosure agreements;
- need of establishment of dedicated teams focused on managing relations with the trading venues; and
- aggressive audit procedures to ensure compliance with agreements.

36. Data users often referred to the market data policies of trading venues as a key factor for the variations and increases in data fees, namely due to lack of harmonization, complexity and frequent updates on the established criteria. For this reason, ESMA conducted a review of the contractual elements present in the market data policies of ten exchanges, which is presented in the box below.

Box 1 MARKET DATA POLICIES – ESMA ANALYSIS

In view of the limited feedback received on the market data policies of trading venues to the questionnaires sent by ESMA, ESMA decided to perform an independent analysis of the market data policies based on a sample of trading venues (Euronext, LSE, Nasdaq Europe, CBOE, Deutsche Boerse, BME, Warsaw Stock Exchange, Tradeweb, ICE and Wiener Boerse). The sample has been selected aiming at achieving a balanced representation of the venues operating in the EU market, accounting for differences in size, market share, geographical location and asset classes traded.

The analysis focused on the following elements:

- the documents that embody the market data agreement and policy, with particular regard to accessibility, length and consistency;
- the definitions and practices on terms such as “derived data”, “unit of count”, “professional user” and “non display usage”; and
- the licences and (sub-)categories of products offered.

Accessibility of market data policies

In conducting the search for the market data policies on the trading venues' websites, ESMA noted that not all the trading venues published on their website complete information related to their market data policy as they are required to do according to MiFID II. Furthermore, for

many trading venues the information was displayed in places not immediately related to the market data section of the website, making it difficult to find.

Length and complexity of market data policies

In general, the market data agreements consist of packages of multiple non-integrated documents, which include the agreement itself, fee schedules, redistribution agreements, policy guides, order forms, usage declarations, audit procedures, etc. It should be noted that every trading venue assessed had a somewhat different approach to its market data policy, including different types of documents, and, at times, very long set of documents. In a few cases, the market data policy is rather short and covers only a few pages, whereas in most cases, in order to fully understand the market data policy, users have to go through an average of 120 pages of documents per trading venue (overall, across the trading venues covered the longest market data policy covered 360 pages, whereas the shortest market data policy covered just 1 page).

From the websites, it emerges that the market data policies, including fee schedules, are updated more than once per year (up to 4 times per year).

The documents are complex because of their high level of technicality: they require market data, legal, compliance and technological knowledge to enable full understanding. While larger market participants may have the resources to deal with these documents adequately, they are likely to pose a significant challenge for smaller market participants.

Consistency of market data policies

Moreover, while at first glance the definitions provided in the market data agreements appear similar, they are not identical, resulting in different approaches and making it challenging from a user perspective to compare data offers across trading venues. ESMA observed that the terminology and definitions used in market data agreements are often presented in vague terms that contribute to divergent practices in licensing. The main differences emerged with reference to the definitions of “Unit of Count” and “Professional User / Subscriber”.

Definitions: “Unit of Count” and “Professional User / Subscriber”

Trading venues similarly define the “Unit of Count” as the billing unit for quantifying the extent of use of market data and the corresponding fees, but in what sense it is actually considered as a fee-liable unit varies from trading venue to trading venue: the only unit of count trading venues have in common is the “access ID” or “user ID”, while each trading venue provides for its own list of units of count, which may include, e.g. “per device”, “per query”, “per single quote”, “per television household”, “per data feed”, “per subscriber firm”, “physical user ID”, “per number of end users within the recipient’s organization”.

With regard to the definition of “Professional User / Subscriber”, a few trading venues do not differentiate between the type of users, while for most of the trading venues professional

users constitute a residual category which includes all the subscribers who do not fall within the definition of “Non-Professional user”. The scope of the definition of “Non-Professional user” (or “Private Investor”) is usually limited, leaving margins of openness and uncertainty as to the category of professional users.

ESMA also noted that several market data policies and price lists show discrepancies with reference to the categories of users: a few mismatches have been detected between the definitions of users provided by the policy and the type of users actually considered fee-liable according to the price list.

Licences and (sub-)categories of products offered

The majority of trading venues have developed products tailored to the kind of usage that the user makes of the data. This can be highlighted based on non-display data: there are multiple derived data and non-display licenses, segmented into many sub-packages by type of usage, so that there are different use cases under the umbrella of the non-display usage, each potentially with their own definition, fee structure and unit of count.

From the joint reading of market data agreements and price lists, it emerges that the data recipients of these sliced sub-packages are often not clearly defined, making it difficult to determine ex ante on the basis of the price lists and market data policy in which category a potential user will fall.

In fact, the fees related to market data licensing generally include various fees, such as access fees, site fees, distribution fees, display fees, delayed data fees, different application of the non-display fees and fees for creating and storing derived data/work. In this context, users consuming real-time market data for different uses (such as profit and loss calculation, risk management and portfolio valuation) will potentially be captured by multiple licences for different usages of the same data.

3.1.3 Preliminary conclusions

37. The analysis of the feedback received in reaction to the CP as well as from the second questionnaire for trading venues and APAs broadly confirms the analysis presented in the CP. While prices for market data did not increase for all market data offered and not all trading venues and APAs increased prices for market data, it appears that overall market data prices increased, in particular for data for which there is high demand (e.g. non-display data). Moreover, it appears that currently market data prices are not only charged on the basis of the costs for producing and disseminating market data but also reflect the value for data users.

38. While it is difficult to specify the level of price increases for a number of reasons (e.g. users consumed less data to limit expenses, introduction of new product categories, non-disclosure agreement), ESMA considers that so far MiFID II has not delivered on its objective to reduce the price of market data. At the same time, ESMA acknowledges that market data plays an increasingly important role in financial markets and that market participants are consuming



an increased amount and variety of data, which requires innovations by trading venues and data providers for the infrastructure necessary to provide and use the data.

3.2 Providing market data on a reasonable commercial basis

3.2.1 The legal framework

39. Articles 64 and 65 of MiFID II require APAs and CTPs to publish post-trade market data on an RCB. A similar requirement for trading venues, but applying to both post- and pre-trade data, is provided in Article 13 of MiFIR. Moreover, SIs are required to make public their quotes on an RCB, following the provisions in Articles 15 and 18 of MiFIR.

40. In the technical advice provided to the EC in December 2014, ESMA analysed how to specify the provisions to publish market data on an RCB and developed criteria ensuring that charges are fair, reasonable and non-discriminatory.

41. When developing its technical advice, ESMA considered three options for implementing the RCB provisions: i) a transparency plus approach, ii) a revenue share limitation and iii) applying a long-run incremental cost-plus methodology (LRIC+).

42. After the public consultation on the technical advice and considering all feedback received, ESMA advised on choosing the transparency plus approach, i.e. enhancing the public transparency of pricing and of market data related policies. The objective of this solution was to provide more information on the pricing of market data, which should enable data users and supervisors to effectively compare the offerings, spot best practices as well as monitor compliance. The other two solutions were assessed as difficult to apply in practice and therefore unlikely to be effective in the context of market data pricing.

43. The final specification of the concept of RCB is provided in the Articles 84-89 of CDR 2017/565 (for data reporting service providers (DRSPs)) and Articles 6-11 of CDR 2017/567 (for trading venues and SIs). Those regulations require that the market data price should be:

a) based on costs of producing and disseminating such data and may include a reasonable margin (Article 85 of CDR 2017/565 and Article 7 of CDR 2017/567),

b) offered on a non-discriminatory basis to all clients (Article 86 of CDR 2017/565 and Article 8 of CDR 2017/567),

c) charged according to the use made by the individual end-user (Article 87 of CDR 2017/565 and Article 9 of CDR 2017/567), and

d) available without being bundled with other services (Article 88 of CDR 2017/565 and Article 10 of CDR 2017/567).

44. In addition to those provisions, in order to increase transparency, timeliness and comparability of information on market data prices, CDR 2017/565 and CDR 2017/567 provide a number of requirements regarding prices and other terms and conditions (Articles 89 and 11):



- a) current price lists' publication,
- b) advance disclosure with a minimum of 90 days' notice of future price changes,
- c) information on the content of the market data,
- d) disclosure of revenues obtained from making market data available and the proportion of that revenue compared to the total revenues, and
- e) information on how the price was set, including the cost accounting methodologies used and the specific principles.

45. The data provision obligations of CDR 2017/565 and CDR 2017/567 do not apply to trading venues, APAs, CTPs and SIs that make market data available to the public free of charge (Articles 84(2) and 6(2) respectively).

46. The following two sub sections present ESMA's assessment of the application of the transparency plus approach in practice – feedback to the consultation covering both the availability of the RCB information and the quality of the information disclosed (section 3.2.2), as well as whether changes and/or further guidance on the transparency plus approach (section 3.2.3) are needed to deliver on the MiFID II/ MIFIR objective to lower the cost of the market data and to make it available to market participants in an easily accessible, fair and non-discriminatory manner.

3.2.2 Feedback to the consultation

Availability and quality of RCB information

47. In the CP, ESMA considered that while overall trading venues, APAs and SIs made available the information with respect to the RCB provisions, there were significant shortcomings as to the quality, comparability and usability of the information provided. Therefore, ESMA suggested to issue supervisory guidance on the level of granularity expected for the RCB disclosure requirements as well as the terminology used in order to improve the usability and comparability of the information provided.

48. Most respondents to the consultation agreed with ESMA's assessment on the availability of information with respect to the RCB provisions, even though most data users replying to the consultation consider that although the information was published, it is not possible to understand and compare the information provided. Furthermore, some market data users reported that some trading venues, APAs and/or SIs do not disclose information on all the elements required, in particular on the revenues from market data and on how the price was set. Many data users complained that the information was difficult to find.

49. Regarding the quality of the RCB information, responses to this question were split between trading venues, in particular regulated markets, and market data users, including some MTFs. On the one hand, nearly all responses received from regulated markets disagreed with ESMA's conclusions. According to them, progress has been made and the



information provided is of good quality and there is no need for ESMA to clarify further what information venues are expected to disclose.

50. On the other hand, all other respondents concurred with ESMA's assessment. According to them, the information provided by trading venues is not meaningful and it is not possible to compare the information across venues. Moreover, fee schedules are too long and too complex, information on the methodologies for price setting is generally vague and does not enable investors to understand how the price is set and regulators to assess whether trading venues comply with their obligations (see Box 1 on Market Data policy).

Improving the current approach (transparency plus) vs. alternative approach

51. In the CP, ESMA asked stakeholders whether they would be supportive of supervisory guidance to improve the quality of the information published or whether it should be concluded that the current transparency plus approach of providing market data on an RCB does not work and it should be replaced by an alternative approach, such as an LRIC+ model or a revenue cap.

52. Views of respondents were split between those stakeholders in favour of maintaining the current approach and those stakeholders considering that the current approach has failed and should be replaced by some form of price regulation. Nevertheless, a majority of respondents were considering that it may be premature to conclude that the transparency plus approach cannot deliver and recommended to further improve the current approach.

53. Feedback from most regulated markets considered that there was neither the need for issuing guidance to improve usability and comparability of the information nor should an alternative approach be considered. From the perspective of this group of stakeholders, the fact that the information provided differs across trading venues is a direct consequence of the fragmentation of capital markets in the EU, which they consider to be a consequence of MiFID I and MiFID II/MiFIR. Furthermore, regulated markets pointed out that best practices were still emerging and issuing further guidance on the level of granularity expected and the terminology used would be premature at this stage. Lastly, concerns were expressed that a standardisation of the terminology and standards used may hamper innovation in that sector.

54. Regulated markets voiced concerns about the use of price regulation, in particular on the application of an LRIC+ model, arguing that this model was not possible for digital products such as data. Trading venues also pointed to the principle of proportionality and the fundamental freedom to conduct a business which forms the basis of regulation and the economic architecture in the EU.

55. Other stakeholders had a more nuanced view. While most data users as well as MTFs considered that the transparency plus approach does not deliver currently, the majority of these respondents considered that the approach may be workable if ESMA set out its expectations and standards in supervisory guidance, in particular on the information to be disclosed and the types of costs to be included.

56. Furthermore, respondents asked for a more harmonised terminology (e.g. displayed/non-displayed, derived data, delayed data etc.), simplifying fee schedules, which are perceived



as too granular and complex, and removing the possibility for trading venues to take into account the value of the data to customers when charging for market data. Those respondents also considered that a stricter enforcement of the RCB provisions by CAs is needed.

57. The remaining respondents to the questionnaire were in favour of a changed approach and considered that the current transparency plus will never deliver the intended outcome. Several of these respondents invited ESMA to consider the report of Copenhagen Economics.

3.2.3 ESMA's assessment and recommendations

58. The feedback to the CP confirmed ESMA's preliminary analysis that to date the RCB provisions have not delivered on their objectives. Based on the feedback received to the CP, ESMA considers that currently the RCB information provided by trading venues, APAs and SI does not enable users to understand market data policies and how the price for market data is set.

59. ESMA acknowledges that this assessment is not shared by regulated markets. However, it should be noted that the RCB disclosure provisions aim at improving the level of transparency on market data for data users and the feedback from data users clearly indicated that they do not concur with the assessment of regulated markets. ESMA therefore considers it necessary to recommend action in this area. ESMA concurs with the views provided by many stakeholders in the response to the CP that it would be premature to conclude that the transparency plus approach should be replaced by an alternative approach.

60. ESMA believes that the most appropriate way forward should be to work on improving the current RCB approach (i.e. the transparency plus). ESMA intends work on supervisory guidance in 2020 to improve the usability and comparability of the information disclosed. Furthermore, ESMA recommends a number of targeted legislative changes further reinforcing the current RCB approach.

61. Concerning the supervisory guidance, ESMA considers that it should cover, inter alia:

- development of a standardised publication format to be used by all trading venues, APAs and SIs for disclosing RCB information;
- standardisation of key terminology used;
- guidance on key concepts (e.g. per user fees); and
- guidance on the typology of costs to be included in the fee calculation.

62. ESMA considers it important to develop such guidance in close consultation with both data users and trading venues to ensure that (i) it delivers on improving the usability and comparability of RCB information provided while (ii) being compatible to be used in a dynamic market environment.

63. ESMA agrees with many respondents to the CP that such supervisory guidance will only deliver where the provisions are enforced by CAs. ESMA therefore will, in close cooperation with CAs, follow closely the implementation of the guidance by trading venues, APAs and SIs and the relevant supervisor should take enforcement measures, where necessary. Moreover, ESMA recommends assessing the application of the RCB provisions after further guidance has been issued and to reconsider moving to price regulation such as LRIC+ should the situation not improve.

64. In addition, ESMA recommends a number of targeted changes of either the Level 1 or Level 2 provision to strengthen the overall concept that market data should be charged based on the costs for producing and disseminating the information. ESMA understands that any such changes would take some time and hence only enter in force after the supervisory guidance has been developed.

65. In particular, ESMA recommends to:

- add a mandate in the Level 1 text empowering ESMA to develop draft Technical Standards specifying the content, format and terminology of the RCB information that trading venues, APAs, CTPs and SIs have to provide according to Article 13 of MiFIR. Such an empowerment would allow to transform the supervisory guidance outlined above into binding Union law, thereby further strengthening the harmonised and consistent application of the RCB provisions;
- move the provision to provide market data on the basis of costs (Article 85 of CDR 2017/565 and Article 7 of CDR 2017/567) to the Level 1 text. Such a move would allow to further specify this general principle via Level 2 measures;
- add a requirement in the Level 1 text for trading venues, APAs, SIs and CTPs to share information on the actual costs for producing and disseminating market data as well as on the margins included with CAs and ESMA combined with an empowerment to develop L2 measures specifying the frequency, content and format of such information. Such a requirement should not be perceived as a measure to introduce price controls, but aims at enabling CAs (including ESMA in its future role as CA for APAs and CTPs) to better understand the pricing of market data and to assess whether market data is provided on an RCB;
- delete Article 86(2) of CDR 2017/565 and Article 8(2) of CDR 2017/567 allowing trading venues, APAs, CTPs and SIs to charge for market data proportionate to the value the market data represents to users. While ESMA considers that trading venues, APAs, CTPs and SIs may establish different categories of users as per Article 86(1) of CDR 2017/565 and Article 8(1) of CDR 2017/567, it appears that the second paragraph of these Articles undermines the main principle that market data should be priced-based on the costs for producing and disseminating the information. This is without prejudice to firms setting prices depending on the type of clients as long as this complies with the general principle of providing the data based on the costs for producing and disseminating the information.



3.3 Providing data on a disaggregated basis

3.3.1 The legal framework

66. The MiFIR provisions on data disaggregation aim at ensuring that users of market data only pay for data they are interested in rather than being forced to buy bundled data, which may include data of little interest to users.

67. Article 12 of MiFIR introduces the requirement for trading venues to make available pre- and post-trade data separately. Moreover, Article 12 of MiFIR mandates ESMA to develop draft RTS specifying the offering of pre-trade and post-trade transparency data, including the level of disaggregation of the data to be made available to the public.

68. While customers may have an interest in a high level of data disaggregation, ultimately up to the instrument level, a high level of data disaggregation also implies higher costs for trading venues for producing the various data feeds which may ultimately result in higher costs for market data, in particular for data feeds for which there is only little demand.

69. When developing the RTS ESMA aimed at finding the right level of data disaggregation balancing the advantages of providing disaggregated data against the possible costs of highly disaggregated data. Article 1(1) of RTS 14 therefore requires trading venues to disaggregate data along four main criteria: asset class (separating equity instruments from equity-like instruments, and distinguishing fixed income, emission allowances and different asset classes of derivatives), the country of issue for shares and sovereign debt, the currency, and scheduled daily auctions as opposed to continuous trading.

70. In order to limit the burden for trading venues when providing disaggregated data, Article 1(4) of RTS 14 allows trading venues to provide such disaggregated data only upon request. Article 1(5) of RTS 14 clarifies that trading venues may, in addition to providing disaggregated data, also offer bundles of data.

71. ESMA issued a Q&A providing further guidance on the concept of providing disaggregated data on request, clarifying that any individual or entity could make a request for disaggregated data and that trading venues should reply to those requests as quickly as possible and not discriminate between requests made for the same category.

3.3.2 Feedback to the consultation

72. In the CP, ESMA preliminarily concluded that there had been only limited demand for disaggregated data and that data disaggregation did not contribute to reducing the cost of market data. Given that changes to the legal framework would result in implementation and ongoing costs for trading venues and market data users and the unclear benefits of such a change, ESMA did not recommend amending the provisions relating to data disaggregation.

73. Overall respondents to the CP agreed with ESMA's assessment. In particular, feedback from trading venues and wholesale market participants indicated that there has been only limited demand for disaggregated data, but that data users mostly ask for the whole set of

market data. In addition, respondents, in particular data users, considered that there has been only limited demand for disaggregated data since:

- disaggregated data is more expensive than bundled data;
- the granularity of disaggregation is not high enough;
- data vendors do not pass through disaggregated data; and
- trading venues do not facilitate obtaining disaggregated data (e.g. trading venues not reacting to data disaggregation requests; the need to set up direct connections to trading venues).

74. A large number of respondents, covering not only data users but also data vendors and MTFs, considered that data disaggregation resulted in higher costs for market data. The reasons for this outcome overlap to a large extent with the arguments brought forward on why there has been limited demand for disaggregated market data (see above). One additional argument brought forward explaining this assessment, was that some trading venues stopped offering previously available bundled data and replaced it with more expensive disaggregated data.

75. Stakeholders provided some recommendations to ensure that data disaggregation results in lower costs. A few respondents suggested to clarify in the legal framework that the sum of disaggregated data costs should not be higher than the cost for bundled data (e.g. buying pre- and post-trade data separately should not be more expensive than buying pre-and post-trade data in a bundle). Some stakeholders were in favour of amending RTS 14 to allow for a higher and/or different level of granularity of disaggregated data (e.g. at instrument level, requiring disaggregation between Level 1 and Level 2 data).

3.3.3 ESMA's assessment and recommendations

76. In view of the feedback received to the CP, ESMA concludes that there has been only limited demand for disaggregated data and that data disaggregation did not contribute to lowering the costs for market data.

77. ESMA takes note of concerns raised by many stakeholders that the MiFIR data disaggregation requirements may have been used by some trading venues to increase the cost for market data and/or to introduce more complex market data policies. At the same time, ESMA acknowledges that disaggregating data comes at a cost and that some data users may have underestimated the costs for disaggregated data.

78. ESMA considers that further guidance on the provision of market data on an RCB (see section 3.2.3) combined with a stronger focus on the enforcement of the data disaggregation requirements should address these concerns without requiring legislative changes at this point in time. Concerning the proposal brought to increase the level of data disaggregation set out in RTS 14, ESMA does not consider that there is enough evidence that such an amendment would be proportionate and result in a significant higher demand for disaggregated data.

79. ESMA notes the observations raised by some stakeholders that trading venues have not been reactive to data disaggregation requests. ESMA reminds trading venues of Q&A 2 of section 2 of the Q&As on MiFID II and MiFIR market structure topics,¹¹ which clarifies that trading venues should reply to requests for disaggregated data as quickly as practicable and not slower than to a request for non-disaggregated data. ESMA intends to follow-up on compliance with this Q&A with CAs.

80. ESMA agrees with the view of many stakeholders that data vendors are a key actor in the distribution chain of market data. Since the analysis in this report did not focus on data vendors, ESMA recommends an in-depth assessment of the role of data vendors on the development of prices for market data. Such an assessment could also explore imposing similar requirements to data vendors on the provision of market data to ensure that the provisions deliver on their objective to reduce the price of market data (e.g. provisions on data disaggregation or the requirement to charge on a per user basis)

3.4 Making available data free of charge 15 minutes after publication

3.4.1 The legal framework

81. MiFID II/MiFIR requires that market data should be made available to market participants free of charge 15 minutes after publication. This obligation concerns APAs and CTPs (Article 64 and 65 of MiFID II), as well as trading venues (Article 13 of MiFIR).

82. Following many questions and complaints from market participants on the application of this provision, ESMA provided further guidance (ESMA Q&As on transparency issues, Q&As 9 and 10 on general transparency topics¹²).

83. Q&A 9a clarified that market data provided free of charge 15 minutes after publication should replicate the information published on an RCB and be made available directly to end users. Q&A 9b specified that trading venues, APAs and CTPs may not impose redistribution fees on redistributors or third parties, unless where redistributors/third parties charge for the distribution of data and/or commercialise value-added services created from such data.

84. Q&A 10 clarified which types of practices of trading venues and APAs are not considered as compliant with the regulatory requirements. Furthermore, the Q&A explained that APAs and trading venues should adapt the format in which data is provided to the needs of users. When the data is accessed in large amounts and on a regular basis, the information has to be provided in a machine-readable format to ensure that it can be accessed through robust channels allowing for automatic access. In addition to this, market data should also be accessible in human-readable format, for an average user to be able to access the necessary information, e.g. through web-search tools.

¹¹ https://www.esma.europa.eu/sites/default/files/library/esma70-872942901-38_gas_markets_structures_issues.pdf

¹² https://www.esma.europa.eu/sites/default/files/library/esma70-872942901-35_gas_transparency_issues_0.pdf



3.4.2 Feedback to the consultation

85. In the CP, ESMA preliminarily concluded that a number of trading venues and APAs still do not comply with the legal requirement to provide data free of charge 15 minutes after publication and that it may consider further action should compliance with that provision not improve. ESMA also asked stakeholders for feedback on whether Q&As 9 and/or 10 should be reviewed.

86. Views from stakeholders replying to the consultation were split between market data users who broadly agreed with ESMA's assessment in the CP and trading venues and APAs stressing the implementation efforts made so far. Moreover, many trading venues and APAs considered that the requirement to provide delayed data free of charge applies only to retail investors and not to professional users.

87. According to feedback received from data users the access to publicly available data has improved, but the provision of data in a machine-readable format remains a problem. Many users also complained about the format of the data provision, which is often not user friendly. For example, one venue creates a file per every minute of trading, which is very often empty, which requires users to collect and merge numerous files to analyse the information. It appears that often trading venues and APAs only provide the data in a format which can be easily read, used and copied as a "premium service", available for a fee.

88. Market data users replying to the CP also highlighted issues related to the concepts of "value added services" and "data redistribution" set out in Q&A 9b. It seems that these concepts have been interpreted differently across trading venues and APAs, with some entities taking a very broad interpretation making a fee a default practice and rendering it impossible for commercial users to access or use delayed data free of charge.

89. In addition to those practices, market data users accessing delayed data informed ESMA that they are often required to register first and/or agree to restrictive terms of use, which make it more challenging to use the delayed market data for free. For instance, some of those agreements do not allow users to copy, alter, reproduce or create any work based on delayed data without paying a fee.

90. Market data users recommended that the rules be enforced in a stricter manner by CAs. Moreover, data users considered that ESMA should issue further guidance clarifying that there should be no requirement for ex ante registration and signing of complex legal agreements in order to access delayed data and that the data should be made available in a standardised format that is easy to download, compile and use. Some users went further and suggested that market data should be considered a public good and offered for free, including when it is provided on a real-time basis, since only then the trading venues and APAs will not have an incentive to make the delayed data provision unattractive relatively to the other market data offers.

91. The views expressed by trading venues and APAs are in opposition to the views expressed by data users. Many trading venues and APAs highlighted in their responses that they disagree with the provision to provide delayed data free of charge when it comes to commercial users. They consider such provision as unfair and are concerned that it gives a

comparative advantage to firms, which are competing with the business of venues. In their view, market data is a joint product with trade execution and therefore it is fair that trading venues participate in profits for services created based on the delayed data.

92. A number of trading venues also requested that the current requirement of providing data for a period of at least 24-hours should be reviewed since it is complex to comply with. The data should be provided free of charge only until the end of the trading day.

3.4.3 ESMA's assessment and recommendations

93. In view of the feedback received, ESMA concludes that the MiFID II/MiFIR objective of making data available free of charge 15 minutes after publication by the trading venues and APAs has not been achieved so far although some improvements can be noted. In particular, it appears that the standard practice implemented by many trading venues and APAs is to comply only with the provision as concerns retail investors, but not allowing commercial users to benefit from delayed data free of charge.

94. ESMA recalls that the provision to apply data free of charge 15 minutes after publication in Article 13 of MiFIR and Articles 64 and 65 of MiFID II does not distinguish between different types of users. Hence, the obligations cover both retail investors and also professional investors and any user should be able to access and use delayed data free of charge.

95. ESMA notes the concerns raised by many data users about the unwillingness of some trading venues to provide the data in a machine-readable format. Since for most use cases, such as market research, regulatory compliance or position valuation, the data can only be efficiently accessed when it is provided in a machine-readable format, ESMA believes that it is indispensable that trading venues comply with the requirement as set out in ESMA's guidance. In ESMA's view it was the clear intention of MiFID II / MiFIR that delayed data should replicate the information published in real-time, but with a 15 minutes delay.

96. ESMA acknowledges that there is currently no explicit provision in MiFIR requiring trading venues to provide market data "in a way that ensures fast access to the information [...] and in formats that are easily accessible and utilisable for market participants" as it is the case for APAs and CTPs. Nevertheless, ESMA considers that trading venues currently provide real-time market data meeting those conditions and that there is no reason why delayed data could not also comply with the same standards.

97. In order to remove any doubt on the obligation of trading venues to provide market data, real-time and delayed, allowing for fast access and in easily accessible and usable formats, ESMA recommends including such requirement in Article 13 of MiFIR.

98. ESMA agrees with feedback received from many stakeholders that ensuring compliance with the provision of delayed data appears to be mainly an enforcement issue which is an area to be looked into by CAs and ESMA.

99. Moreover, ESMA considers that there may be room to clarify some of the guidance published. This applies in particular to Q&A 9b since the concepts of "data distribution" and "value-added services" provisions are interpreted by many trading venues and APAs in a

manner that de facto disables the provision to provide delayed market data free of charge. Any such amendment to the Q&A would be developed in close consultation with market participants. It should be noted that in the US swap data repositories (SDRs) provide market data free of charge and in a usable manner with no conditions attached to users accessing this data.

100. In view of the opposing views expressed by stakeholders on the need to amend Q&A 10, ESMA would not recommend changing the Q&A at this stage. Concerning the points raised by data users, requiring users to register when accessing delayed data does not appear disproportionate as long as the requirements are the same for all users. ESMA agrees that the use of restrictive terms and conditions may undermine the usability of delayed data but considers that this is already covered in the Q&A.

101. Concerning the proposal made by a number of trading venues, that the requirement of providing the delayed data for the period of at least 24-hours should be shortened, ESMA remains concerned whether such data provision would allow users sufficient time to access the data. It appears that some trading venues have implemented the 24-hours requirement in a rather complex way to always meet the exact minimum period required, i.e. they maintain files with delayed data which are amended constantly to only cover a period of precisely 24 hours.

102. ESMA considers that the obligation could also be complied with in a more pragmatic manner, where data is provided on a T+1 basis. For example, during the trading day of 7th October, the file containing delayed data is composed and published. Such a file should be made available until the end of the next trading day of 8th October. Such a solution meets the 24-hour requirement and is simpler than the one developed by some trading venues. In ESMA's view the 24-hours requirement in the Q&A should therefore not be changed.

3.5 Summary of ESMA's assessment and recommendations on developments in prices for pre- and post-trade transparency data

103. ESMA considers that so far MiFID II has not delivered on its objective to reduce the price of market data. Prices increased, in particular for data for which there is high demand, such as non-display data. It appears that the value of the data for users is one of the key drivers for setting the price for market data.

104. At the same time, ESMA acknowledges that market data plays an increasingly important role on the financial markets and that market participants are consuming an increased amount and variety of data, which requires innovations by trading venues and data providers for the infrastructure necessary to provide and use the data.

105. ESMA is of the view that to date the RCB provisions have not delivered on their objectives to enable users to understand market data policies and how the price for market data is set. While it appears premature to conclude that the transparency plus approach should be replaced by an alternative approach, such as price regulation, ESMA believes that the most appropriate way forward should be to work on supervisory guidance in 2020 to improve the



usability and comparability of the information disclosed under the current transparency plus approach.

106. In addition, ESMA recommends a number of targeted changes to either the Level 1 or Level 2 texts to strengthen the overall concept that market data should be charged based on the costs for producing and disseminating the information:

- add a mandate to the Level 1 text empowering ESMA to develop Level 2 measures specifying the content, format and terminology of the RCB information; and
- move the provision to provide market data on the basis of costs (Article 85 of CDR 2017/565 and Article 7 of CDR 2017/567) to the Level 1 text;
- add a requirement in the Level 1 text for trading venues, APAs, SIs and CTPs to share information on the actual costs for producing and disseminating market data as well as on the margins with CAs and ESMA together with an empowerment to develop Level 2 measures specifying the frequency, content and format of such information;
- delete Article 86(2) of CDR 2017/565 and Article 8(2) of CDR 2017/567 allowing trading venues, APAs, CTPs and SIs to charge for market data proportionate to the value the data represents to users.

107. There has been only limited demand for disaggregated data and data disaggregation did not contribute to lowering the costs for market data. Nevertheless, ESMA does not recommend at this stage to amend the provisions on data disaggregation since there is not enough evidence that such an amendment would be proportionate and result in a significant higher demand for disaggregated data. ESMA considers that a stronger focus on the enforcement of the data disaggregation requirements should address the issues identified.

108. ESMA concludes that the MiFID II/MiFIR objective of making data available free of charge 15 minutes after publication by the trading venues and APAs has not been achieved so far although some improvements can be noted. In order to remove any doubt on the obligation of trading venues to provide market data, real-time and delayed, allowing for fast access and in easily accessible and usable formats, ESMA recommends including such requirement in Article 13 of MiFIR.

109. ESMA intends to conduct further work in this area, in close cooperation with CAs, to ensure compliance with the provision of delayed data. This may also result in some clarification on supervisory guidance already issued, such as the concepts of “data distribution” and “value-added services”.

4 The consolidated tape for equity instruments

4.1 The MiFID II legal framework

4.1.1 The CT and the Commission's review of its functioning

110. MiFID II sets out the regulatory framework for DRSPs, which includes APAs, approved reporting mechanisms (ARMs) and CTPs. CTPs are entities authorised to:

- collect post-trade reports for equity financial instruments (shares, depositary receipts, ETFs certificates and other similar financial instruments) and non-equity financial instruments (bonds, structured finance, emission allowances, derivatives) from trading venues and APAs, and
- consolidate them into a continuous electronic live data stream providing price and volume data per financial instrument¹³.

111. It is important to note that MiFID II designs the requirements applicable to “voluntarily established” CTPs, whereas it does not mandate the establishment of a CT in the EU and does not oblige trading venues and APAs to submit transaction data to a CTP for consolidation. The latter solution is the one chosen by the legislation in the US¹⁴.

112. MiFID II¹⁵ distinguishes between the CT for equity financial instruments and non-equity financial instruments. MiFID II expected that the equity financial instruments CT would contribute to creating a more integrated European market and make it easier for market participants to gain access to a consolidated view of trade transparency information. In particular, the competition among several providers should allow to achieve technically highly sophisticated and innovative solutions “*servicing the market to the greatest extent possible and ensuring that consistent and accurate market data is made available*” (Recital 117 of MiFID II). MiFID II recognises that the establishment of a CT for non-equity financial instruments is more difficult and therefore provided for the application of the non-equity CT with a 21 months delay, i.e. from 3 September 2019.

113. While MiFID II opted for a commercial solution for providing a CT, co-legislators considered it necessary to appoint a CT through a public procurement process if the commercial solution did not lead to the timely delivery of an effective and comprehensive CT for equity and equity-like instruments¹⁶. Through the report to the European Parliament and Council provided for by Article 90(2) of MiFID II, for the purposes of which this report is drafted, the EC has to assess the functioning of the CT against the following criteria:

¹³ In addition to these services, which are mandatory to be authorised as a CTP, Article 13 of the RTS 13 states that CTPs can provide certain additional services.

¹⁴ For instance, this is the case for the legal framework applicable in the US. See, among others, Regulation National Market System, Rule 603 — Distribution, consolidation, and display of information with respect to quotations for and transactions in NMS stocks.

¹⁵ See Recitals (117) and (118) of MiFID II.

¹⁶ See Recital (117) of MiFID II.

- the availability and timeliness of post trade information in a consolidated format capturing all transactions irrespective of whether they are carried out on trading venues or not;
- the availability and timeliness of full and partial post trade information that is of a high quality, in formats that are easily accessible and usable for market participants and available on a reasonable commercial basis.

114. Should the EC conclude that the CTPs failed to provide information in a way that meets the above-mentioned criteria, it should accompany its report by a request to ESMA to launch a negotiated procedure for the appointment through a public procurement process run by ESMA of a commercial entity operating a CT¹⁷.

115. Article 90(2) of MiFID II provides that the report on the functioning of the equity instruments CT should be delivered by 3 September 2019. In this respect, in July 2018, the EC asked ESMA to provide its contribution for the report on the CT by the beginning of March 2019. However, due to the high number of MiFID II/MiFIR review reports to be prepared in parallel and the unknown impact of Brexit, ESMA suggested to the EC services an adjusted timeline for the delivery of the whole set of review reports. With reference to the report on the equity CT, ESMA suggested to deliver it by December 2019, together with the review report on the development in prices for pre- and post-trade data.

4.1.2 Authorisation of equity CTPs and related requirements

116. The operation of a CTP is subject to the authorisation by the NCA¹⁸, which is granted where the latter is satisfied that the CTP complies with all the requirements set forth by MiFID II. Such authorisation may be withdrawn where, among other things, the conditions under which the authorisation was granted are no longer met (see Articles 59, 61 and 62 of MiFID II¹⁹). RTS 13 supplements MiFID II as regards the authorisation process for CTPs, organisational requirements and the publication of transactions for CTPs and other data reporting services providers.

117. ESMA has to publish on its website the list of CTPs authorised in the EU. As of the date of this final report, there are no authorised CTPs in the EU (see Section 4.2 for further information).

118. The main requirements applicable to equity CTPs include the obligation to consolidate the data:

¹⁷ In this respect, Article 90(3) of MiFID II further provides that the Commission is, where the procedure for the appointment of a CTP is launched, empowered to adopt delegated acts specifying measures in order to i.a. provide for the contract duration of the commercial entity operating a consolidated tape and the process and conditions for renewing the contract, provide that the commercial entity operating a CT shall do so on an exclusive basis; ensure that the post-trade information provided by the commercial entity operating a CT is of a high quality, in formats that are easily accessible and usable for market participants and in a consolidated format capturing the entire market; ensure that the post trade information is provided on an RCB; ensure that trading venues and APAs make their trade data available to the CT at a reasonable cost;

¹⁸ As of 1 January 2022, ESMA will be the competent authority for CTPs.

¹⁹ In the ESAs review, the provisions on DRSPs have been moved from MiFID II to MiFIR. Since the agreed text of the ESAs review has not yet been published in the OJ, this report keeps the references to the provisions currently set out in MiFID II. The changes in the ESAs review to not impact the content of these provisions as presented in this section.

- from all regulated markets, MTFs, OTFs and APAs (Article 65(3) of MiFID II). Where a new trading venue or APA starts operating, a CTP has to incorporate their data in its tape as soon as possible, and in any case within six months from the start of their operations (Article 15 of RTS 13);
- relating to all equity financial instruments (Article 15 of RTS 13). For instance, equity CTPs could not choose to consolidate only shares or ETFs, but are obliged to include shares, depositary receipts, ETFs, certificates and other similar financial instruments.

119. CTPs need to have adequate policies and arrangements in place to collect post-trade data, consolidate them into a continuous electronic data stream, make the information available to the public as close to real time as is technically possible, and provide the service on an RCB (see section 3.2.1 above on the legal sources on the RCB). In addition, following 15 minutes after the CTP published it, the information has to be made available free of charge.

120. CTPs should be able to efficiently and consistently disseminate the information in a way that ensures fast access to it, on a non-discriminatory basis (Article 86 of the CDR 2017/565, Article 19 of RTS 13) and in formats that are easily accessible and utilisable for market participants (Articles 14 and 20 of RTS 13).

121. CTPs are required to consolidate a minimum set of information and make it available to the public. Such information should include, among other things, the ISIN, transaction price and volume, the transaction time, the relevant venue.

122. In addition, the following requirements apply to CTPs:

- Management requirements:
 - The members of the CTP's management body have to meet the standard of sufficiently good repute, sufficient knowledge, skills and experience and commitment of sufficient time to perform their duties.
 - They are also required to act with honesty, integrity and independence of mind to effectively challenge the decisions of the senior management where necessary and to effectively oversee and monitor management decision-making where necessary.
- Further organisational requirements:
 - The need to operate and maintain effective administrative arrangements designed to prevent conflicts of interest (Article 65(4) of MiFID II);
 - The need to have sound security mechanisms in place. Such mechanisms should guarantee the security of the means of transfer of information and minimise the risk of data corruption and unauthorised access.

123. MiFID II/MiFIR do not require investment firms to consume the CT in order to meet best execution requirements. Nevertheless, Commission Delegated Regulation (EU) 2017/575²⁰ (RTS 27) and Commission Delegated Regulation (EU) 2017/576²¹ (RTS 28) recognise that a CTP could serve as an important complementary source for measuring execution quality and support best execution.²² Accordingly, RTS 28 encourages firms to provide, where applicable, in their summary on execution quality an explanation how they have used the output of a CT provider.

4.2 The reasons for the lack of a CTP for equity instruments

4.2.1 Feedback to the consultation

124. Despite calls from market participants pointing to the benefits that an equity CT would bring to EU markets, nearly two years following the application of MiFID II a CTP is yet to emerge. In the CP ESMA analysed the reasons for the lack of an equity tape in light of the current regulatory environment.

125. ESMA identified three main reasons that in its view hinder the creation of a CTP in the EU. The first reason identified in the CP was the lack of a business case and limited rewards of providing an equity CT. Secondly, ESMA noted that the MiFID II strict regulatory requirements make the creation of a CT challenging. Lastly, a CTP would also face competition from non-regulated entities, such as data vendors, who have in ESMA's view significant competitive advantages by not being subject to the same regulatory framework.

126. The vast majority of respondents agreed with ESMA's analysis. In addition, some respondents brought forward other factors that should be addressed to successfully establish an equity CT.

127. The most often stated challenge mentioned by respondents related to issues with quality, timing, consistency and completeness of data. For most participants, in order to successfully establish a CT, those issues would have to be resolved, with a particular focus on SI and OTC data where data quality is still perceived as being very low. A possible measure to overcome this issue, according to some participants, would be to promote harmonization of data standards.²³

128. In addition to data quality issues, market participants also raised the significant cost and complexity of market data agreements which complicate the role of the CTP to agree on terms and connect with all trading venues and APAs. A significant number of participants are of the view that the only way to make a CTP financially viable is to require mandatory

²⁰ Commission Delegated Regulation (EU) 2017/575 of 8 June 2016 supplementing Directive 2014/65/EU of the European Parliament and of the Council on markets in financial instruments with regard to regulatory technical standards concerning the data to be published by execution venues on the quality of execution of transactions, 31.3.2017, OJ L 87, p. 152.

²¹ Commission Delegated Regulation (EU) 2017/576 of 8 June 2016 supplementing Directive 2014/65/EU of the European Parliament and of the Council with regard to regulatory technical standards for the annual publication by investment firms of information on the identity of execution venues and on the quality of execution, 31.3. 2017, OJ L 87, p. 166.

²² See recital 16 of RTS 27 and Article 3(3)(h) of RTS 28.

²³ See the section 4.3 on ESMA's assessment and recommendations on a possible way forward to tackle this issue.



contribution of data by trading venues and APAs to the CT free of charge and hence avoiding these costs and complexities.

129. Some respondents, mainly regulated markets, acknowledged the specificities of the EU microstructure, in particular the EU trading landscape which includes over 170 trading venues and APAs. Therefore, these respondents are of the view that ESMA should not try to replicate any of the existing third-country models, i.e. the US and Canada, given that both the purpose and structure of these models would not be fit for purpose in the EU.

130. Despite the described issues and challenges facing the establishment of an equity CT, most respondents were of the view that they should not necessarily prevent the creation of the CT as those issues should eventually be resolved as the tape evolves. Therefore, most respondents recommended ESMA to keep working on the development of a regulatory landscape and governance model that promotes the creation of an equity CT.

131. In addition to the reasons highlighted above of why a CTP is yet to merge, respondents also shared their thoughts on which type of CT would best meet their needs. A majority of respondents are of the view that any CT should be real-time in order to best meet the needs of market participants. The main argument was that the goal of a CT should be to deliver low cost consolidated real-time post-trade market data for users.

132. One of the main arguments against this model related to latency issues. Some respondents, in particular regulated markets, considered that a real-time CT would only increase costs as investors would have to continue connecting directly to exchanges given the latency issues inherent to a real-time CT. In the view of these respondents, the focus should be on providing for an end of day tape of record covering all execution venues (incl. OTC) that would be comprehensive enough to cover mandatory regulatory use, such as best execution and requirements under the Market Abuse Regulation.

133. At the same time, many respondents, mainly data users, highlighted that latency would be only relevant for time sensitive investors, such as high frequency traders and in particular for pre-trade data. Since such investors would always connect directly to exchanges, in the view of many respondents this should not prevent the creation of a real-time solution.

4.2.2 ESMA's assessment and recommendations

134. ESMA agrees with respondents that there are other reasons in addition to those presented in the CP that hinder the successful establishment of an equity CT.

135. ESMA considers that the main reasons for the lack of an equity CT are the following:

- limited commercial rewards for operating an equity CT, in particular since the CT has to negotiate market data agreements with over 170 trading venues and APAs;
- strict regulatory requirements for providing an equity CT;
- the 15 minutes delay which limits the time within which the CT can commercialise the consolidated price information;



- competition by non-regulated entities such as data vendors; and
- lack of sufficient data quality, in particular for OTC - and SI- transactions.

136. ESMA agrees with respondents that data quality issues should be resolved as a priority and further measures should be taken in order to ensure the regulatory requirements are complied with. Nevertheless, ESMA is of the view that such identified issues should not preclude the development of an equity CT. The creation of the CT and the improvement of data quality should go hand in hand to resolve such problems.

137. In order to create the conditions that would facilitate the creation of a CT some solutions would have to be proposed in order to facilitate the tape's implementation. A detailed analysis of the key factors for the successful implementation of an equity CT is presented in section 4.5.

4.3 Availability, timeliness and quality of post-trade data information by existing commercial entities

4.3.1 Feedback to the consultation

138. Post-trade information is provided by trading venues, APAs and data providers. However, according to Articles 6 and 20 of MiFIR as well as Article 64(1) of MiFID II, trading venues and APAs are required to make public information on the price, volume and time of transactions as close to real-time as technically possible. These requirements are further specified in RTS 1, in particular in Articles 12-16 and tables 2, 3 and 4 of Annex I and in Article 18 of RTS 13. Post-trade transparency information provided by data vendors is not subject to these requirements.

139. In the CP, ESMA analysed three dimensions of the post-trade information currently published in real-time by trading venues, APAs and data vendors: availability, timeliness and quality.

140. With regard to data availability, ESMA acknowledged that post-trade information from trading venues and APAs is available to users and that the aggregation of data by data vendors replicates to some extent a CT. However, such aggregated data does not cover 100% of the market. In particular, small and/or highly specialised equity trading venues and data from APAs may not be included as the costs for aggregating post-trade information from all trading venues and APAs is significant, and there is only limited demand for such data.

141. Respondents to the CP agreed with ESMA's assessment and stated that more data is available for transactions concluded on trading venues than for OTC and SI transactions. However, one respondent believed that there is 100% coverage, but it is not consolidated in one single source mainly due to the difficulties of integrating different data sources in a consistent manner but also because of the need to negotiate the contractual rights separately with each venue and APA.

142. As far as timeliness is concerned, ESMA stated that it was not aware of concerns that trading venues and APAs do not make data available, including where a deferral applies, as close to real-time as technically possible. Furthermore, while data vendors are not subject to publishing information on a timely manner, ESMA considered that it was not aware of particular concerns regarding the timeliness of market data accessed via data vendors.

143. Most respondents to the CP agreed that post-trade data is provided on a timely basis. A number of respondents differentiated between data from trading venues and the data from SIs and OTC. While on-venue data seems to be provided in a timely and reliable way, for OTC and SI data concerns were raised regarding the reporting of trades within one minute for equity and equity-like products, as required by the regulation. A few respondents considered that it was challenging to assess whether the requirements set out in MiFIR and in the Level 2 provisions are met since they perceive an inconsistency of data quality and delivery systems.

144. A number of respondents stated how significant delays in off-venue transactions do not support high quality consolidated data. In their view different regulatory requirements as regards to timeliness for reporting transactions concluded on-venue vs OTC transactions create constraints with the consolidation of information and make it difficult to have a full view of the market.

145. The last dimension analysed in the CP concerned data quality. ESMA identified in the CP a number of shortcomings, mainly on the quality of market data for OTC-transactions. These included in particular:

- inconsistent reference data and missing attributes for trades;
- publication of erroneous information (e.g. incorrect/implausible price or quantity, implausible transaction times);
- duplicative trade reports for OTC transactions;
- inclusion of non-price forming trades/non-addressable liquidity for transactions reported by APAs; and
- inconsistent use of flags for the purpose of post-trade transparency as specified in Table 4 of Annex I of RTS 1 (e.g. inconsistent use of the cancel and amendment flags).

146. Furthermore, in the CP ESMA expressed some concerns in view of the different data standards used by reporting entities which add further challenges for consolidating market data.

147. Most respondents to the CP agreed with the issues on the content of data identified in the CP and considered that a broader and more consistent implementation of the Market Model Typology (MMT) standard across SI and OTC trade reporting would be desirable. At the same time, several respondents highlighted that the situation has been improving and that currently several industry workstreams are working on consistency/data quality issues.



148. In addition to the shortcomings identified in the CP the following issues were raised:

- lack of standardisation for the reporting and flagging of non-addressable liquidity and non-price forming trades;
- lack of a centralised 'golden source' for reference data to classify instruments correctly and determine applicable reporting requirements;
- need to review the trade reporting responsibilities for OTC-trades;
- need to further improve the quality of ESMA IT systems (FIRDS/FITRS);
- lack of a trusted, complete and common record of SI status for equity instruments; and
- ensure enforcement of reporting requirements by regulators.

149. Nevertheless, some stakeholders considered that the current situation should not prevent establishing a CTP in parallel and pointed out that a CT could further leverage and enforce data quality improvements.

150. Concerning the use of different data standards, the feedback to the CP was mixed. Whereas some respondents, in particular data users, were in favour of using common standards, most trading venues disagreed, stressing that data standards are used by trading venues as a means of competition. Furthermore, trading venues stressed that their formats are well known to the market and can already be easily consolidated.

4.3.2 ESMA's assessment and recommendations

151. The feedback to the CP broadly confirmed ESMA's assessment on the availability, timeliness and quality of post-trade information.

152. Concerning the availability of market data, ESMA concludes that while post-trade information is available from trading venues and APAs and also offered by data vendors, there is currently no data source consolidating 100% of the market, which is also linked to data quality issues for OTC and SI transactions.

153. Tables 1 and 2 below present the number of trading venues and APAs providing post-trade transparency information per country and the type of data offered by each data vendor.

TABLE 2 NUMBER OF TRADING VENUES AND APAs IN EACH COUNTRY

COUNTRY CODE	COUNTRY	RMs	MTFs	APAs
AT	AUSTRIA	2	1	1
BE	BELGIUM	1	4	-
BG	BULGARIA	2	2	1
CY	CYPRUS	1	1	-
CZ	CZECH REPUBLIC	2	2	-
DE	GERMANY	15	17	1
DK	DENMARK	3	4	-
EE	ESTONIA	1	1	-
ES	SPAIN	4	2	1
FI	FINLAND	3	4	-
FR	FRANCE	1	6	1
GB	UNITED KINGDOM	6	30	5
GR	GREECE	1	1	1
HR	CROATIA	1	1	1
HU	HUNGARY	1	2	-
IE	IRELAND	1	3	-
IS	ICELAND	3	3	-
IT	ITALY	3	5	-
LI	LIECHTENSTEIN	-	-	-
LT	LITHUANIA	1	1	-
LU	LUXEMBOURG	1	1	-
LV	LATVIA	1	1	-
MT	MALTA	1	1	-
NL	NETHERLANDS	1	3	3
NO	NORWAY	2	1	1
PL	POLAND	-	-	-
PT	PORTUGAL	1	2	-
RO	ROMANIA	1	1	-
SE	SWEDEN	5	9	1
SI	SLOVENIA	1	1	-
SK	SLOVAK REPUBLIC	1	1	-
		67	111	17

(*) The table includes trading venues and APAs (in terms of segment MICs) that reported quantitative data reports related to the trading activity of equity and equity-like instruments to FITRS over the period Jan-2018 - Aug-2019.

(**) The number of Polish venues and APAs is zero because Poland is a non-delegating country, i.e. an NCA who has not signed a Delegation Agreement with ESMA on the Instruments Reference Data Project

Source: FITRS

TABLE 3 DATA PROVIDED BY DATA VENDORS²⁴

	Real-time data	Historical data	Pre-trade data	Post-trade data	Equity and equity-like instruments	Non-equity instruments

²⁴ See Annex III for a detailed overview on data provided by data vendors.

Bloomberg Market Data – “B-PIPE”	✓	✓	✓	✓	✓	✓
Thomson Reuters/Refinitiv – Elektron	✓	✓	✓	✓	✓	✓
Morningstar	✓	✓	✓	✓	✓	✓
Fidessa	✓	✓	✓			✓
ICE Consolidated Feed/ Interactive data	✓	✓	✓	✓	✓	✓
QuantHouse	✓	✓	✓	NA	NA	NA
MarketAxess	✓	✓	✓	✓		✓
VWM data services	NA	NA	NA	NA	NA	NA
Six Financial Information	NA	NA	NA	NA	NA	NA
MTS data	✓	✓	✓	✓		✓
BMLL	NA	NA	✓	NA	✓	✓

NA means that it was not possible to assess if the related type of data is offered by the data vendor

154. Concerning the timeliness of post-trade information, ESMA concludes that in general real time post-trade information is published in a timely manner, but that there are some shortcomings due to differences in the reporting requirements for transactions concluded on trading venues and OTC transactions and that deferrals can diminish the usefulness of real-time data. ESMA intends to look into these issues in the context of the review report on the MiFIR transparency regime.

155. ESMA is of the view that improved data quality is not only a prerequisite for establishing a CT but indispensable to allow the consolidation of all post-trade information at low cost thus ensuring that the information published enables market participants to obtain a



comprehensive and accurate view of the market, thereby contributing to improved price discovery.

156. ESMA agrees with the feedback received by stakeholders that data quality is an area where currently there are still significant shortcomings, in particular for OTC data, and that more work needs to be done. ESMA intends therefore to work on further improving data quality, in close collaboration with CAs and market participants, to attain such high standards.

157. ESMA considers that such work can be carried out in parallel to establishing a CT and the drive towards a CT may in fact lead to timely improvements on the OTC side. Such work could largely be delivered via supervisory guidance. In addition, the potential establishment of a CT would require Level 1 and Level 2 changes that should cover in ESMA's view also aspects towards ensuring a high level of data quality (see section 4.5.1). Finally, in order to ensure consistent reporting, ESMA recommends that more priority should be given to enforcement measures by CAs in case of identified deficiencies.

158. Concerning the harmonisation of data standards, ESMA is of the view that it would be beneficial to require that all trading venues and APAs publish post-trade information using the same data standard. At the same time, ESMA understands the concerns expressed by trading venues that this may affect the level playing field between trading venues.

159. While ESMA considers that it should not be an issue for trading venues to publish market data in a format that ensures fast access to the information and that is easily accessible and utilisable (see section 3.4), the requirement of using a harmonised standard could be limited to the submission of data to a potential CT. This would allow trading venues to maintain their data standards when entering into market data agreements with data vendors and other data users.

4.4 Assessment of the risks of having no CTP for equity instruments in the EU

4.4.1 Feedback to the consultation

160. In the CP, ESMA identified that the main risk of not having a CTP corresponds to the risk of not having the benefit that the presence of a CT can provide. Those benefits are:

- the availability of consolidated post-trade data on a timely manner, easily accessible and usable format;
- higher data quality thanks to the CTP investments in this regard as to provide meaningful information to market participants;
- post-trade information related to the trading activity on and off-venue for any equity and equity-like instrument available in a single place, in the same format and at lower prices compared to obtaining the data from every single trading venue and APA;
- data provided for free 15 minutes after publication;



- reduced market power of data vendors, APAs and trading venues.

161. In the CP, ESMA identified some factors that could reduce the risks of not having a CT, for example by requiring trading venues and APAs to provide post-trade data in a more standardised format (e.g. providing the information in the same currency or using the same standards and technology) or providing more detailed and clearer reporting rules.

162. Most of the respondents to the CP agreed with the benefits identified and acknowledge that a CTP would:

- remove existing information asymmetries and remedy the current fragmentation of the market and the current unlevel playing field, thereby providing a reliable view on liquidity to all market participants;
- improve liquidity and promote market resiliency since less asymmetric information ensures that changes in supply and demand are more efficiently reflected in current price levels;
- be a neutral and reliable source of the current market price, giving investors confidence to trade and supporting best execution;
- increase market competition and limit the power of trading venues and data providers;
- be an important catalyst for European markets to develop further and contribute to the Capital Markets Union (CMU).

163. Market participants, in particular trading venues and data vendors, disagreeing with the benefits of having a CTP provided different arguments in favour of not having a CT or on the impossibility of having one. In particular:

- a negative cost/benefit analysis would prevent the set-up of the CTP; more specifically, the CTP would cause additional costs for participants having to pay for both the CT and data from exchanges;
- the CTP would have no possibility to deliver a product of quality due to the lack of a governance structure that prevents CTPs from imposing standards on data providers;
- mandating the same format/protocol to send data would eliminate a competition factor among trading venues;
- the quality of the data would not improve since it is due to reporting entities;
- since there is neither a regulatory use case nor a requirement to use consolidated data, there is a lack of funding for a CTP;
- data vendors provide competitive solutions to the needs of their customers at a significantly lower cost than consuming individual sources and integrating them onsite/inhouse.

164. Finally, a number of trading venues supported the set-up of a “tape of record” (TOR) considering that it has a number of advantages compared to a real-time CTP (see section 4.5.5).

4.4.2 ESMA’s assessment and recommendations

165. ESMA acknowledges that a CT, assuming that there would be no changes to the legal framework, might create significant costs as set out by some respondents mentioned in paragraph 163. However, ESMA points to the mandate for assessing the functioning of a CT. Should there be a decision to appoint a CT, the Commission would have significant room under Article 90(3) of MiFID II to adjust the legal framework under which the CT is operating.

166. ESMA considers, taking into consideration the support expressed by a majority of respondents, that there is a valid case for establishing a CT. Key aspects to be considered in the case of such an establishment, as well as some reflections on the governance model for a CT are presented in section 4.5.

4.5 Assessment of key factors for the successful establishment of a CTP for equity instruments

4.5.1 Recommendation to establish a CT

167. In the CP, ESMA presented a number of factors it considered essential for developing the governance model of a CT with the ultimate objective of establishing a real-time CT.

168. The discussion on the willingness and need of establishing a CT in the EU has been ongoing for many years. MiFID II aimed at achieving the establishment of a CT by a commercial entity. However, for the reasons presented in section 4.2, to date no commercial CTP has emerged and it appears unlikely that within the current legal framework a CTP will emerge in the future.

169. ESMA considers that a CT for equity instruments could deliver significant benefits. In particular, and taking into account the feedback received from stakeholders to the CP, a CT:

- would contribute to remedying the fragmentation of markets and allowing market participants to have a reliable view of liquidity across the Union;
- would contribute to establishing a CMU and add to the creation of a real single market for equity trading in the Union;
- would limit to some extent the market power of trading venues when selling real-time post-trade data; and
- could be used for supplementing best execution policies, in particular for retail investors.



170. At the same time, ESMA acknowledges, as also highlighted by respondents to the CP, that there are arguments against the establishment of a CT. In particular:

- the current level of OTC data quality is insufficient to allow for the establishment of a CT;
- a CT may result in higher prices for market data not covered by the CT in case trading venues and APAs try to recover lost revenues;
- potentially high costs for establishing a CT.

171. Nevertheless, ESMA considers that the advantages of establishing a CT outweigh the arguments against such establishment.

172. First, as presented in section 3.5, ESMA intends to issue further guidance on the provision of market data, and in particular on the concept of providing market data on an RCB. This should address concerns that establishing a CT may result in higher prices for market data not covered by the CT.

173. Second, ESMA acknowledges the current shortcomings of, in particular, OTC data and will, in close cooperation with CAs and market participants, work towards improving data quality. In addition, ESMA considers that a CT could also be an important driver towards establishing more consistent reporting standards.

174. Finally, ESMA considers that it should be possible to address the arguments against establishing a CT when developing the governance model of the CT.

175. ESMA therefore recommends to the Commission to appoint a CT for equity instruments in the EU as provided for under Article 90(3) of MiFID II based on the key factors discussed in the following sections and taking into account the experiences made with CTs in Canada and the US (see the boxes below).

176. It is important to highlight that significant further work on the specification of most of the key factors presented will be necessary should the EC and co-legislators opt for the establishment of a CT. Furthermore, appointing a CT will require changes to the legal framework, both at the level of MiFID II/MiFIR but also at Level 2. ESMA's analysis of the key factors includes therefore a short assessment of the necessary changes to the current legal framework. However, this is only an initial assessment and would need to be complemented by a granular assessment of the necessary changes to the legal framework, should it be decided to establish a CT. ESMA stands ready to provide further technical advice in this area.

177. Finally, EMA considers that given the complexity of this project and the need to amend the legal framework, the time for establishing a CT should not be underestimated and that the period between the decision of establishing a CT until the go-live of such a tape could easily span 5 years, if not more.

Box 2: The Consolidated Tape in Canada

In Canada, the requirements relating to transparency and the consolidated feed are part of National Instrument (NI) 21-101²⁵.

Part 7 of this instrument requires a marketplace²⁶ to provide accurate and timely information regarding orders/trades for the exchange-traded securities displayed/executed by the marketplace to an information processor (IP). That pre- and post-trade information cannot be disclosed to any person or company before that information is available to an IP. The IP must produce an accurate consolidated feed in real-time showing the information provided to the information processor.

In Canada, the IP is selected by the Canadian Securities Administrators (CSA). Part 14 of NI 21-101 sets out the operation and regulatory requirements an IP needs to comply with including:

- a requirement to provide prompt and accurate order and trade information and to not unreasonably restrict fair access to such information;
- a requirement to provide timely, accurate, reliable and fair collection, processing, distribution and publication of information for orders for, and trades in, securities;
- an obligation to maintain reasonable books and records; and
- certain system requirements, including an annual independent systems review.

TMX IP (part of the Toronto Stock Exchange group) has been the IP for exchange-traded securities other than options since 2009 and it has been announced in 2018 that it will continue to act as an IP until the end of June 2022²⁷. TMX IP collects data from relevant marketplaces (currently 15) and is authorised to consolidate and disseminate this data.

An IP supports the transparency requirements by collecting, consolidating and disseminating marketplace data and thus making available at least one source of consolidated data to investors and market participants. The transparency requirements and in particular the availability of timely and accurate data is critical to the regulatory framework and support fair and efficient markets and confidence in those markets. However, whilst there is a requirement for all trading venues to send their market data to a regulated IP, its use is not mandatory.

The consolidated information provided by the IP facilitates compliance by marketplace participants with relevant regulatory requirements that apply in a multiple marketplace environment by ensuring the availability of consolidated data that meets regulatory

²⁵ https://www.osc.gov.on.ca/en/SecuritiesLaw_rule_20190418_21-101_marketplace-operation.htm.

²⁶ "marketplace", means (a) in every jurisdiction other than Ontario, means (i) an exchange, (ii) a quotation and trade reporting system, (iii) a person or company not included in clause (i) or (ii) that (A) constitutes, maintains or provides a market or facility for bringing together buyers and sellers of securities, (B) brings together the orders for securities of multiple buyers and sellers, and (C) uses established, non-discretionary methods under which the orders interact with each other, and the buyers and sellers entering the orders agree to the terms of a trade, or (iv) a dealer that executes a trade of an exchange-traded security outside of a marketplace, but does not include an inter-dealer bond broker, and (b) in Ontario has the meaning set out in subsection 1(1) of the *Securities Act* (Ontario).

²⁷ CSA Staff Notice 21-324 *Information Processor for Exchange-Traded Securities other than Options* was published in 2009 to inform the public that TMX IP would act as an IP until 30 June 2022.

standards and which users can use to demonstrate or evaluate compliance with these requirements. However, despite the requirement that a marketplace send the information to the IP at least at the same time as any other company, since the IP has to consolidate the information, its feed will be slower than direct feeds due to the latency added by the consolidation process. Therefore, those firms that are speed-sensitive (for example high frequency traders) will always connect directly to marketplaces to avoid latency issues. In addition, because of the timing of the introduction of the IP, many marketplace participants had already established mechanisms to consolidate data across marketplaces and these approaches continued to be used after the launch of the IP.

The IP is required to establish, in a timely manner, an electronic connection to each marketplace that is required to provide transparency information, and also to enter into an agreement with each such marketplace. The agreement must set out that the marketplace will provide the IP information in accordance with the transparency requirements and that it will comply with any other reasonable requirements set by the IP. Since there is a legal obligation to trade shares on-exchange (i.e. no OTC trading), the IP will consolidate transparency information for the overall market.

The TMX IP uses a "pass-through" fee model, where the contributing marketplaces enter into contractual agreements with data vendors and subscribers directly, allowing each marketplace's fees to be passed through to the clients and paid to the marketplaces. To recover some of its operational costs the TMX IP charges a monthly administration fee for access to the Consolidated Products. The fees are published on the TMX IP's website and reviewed by the CSA.

Box 3: The consolidated tape in the US

Consolidated tapes (CTs) have been used in the United States of America since the mid-1970s, and are therefore a stable and important feature in the US trading data landscape. The main legal requirements underlying the establishment and functioning of CTs are included in Section 11A of the Securities Exchange Act of 1934 (Act). Regulation National Market System (Regulation NMS) adopted by the Securities and Exchange Commission (SEC) under Section 11A of the Act includes certain market data rules which are intended to promote the wide availability of market information to investors. Reference is made, *inter alia*, to rules 600, 601, 602, 603 and 608 of Regulation NMS.²⁸ A summary of the main features of the U.S. consolidated data regime is included below. For any detailed information, please refer to the above-mentioned rules of Regulation NMS.

First, national securities exchanges and FINRA are required to act jointly pursuant to national market system plans to establish CTs for NMS stocks (Rule 603(b) of Regulation NMS). Under the plans, national securities exchanges and national securities associations²⁹ are required to submit their best-priced quotations for and transactions in NMS stocks to a

²⁸ 17 CFR 242.600 through 242.603 and 17 CFR 242.608 can be found online in the U.S. Code of Federal Regulation at https://www.ecfr.gov/cgi-bin/text-idx?SID=e6a142e898fa89643580d8f86579ac4d&mc=true&node=pt17.4.242&rgn=div5#se17.4.242_1601.

²⁹ Associations of brokers and dealers are registered pursuant to Section 15A of the Act. The Financial Industry Regulatory Authority, Inc. (FINRA) is currently the only registered national securities association.

data processor designated by the plans (mandatory contribution). The plan processors disseminate consolidated information, including a national best bid and national best offer, on quotations for and transactions in NMS stocks. Such plans provide for the dissemination of all consolidated information for an individual NMS stock through a single plan processor (Rule 603(b) of Regulation NMS). The obligation to submit data to a single plan processor concerns both pre-trade data (quotation) and real time post-trade (transaction) data (Rules 601, 602 and 603 of Regulation NMS).

In addition, no securities information processor, broker, or dealer shall provide, in a context in which a trading or order-routing decision can be implemented, a display of any information with respect to quotations for or transactions in a stock without also providing, in an equivalent manner, a consolidated display for such stock (mandatory use under the so-called Vendor Display Rule, Rule 603(c) of Regulation NMS). Furthermore, for best execution purposes under the Act and FINRA rules, broker-dealers must use reasonable diligence to ascertain the “best market” for the relevant security. Among the factors considered in determining whether a FINRA member has used reasonable diligence is the number of markets checked (see FINRA Rule 5310³⁰).

The CT national market system plans and amendments thereto have to be filed jointly by all of the exchanges and FINRA for approval by the SEC (Rules 601 and 608 of Regulation NMS). Among other things, under Rules 601 and 608 of Regulation NMS, the information that the plans must submit to the SEC includes:

- the manner of collecting, processing, sequencing, making available and disseminating the transaction data;
- the manner of consolidating transaction data from the exchanges and national securities associations;
- applicable standards and methods which will be utilized to ensure promptness of reporting, and accuracy and completeness of transaction reports;
- terms of access to the transaction reports; and,
- establishing or changing a fee collected on behalf of the participants of the Plan.

As of today, there are three joint-industry plans for CTs in the U.S: the Consolidated Tape Association (CTA) Plan, the Consolidated Quotation (CQ) Plan (CTA/CQ Plans), and the Joint Self-Regulatory Organization Plan Governing the Collection, Consolidation, and Dissemination of Quotation and Transaction Information for Nasdaq-Listed Securities Traded on Exchanges on an Unlisted Trading Privileges Basis (Nasdaq/UTP Plan).³¹

³⁰ Available at this link http://finra.complinet.com/en/display/display_main.html?rbid=2403&element_id=10455.

³¹ As of the date of this review report, the participants in the CTA/CQ Plans and Nasdaq/UTP Plan include the Cboe BYX Exchange, Inc., Cboe BZX Exchange, Inc., Cboe EDGA Exchange, Inc., Cboe EDGX Exchange, Inc., Cboe Exchange, Inc., Financial Industry Regulatory Authority, Inc., Investors Exchange LLC, Nasdaq BX, Inc., Nasdaq ISE, LLC, Nasdaq PHLX LLC, Nasdaq Stock Market LLC, New York Stock Exchange LLC, NYSE American LLC, NYSE Arca, Inc., NYSE Chicago, Inc., and NYSE National, Inc. The CTA/CQ Plans and

Pursuant to the CTA/CQ Plans and the Nasdaq/UTP Plan, three separate networks disseminate consolidated data for equity securities: (1) Network A for securities listed on the New York Stock Exchange LLC (NYSE); (2) Network B for securities listed on exchanges other than NYSE and The Nasdaq Stock Market LLC (Nasdaq); and (3) Network C for securities listed on Nasdaq.

Under the CTA/CQ Plans and the Nasdaq/UTP Plan, revenue from fees, after deduction of direct Plan expenses, is allocated to each equity symbol in accordance with the Plan's revenue allocation formulas. Pursuant to the formulas, the revenue for each symbol is then distributed to each Plan Participant (exchanges and FINRA). Revenue for each symbol is allocated 50% for quoting activity and 50% for trading activity of participants in the symbol. The NMS Plan revenue allocation formulas are intended to allocate plan revenues to Plan Participants for their contributions to public price discovery and promote wider and more efficient distribution of market data.³²

Pursuant to the statutory authority in Section 11A of the Act, Rule 603 of Regulation NMS requires the distribution of information with respect to quotations for or transactions in a stock on terms that are fair and reasonable, and not unreasonably discriminatory. The fees imposed on CT data subscribers are filed with the SEC and published on the Plans' websites.

Different types of subscriptions are offered with varying fee amounts. For instance, they include professional subscriber charges, non-professional subscriber charges, per query charges, enterprise license charges, redistribution charges, non-display use charges, direct data access charges, indirect data access charges, and other type of charges in the Plan's fee schedule.³³

With reference to the use of the CTs, the SEC staff identified a number of issues.³⁴ One issue is latency, since data from CTs is slower than exchange proprietary data feeds due in part to communications protocols, aggregation times, and geographical latencies associated with single point of consolidation. The consequence is that certain market participants that subscribe to the CTs may also decide to purchase data directly from the exchanges to provide competitive execution services to their clients and to meet their best execution obligations. In this respect, the SEC staff indicated that it will consider whether to recommend changes to ensure that consolidated data is timely disseminated. Another issue is the content of the consolidated data and whether the current information disseminated by CTs is sufficient for trading in the US markets. For example, SEC staff has indicated that it is considering several key areas including odd lots and depth of book. In addition, the SEC staff is also looking at other key areas, including the governance of the Plans, the

Nasdaq/UTP Plans, as approved by the Securities and Exchange Commission, are available on the websites: www.ctaplan.com and www.utpplan.com.

³² For instance, for the detailed provisions covering the allocation of expenses and income, see Section XII of the CTA Plan, available on www.ctaplan.com

³³ Among others, see <https://www.ctaplan.com/publicdocs/ctaplan/notifications/trader-update/Schedule%20Of%20Market%20Data%20Charges%20-%20January%201,%202015.pdf>

³⁴ Equity Market Structure 2019: Looking Back & Moving Forward, speeches by Chairman Jay Clayton and Brett Redfearn, Director, Division of Trading and Markets, Remarks at Gabelli School of Business, Fordham University, March 8, 2019, available at <https://www.sec.gov/news/speech/clayton-redfearn-equity-market-structure-2019>

transparency of costs and revenues associated with the Plans together with other exchange related businesses, and into an assessment of the contribution by the CTs to fair and efficient access to market data.

4.5.2 Quality of the data input to the CTP

4.5.2.1 Feedback to the consultation

178. In the CP ESMA suggested that the consistency and comparability of data coming from different sources was a prerequisite for ensuring meaningful post-trade transparency and the successful establishment of a CT (see also Article 90(3)(d) of MiFID II). Consolidating data from all APAs and trading venues requires that the data coming from trading venues and APAs abide by the same quality standards.

179. ESMA therefore suggested in the CP to achieve an adequate level of data quality through (i) the standardisation of the reporting by both trading venues and APAs, and (ii) mechanisms to reduce reporting errors. ESMA sought in particular feedback from stakeholders on which aspects such data quality work should focus and whether further guidance should be developed by an industry-led initiative (such as FIX Trading Community Market Model Typology – MMT) or via ESMA guidance.

180. Most respondents agreed with ESMA's assessment in the CP and identified the following main areas on which further guidance would be necessary for the successful establishment of a CT:

- clock synchronisation across all venues and SIs and same granularity of timestamp as that of venues by APAs (i.e. for both SI and OTC trading);
- consistent reference data, especially for the identification of instruments;
- mandatory reporting of all trades to the CT, i.e. addressable and non-addressable liquidity;
- consistent flagging of trades at SI and OTC level, e.g. extending the MMT model to all market participants;
- proper consolidation of trades reported under the different deferral regimes.

181. Concerning the question whether such work should be carried out by an industry-led initiative and/or ESMA guidance, most respondents were in favour of either an industry-led initiative or a combination of an industry-led initiative and ESMA guidance.

4.5.2.2 ESMA's assessment and recommendations

182. Also in light of the strong support of stakeholders, ESMA maintains its view that data quality is key to the success of the CTP, as users are not likely to subscribe to a CT unless



the data provided is reliable and meets high quality standards. ESMA agrees that the issues highlighted by stakeholders above as well as broader data quality issues on post-trade data (see section 4.3) are important to address to ensure adequate data quality.

183. In view of the feedback received, which considered that such guidance should be jointly developed by ESMA and an industry initiative, ESMA intends to launch work, in close cooperation with CAs and market participants to tackle the issues identified. ESMA considers that such work could be carried out in parallel to the work necessary for establishing a CT.

184. Such data quality work could to a large extent be based on supervisory guidance. However, some aspects, e.g. on clock synchronisation may require changes to the legal framework.

4.5.3 Mandatory contribution of post-trade data by trading venues and APAs

4.5.3.1 Feedback to the consultation

185. In the CP, ESMA recalled that MiFID II does not oblige trading venues and APAs to submit dataflow to CTPs, nor does it set forth (more) favourable economic conditions for CTPs to obtain such data. As a consequence, ESMA concluded that the costs for accessing the direct dataflow of APAs and trading venues, coupled with the regulatory requirement for CTPs to consolidate data from every trading venue and APA, makes the CTP service provision particularly burdensome and discourages potential operators from providing a CTP.

186. Therefore, ESMA suggested that trading venues and APAs should be required to provide data to the CTP (as also reflected in Article 90(3)(f) of MiFID II), either by (i) requesting trading venues and APAs to provide data to the CTP, or, (ii) setting forth criteria to determine the price that CTPs should pay to trading venues and APAs for the data.

187. Overall respondents, both users and trading venues, agreed with ESMA that the mandatory contribution from trading venues and APAs to the CT would allow a CT establishment, ensuring ultimately a business case for the CT. There was also the perception that the mandatory contribution could lower the cost of market data.

188. Some respondents, however, pointed out that mandatory contribution could constitute a disincentive for trading venues and APAs to produce high quality data. Those respondents considered that such risk could be minimised by redistributing the CT's revenues to the relevant trading venues and APAs, or by fairly compensating trading venues and APAs for their data. In addition, respondents considered that mandatory contribution could be combined with rules establishing data quality standards and oversight to ensure data consistency.

189. Concerning the model to be used for implementing such mandatory contribution, overall, respondents expressed a clear preference for the option under (i), i.e. requiring trading venues and APAs to provide data to the CTP. A few respondents indicated that the data should be submitted by trading venues and APAs to the CTP free of charge to ensure that the resulting price charged for access to the CT is affordable to the widest possible audience.



However, most respondents were in favour of compensating trading venues and APAs for submitting their data by requiring the CTP to share revenues with contributing trading venues and APAs, for instance based on the market share represented by the data provided, or by trade type (e.g. price-forming trades would receive a higher share of the revenues).

4.5.3.2 ESMA's assessment and recommendations

190. In view of the strong support of stakeholders, ESMA maintains its view that mandatory contribution of data by trading venues and APAs to the CT is a key factor for the successful establishment of a CT.

191. As indicated above, the current MiFID II requirements oblige the CT to consolidate data coming from all trading venues and APAs. Considering the high number of trading venues and APAs operating in the European Union, mandatory contribution would constitute a tool to ensure that the data consolidated by the CT is complete. It would also facilitate the data consolidation from newly established trading venues and APAs.

192. Secondly, to address respondents' concerns that the mandatory reporting could have a negative impact on data quality and to compensate trading venues and APAs that will have to face additional costs linked to this obligation, ESMA recommends that trading venues and APAs should provide the data to the CTP free of charge, but in return the CTP would be required to share revenues with reporting entities.

193. In this respect, it will be important to define an appropriate percentage of revenues to be shared with the reporting entities, as the CT will have to (i) compensate the costs incurred by trading venues and APAs for providing the data and (ii) maintain the operation of the CT economically attractive (see Section 4.5.8.2 for further considerations on the redistribution of CT revenues).

194. Also based on experience collected from the US, ESMA wishes to highlight that establishing such a revenue formula is a technically demanding and time-consuming task. This is just one aspect of the establishment of a CT which should indicate that such establishment is a project of a substantial dimension which will require adequate resources and time to be delivered.

195. While Article 90(3)(f) of MiFID II already reflects the possibility of mandatory contribution, it would nevertheless require the amendment of the legal framework (Level 1 change), which would most likely need to be accompanied by Level 2 measures further specifying the revenue formula.

4.5.4 Mandatory consumption

4.5.4.1 Feedback to the consultation

196. The CP discussed whether, similar to the approach in the US, the consumption of the CT should be mandatory. Stakeholders expressed mixed views on the mandatory consumption of the CT.

197. Most data users were not supportive of mandatory consumption, whereas most trading venues were in favour of both mandatory consumption as well as mandatory funding of the CT.

198. The main arguments against mandatory consumption are:

- it forces market participants to pay for data they may not need or require;
- it removes incentives for the CTP to provide a cost-effective and high-quality tape;
- there would be enough natural demand for a CT if it is of high quality; and
- the current best execution requirements do not require achieving best execution on a trade-by-trade basis and include also other factors than the price.

199. As regards the last argument, a number of respondents considered that mandatory consumption is likely to impact the best execution regime and raised concerns that the mandatory consumption of the CT could result in a more rigid best execution regime limiting the flexibility of firms in designing their best execution policies.

200. The main arguments in favour of mandatory consumption are:

- it would ensure funding and revenues of the CT particularly in the critical start-up phase of a CT;
- it would create the necessary economies of scale for providing the CT at a low cost; and
- it would ensure a contribution to the establishment and on-going operation of the CT by some of the entities asking for the establishment of the CT in the first place.

4.5.4.2 ESMA's assessment and recommendations

201. ESMA agrees with the view that in an ideal situation a high-quality CT should in itself be attractive enough to create sufficient demand. Nevertheless, ESMA is aware that the development of a CT will take a significant amount of time and resources and that during the establishment phase, the CT will not yet generate any revenues.

202. Moreover, it cannot be excluded that at the start of the operation of the CT the data quality of the CT may not immediately be perfect as realistically a project of such magnitude will take some time to settle in. Hence, initially demand for the CT may be low, thereby limiting the revenues available to the CT, which would in turn limit the funds available to the CT to improve the data quality of the CT. This could start a vicious cycle, where in the end no data user is consuming the CT due to data quality issues. There is hence a significant risk that without mandatory consumption the CT will either not take off in the first place or the data published by the CT will be of low quality, ultimately forcing the CT to stop operating.

203. It should also be taken into consideration that the CT will need a critical mass of users in order to be able to offer the consolidated data at attractive prices. The more users the CT has, the lower the costs per user will be.

204. ESMA believes that market users have to acknowledge that establishing a CT comes at a cost. While data users are looking for reduced overall cost of market data and an easier consolidated look at the European marketplace, ESMA considers that it is reasonable for market data users to contribute to the costs of attaining these goals which would be for the benefit of data users and the European market structure as a whole. It should be noted that the US opted for a mandatory consumption of the CT.

205. ESMA considers that the establishment of a CT would appear more likely if there was mandatory consumption of the consolidated data. Such mandatory consumption may in particular be considered for the first years of operation of the CT until the CT is sufficiently established.

206. Should the Commission and co-legislators opt for mandatory consumption further consideration should be given as to whether it should cover all investment services and activities, or whether certain investment services could be exempted. While a broad scope would increase the number of potential users, it might be perceived as burdensome for smaller firms only providing a very limited range of services.

207. Moreover, in the case of mandatory consumption ESMA considers that a proportionate mandatory consumption key would have to be an integral part of the fee model of the CT. For instance, in order to reflect that not all firms would use the CT in the same manner and to the same extent, a proportionate model would not require firms to consume all the data of the CT and the CT could provide for different types of subscriptions to the CT with varying fee amounts. For instance, the CT could charge a low basic fee to all users, which could be complemented by a fee based on actual use of the CT.

208. The current legal framework does not provide for a mandatory consumption or any form of mandatory contribution by users of the CT. Introducing this element would hence require a change of the Level 1 text, which should also include an empowerment to develop Level 2 measures to specify the detailed criteria for ensuring a proportionate application and specify whether certain investment services and activities may not be subject to the mandatory consumption.

209. As regards the concern that the CT would charge unreasonably high fees, ESMA recalls that the provision to provide market data on an RCB also applies to the CT and ESMA would not recommend changing this requirement for the CT.

210. Finally, concerning best execution, ESMA does not recommend at this stage to require the use of the CT to meet best execution requirements, but considers that the CT data would be useful for ex post best execution quality monitoring. It should be noted that, in particular for orders executed on behalf of retail clients, the price of a transaction is, together with the costs relating to execution, one of the key factors to meet the best execution requirements. This is also already reflected in RTS 27 and 28 which allow to use the CTP for measuring execution quality and support best execution.



4.5.5 Coverage – trading venues and APAs and asset classes

4.5.5.1 Feedback to the consultation

211. As indicated in the CP, the MiFID II framework provides that CTPs should consolidate data from all trading venues and APAs in the EU, which means that they consolidate 100% of the transactions concerning shares, depositary receipts, ETFs, certificates and other similar financial instruments. The high number of trading venues and APAs from which the CTP has an obligation to consolidate data from and the broad scope of instruments to be covered render the CTP's role difficult to perform and costly. ESMA sought stakeholders' feedback in the CP as to whether the scope of the transactions to be covered by the CTP and/or of the financial instruments to be included should be reduced to make it easier to provide a CT.

212. The large majority of respondents to the CP considered that the CT should have full coverage of the market to provide a complete overview of the trading activity. The main supporting argument for this view was that a comprehensive coverage is fundamental for transaction cost analysis, best execution assessment and general market research. Some respondents also stated that, considering the growth of trading on SIs, it is crucial that SI trading, as well as OTC, are included in the scope. Otherwise, not only would the CT not be comprehensive, but also the data quality and consistency issues would not be addressed.

213. Regarding the limitation of types of instruments, in general stakeholders considered that limiting the scope, for instance, to shares only would not simplify the general structure of the CTP or reduce the number of relevant trading venues and APAs, therefore the tape should include all instrument classes.

214. At the same time, some respondents were of the view that the scope of the CT should only be partial since a consolidation of 100% of transactions in equity instruments would be an unattainable goal and may ultimately render the CT unattractive from an operational point of view. In line with this reasoning, those respondents considered that the covered transactions and financial instruments should be reduced. In order to avoid that the CT covers only the most liquid venues, it was proposed that the threshold of transactions to be included could still be kept at high level, so that adequate representation would be ensured.

4.5.5.2 ESMA's assessment and recommendations

215. In view of the feedback, ESMA recommends the CTP to cover all equity and equity-like instruments and 100% of reporting entities. As it emerged in the consultation process, this appears to be the best option for the CT to provide a complete overview of market activity and increase market transparency. Including all equity and equity-like instruments and all reporting entities in the CTP scope is also necessary to avoid an uneven playing field across the Union which would be a concern if certain venues, APAs and/or illiquid instruments were to be excluded from consolidation.

216. At the same time, ESMA understands the difficulties a CT may encounter in the provision of a complete CT, and that such completeness may not always be possible even in the case of mandatory contribution (e.g. in the case of low data quality).

217. Therefore, taking into consideration that the production of a complete CT is an ambitious objective which may require some time to be achieved, ESMA recommends that the CTP may not have to include 100% of transactions subject to clearly specified conditions.

218. While the current legal framework already requires the CTP to cover all equity and equity-like instruments and all trading venues and APAs, allowing the CT to not always include 100% of transactions would require a change of the legal framework. ESMA recommends that such an amendment should also include an empowerment to further specify the conditions for the exclusion of transactions at Level 2.

4.5.6 Publication time of the consolidated data

4.5.6.1 Feedback to the consultation

219. In the CP, ESMA identified three possible solutions regarding the timing of publication of consolidated data: real-time publication (as envisaged by the current legal framework), delayed publication 15 minutes after the initial publication of post-trade data, or a tape of record publishing information at the end of the trading day. While acknowledging that a real-time CT would always publish data with some latency due to the current market structure and the geography of the Union, ESMA, in line with the spirit of the CTP as described in MiFID II, recommended in the CP to establish a real-time CT.

220. A majority of respondents shared ESMA's view that a real-time CT would be the preferred outcome. Those respondents considered that a real-time CT would provide a neutral and reliable source of the current market prices, support best execution and allow market participants to check the behaviour of liquidity providers, provide a consolidated view of EU financial markets and support a more integrated Capital Markets Union. In the view of this group of respondents, latency issues would not create a fundamental issue for the success of the CT.

221. A number of respondents, in particular trading venues but also some data users, expressed a preference for establishing a tape of record. This view was supported by the following arguments:

- ready and easily available information since the information is already generated by venues and APAs which provide it after 18:30;
- smaller infrastructure and maintenance costs since this information is often generated in aligned text files;
- less compliance checks since more information is available for end of day data compared to real-time data;
- no latency issues given that the information is provided after markets close; and



- cost effective assuming an adequate compensation to trading venues for the use of their data.

222. No respondent expressed support for a CT providing only delayed data.

4.5.6.2 ESMA's assessment and recommendations

223. In light of the feedback received, ESMA maintains its recommendation to establish a real-time CT. ESMA is aware that, due to the natural latency that a CT feed would have due to the fragmented trading environment in the Union, some data users (e.g. high frequency traders) would most likely still prefer the direct connection to trading venues and APAs for obtaining post-trade data and a CT could not and would not be designed to replace direct feeds.

224. Nevertheless, ESMA believes that a real-time CT could serve a wide range of purposes such as:

- it could be used for trading purposes by a range of investors, even though the data would be published with some latency;
- it could be used for a number of mid- and back office activities, such as real time-portfolio valuation, risk management, market research and transaction cost analysis;
- it could be used as a tool to support best execution assessments;
- it would limit to some extent the market power of trading venues when selling real-time post-trade data;
- it would contribute to remedying the fragmentation of markets in the Union and allow market participants, in particular retail investors, to have a reliable view of liquidity across the Union in real-time; and
- it would contribute to the creation of a real single market for equity trading in the Union and thereby support the objective to establish a CMU.

225. Moreover, publishing data with some latency of data is less relevant for post-trade data compared to pre-trade data.

226. ESMA does not see a business case for operating a tape of record. Given that the legal framework already requires providing market data free of charge 15 minutes after publication, including for a potential CTP, it is not clear how such a tape of record would add much. If publication free of charge after 15 minutes and data quality of OTC transactions improves in line with the recommendations in this report, such a tape of record could be provided by commercial providers without the need for going through the process of appointing a provider and establishing a governance model.

227. Since MiFID II already requires the CT to provide real-time data there would be no need for changing the legal framework in this respect.



4.5.7 Number of CTPs and related competition

4.5.7.1 Feedback to the consultation

228. In the CP, and in line with the approach set out in Article 90(3)(a) and (b) of MiFID II for appointing a CT, ESMA recommended that the CT should be operated on an exclusive basis and that in order to limit the market power of such an exclusive provider the contract duration of the commercial entity operating the CT should be limited and the renewal of a contract subject to launching a new public procurement. ESMA requested feedback from stakeholders on the appropriate length of such contract duration and whether other entities, in particular data vendors, should be allowed to compete with such an appointed CTP.

229. A majority of stakeholders responding to the CP considered that, while in principle not being in favour of creating a monopoly, they would agree with ESMA's assessment that operating more than one CTP would be burdensome from an operational point of view and create unnecessary cost. Those respondents considered therefore that the CTP should be operated on an exclusive basis, accompanied by an appropriate governance and appointment framework to address the concerns of establishing a monopoly. Most of those stakeholders considered that a contract duration of about 5 years would be appropriate.

230. Some stakeholders considered that more than one CT should be established, stressing that such an approach would limit the risk of CTs imposing excessive fees and allow competition on the quality of services provided.

231. Most respondents were not supportive of prohibiting other entities to compete with a potential CTP to further limit the market power of a CT operated on an exclusive basis.

4.5.7.2 ESMA's assessment and recommendations

232. The operation of the CT on an exclusive basis is the solution foreseen in MiFID II in the case of an appointment of a CT (see Article 90(3)(b)) and ESMA is basing its recommendations on the solution established in the legal text. A single tape would also reflect the CT solutions chosen in Canada and the US. While the US has three tapes for the equities space, these tapes are not competing with each other but rather just cover a different instrument scope for historical reasons. In Canada, only one tape is operating.

233. ESMA acknowledges that an environment of competing CTPs may in theory allow for competition around the price and quality of services provided. However, the current legal text of MiFID II already allows for competing providers to come forward and this approach evidently did not work even if, as described in this report, there are a number of reasons for this outcome.

234. Providing for a framework of competing CTPs would appear inefficient and costly and prevent the tape from creating the necessary economies of scale for operating at low cost. In a competing environment every CTP would have to establish physical connections to more than 170 trading venues and APAs, which implies that every CT would face significant



investment costs. Ultimately such costs would be paid by users of the tapes, either in form of a more expensive tape and/or a lower quality of the service provided.

235. It remains also unclear how the mandatory consumption approach as advocated in this report could be implemented in the case of competing tapes. If users were required to consume data of all tapes, it would lead to a doubling or tripling of costs for investment firms depending on the number of competing CTs that would be established. Such costs would likely by far eclipse any cost savings due to competition of the CTs on price and service quality.

236. ESMA therefore shares the views expressed by many respondents to the CP that operating a CT on an exclusive basis would appear to be the most cost-efficient solution for implementing a CT.

237. While ESMA believes that a single tape should be established, competition should nevertheless be a major driver for the appointment and the continued operation of the CT. ESMA strongly concurs with the views of stakeholders that a CT operated on an exclusive basis would need to be framed by strong governance and transparency arrangements to ensure that the CTP cannot exploit its position.

238. For instance, the contract duration for appointing a CTP should be limited, thereby creating competition both for the initial appointment of the provider as well as the process for reappointing the CTP. Such a process would ensure that the most efficient provider is appointed. Moreover, it would provide incentives to the CT to operate efficiently and offer high-quality services in order to be considered for a potential reappointment. Any public tender for the reappointment of the CT provider for the next period could specifically take into account weaknesses stakeholders had identified in the previous period to ensure that any (re-)appointed provider would have to put particular emphasis on addressing such weaknesses.

239. ESMA therefore recommends that the contract duration for the CTP should be limited to 5-7 years to reflect the necessary time to establish a CT. Moreover, the procedure for appointing the CT should be fully competitive. This could for instance require that potential CTPs disclose the levels of fees they would charge to users accessing their services during the tender. In addition, it could be considered to require the CT to comply with minimum standards as regards the quality and price of services provided to ensure that it delivers a service of high value at a reasonable price (see section 4.5.9 for further considerations on the governance of the CTP).

240. Since MiFID II currently does not provide for a CT operated on an exclusive basis, this recommendation would require amendments of the legal framework and further specifications on the conditions for appointing the CT via Level 2 measures.

241. Finally, after further consideration and in view of the key factors for a successful establishment of the CT presented in this section, ESMA would not recommend prohibiting other commercial entities to provide similar services.

242. First, the key factors presented here, such as mandatory contribution and mandatory consumption would only apply to the appointed CT. Hence, no commercial entities would be able to directly compete with the CT on the same conditions. Furthermore, it is likely that not all users will directly connect to the CT but will access the consolidated data via data vendors. Hence, data vendors would continue serving an important function in distributing data to end users. In addition, there would be competition between the CT and other commercial entities on value-added services created from the data consolidated by the CT, thereby limiting the market power of a potential CT to its core services only.

4.5.8 CTPs' fees and revenue sharing

4.5.8.1 Feedback to the consultation

243. ESMA suggested in the CP that the CTP should (i) be allowed to recover the costs for consolidating and distributing the data plus an appropriate margin as specified in the requirements to provide market data on an RCB; and (ii) share parts of its revenues with trading venues and APAs based on an allocation key that could be based on the market share of contributing entities and/or reflect their contribution to price formation. ESMA also asked for feedback as to what market participants would consider to be a fair monthly or annual fee to be charged by a real-time CT per user.

244. Most respondents expressed support for the fee model briefly outlined in the CP, while stressing that the CTP's allocation key should be transparent and that trades contributing to price formation should receive a higher share of the revenues. Some respondents did not agree with the proposal since they were in favour of a non-for-profit CTP or considered that a different allocation key for the sharing of revenues should be used (e.g. allocating the revenue on an equal basis and not proportionate) and/or considered that the US CT would not be a good model in this case.

245. Concerning the second question, only two stakeholders provided concrete figures considering that a CT could charge 10,000-20,000 EUR per firm per year. Most respondents considered that it would not be possible to provide an estimate of a reasonable price at this stage. Most trading venues replying to the CP considered that the CTP should charge a price similar to the current price for market data to not harm exchanges and undermine price formation.

4.5.8.2 ESMA's assessment and recommendations

246. In view of the support expressed for the proposed fee model, ESMA recommends that the CTP should charge for its data on an RCB and share part or all of its revenues with contributing entities. MiFID II does not require that a CT is profit generating so both a model of a profit generating CTP as well as a non-for-profit CTP, that only charges fees in order to recover expenses, could be envisaged.

247. The current legal text already requires a CTP to provide market data on an RCB. However, the considerations presented on the mandatory consumption (section 4.5.4) would require some changes to the legal framework for the development of Level 2 measures



further specifying the criteria to be considered when developing the fee formula for accessing the CT services.

248. Furthermore, requiring the CTP to share revenues with contributing entities requires an amendment of the legal framework (Level 1 text). Such an amendment should also provide for the development of delegated acts further specifying the allocation key, such as the “weighting” of different types of trades to reward price forming trades with a higher share of the revenues.

249. ESMA shares the views of stakeholders that transparency on the revenue allocation key is of high importance and therefore recommends that the development of the allocation key, as well as any amendments, should be done in close consultation with contributing entities as well as market data users.

4.5.9 Governance framework

250. Many stakeholders in their responses to the CP stressed the importance of providing for a strong governance framework for the CT. ESMA agrees that the governance framework of the CTP will be a key factor for the successful establishment of a CT, in particular in view of some of the other key factors recommended above (such as the operation of the CT on an exclusive basis, mandatory contribution to the CT, mandatory consumption of the CT).

251. The development of such a governance model will require significant time and effort and ESMA considers that at least the following elements should be addressed:

- neutrality of the CTP accompanied by mechanisms to avoid and manage conflicts of interest;
- a high level of transparency, in particular around the decision-making process of the CTP and disclosure of relevant information to the public;
- close involvement of contributing entities as well as users, e.g. via the use of an advisory committee, in the development phase and once operating, to ensure that the views of different types of market participants are taken into consideration;
- a high level of accountability of the CTP;
- provisions ensuring the continuity of service provision, including in case of a change of the entity operating the CT; and
- address resilience concerns arising from a single point of failure.

252. Such a governance model would require amendments to the current Level 1 text and may need to be further specified on Level 2. Furthermore, some of these aspects may also be integrated in the terms and conditions for the appointment of a CT by a public procurement process.

4.6 The impact of Brexit on the establishment of a CTP for equity instruments

4.6.1 Feedback to the consultation

253. In the CP, ESMA sought feedback from stakeholders on the impact of Brexit on the establishment of a CT and in particular on whether there would be value in establishing a EU27 CT after Brexit and on how an EU27 CT could impact the level playing field between the EU27 and the UK after Brexit.

254. Respondents provided mixed feedback, with many respondents highlighting the challenges of assessing the impact of Brexit on the establishment of a CT in the current uncertain environment.

255. Concerning the establishment of an EU27 CT, the majority of stakeholders, in particular data users, considered that there would be value in establishing an EU27 CT, while stressing that this should not prevent a potential EU27 CT to also include UK data as well as data from other jurisdictions in its data stream. Respondents supporting an EU27 CT considered that it would positively impact the competitiveness of the EU by creating a more integrated market, allowing investors to obtain a full picture of trading volumes and unlock greater retail participation.

256. Some stakeholders, mainly trading venues but also a number of data users, considered that the pertinence and relevance of an EU27 CT could be put into question by Brexit. Those respondents considered that establishing an EU tape would increase costs for market participants, both for trading venues and users, and ultimately undermine the competitiveness of the EU27.

4.6.2 ESMA's assessment and recommendations

257. In view of the feedback provided, ESMA acknowledges that respondents consider that an EU27 CT would provide added value after Brexit. At the same time, ESMA shares the view of stakeholders that the value of a CT would be higher if it included also UK data, and possibly data from other third-countries with significant trading activity in EEA equity instruments. Any such an inclusion however would always depend on future political developments.

258. It is very difficult to anticipate ex ante the impact of establishing an EU27 CT on the future playing field between the EU27 and the UK. ESMA considers that the impact of an EU27 CT on the equity trading landscape will ultimately depend on the success in establishing a cost-efficient EU27 CT, the UK's approach towards establishing a CT of its own after Brexit and on the broader applicable regulatory framework in the UK and the EU27 in the future.

4.7 Summary of ESMA's assessment and recommendations on the CTP for equity instruments

259. Despite MiFID II introducing a regulatory framework for the operation of CTs, so far no CTP for equity instruments emerged. ESMA considers that the main reasons for the lack of an equity CT are:

- limited commercial rewards for operating an equity CT;
- strict regulatory requirements for providing an equity CT;
- competition by non-regulated entities such as data vendors; and
- lack of sufficient data quality, in particular for OTC- and SI-transactions.

260. While post-trade information is available from trading venues and APAs and also offered by data vendors, there is currently no data source consolidating 100% of the market, which is also linked to data quality issues for OTC and SI transactions. ESMA considers that in general real time post-trade information is published in a timely manner, but that there are some shortcomings due to differences in the reporting requirements for transactions concluded on trading venues and OTC transactions.

261. ESMA is of the view that improved data quality is not only a prerequisite for establishing a CT but indispensable to allow the consolidation of all post-trade information at low cost, thus enabling market participants to obtain a comprehensive and accurate view of the market and contributing to improved price discovery. ESMA therefore intends to work on further improving data quality, in close collaboration with CAs and market participants,

262. The main risks of not having a CT consists in missing the benefits of such a tape. ESMA sees the following benefits of a real-time CT:

- it would contribute to remedying the fragmentation of markets and allowing market participants to have a reliable view of liquidity across the Union;
- it would contribute to establishing a CMU and add to the creation of a real single market for equity trading in the Union;
- it would limit to some extent the market power of trading venues when selling real-time post-trade data; and
- it could be used for supplementing best execution policies, in particular for retail investors.

263. ESMA therefore recommends the appointment of a real-time CTP for equity instruments. ESMA acknowledges that establishing a CT would be a complex and long process, which would require amending the current legal framework on Level 1 and Level 2. ESMA estimates that it would take at least 5 years from the decision of establishing a CT until the go-live.

264. ESMA considers the following key factors indispensable for a successful establishment of a CT:

- ensuring a high-level of **data quality** (supervisory guidance complemented with amendments of the Level 1 and 2 texts);
- **mandatory contribution:** Trading venues and APAs should provide post-trade data to the CT free of charge (Level 1 amendment plus Level 2 measures);
- **CT to share revenues with contributing entities:** ESMA recommends that the CTP charges for its data on an RCB and shares part or all of its revenues with contributing entities on basis of an allocation key that rewards price forming trades (Level 1 amendment plus Level 2 measures);
- **contribution of users to funding of the CT, e.g. via mandatory consumption:** ESMA considers that the mandatory consumption of the tape would make the successful establishment of a CT more likely. Should such model be chosen, a proportionate fee key would need to be developed to reflect that not all firms will use the CT in the same manner and to the same extent (Level 1 amendment plus Level 2 measures);
- **full coverage:** The CT should consolidate 100% of the transactions across all equity and equity-like instruments. However, ESMA recommends that in clearly specified conditions, the CTP should be allowed to not always include 100% of transactions (Level 1 amendment plus Level 2 measures);
- the CT should publish data in **real-time** (no changes to the legal framework necessary);
- **operation of the CT on an exclusive basis:** A single tape would provide the most cost-efficient solution. In order to limit the market power of such a CT, competition should be a major driver for the appointment of the CT. ESMA recommends that a CT is appointed for a period of 5-7 years and to structure the appointment process in a fully-competitive manner (Level 1 amendment plus Level 2 measures);
- **strong governance framework:** the CTP should be framed by a strong governance framework. In particular, this should ensure the neutrality of the CTP, a high level of transparency and accountability and include provisions ensuring the continuity of service (Level 1 amendment plus Level 2 measures).

265. It is important to highlight that significant further work on the specification of most of the key factors presented will be necessary should the EC and co-legislators opt for the establishment of a CT. ESMA stands ready to provide further technical advice in this area.

266. ESMA is of the view that an EU27 CT would provide added value after Brexit, even though the value of a CT would be higher if it included UK data.

5 Annex

5.1 Annex I – Feedback to the consultation paper

Q1: Have prices of market data increased or decreased since the application of MiFID II/MiFIR? Please provide quantitative evidence to support your answer and specify whether you are referring to equity and/or non-equity instruments.

1. Most market data users replying to the consultation believed that market data prices increased since the application of MiFID II / MiFIR. In their view the higher fees for market data resulted from various changes introduced by trading venues: direct price increases, introducing fees to products previously offered for free and changing definitions.
2. According to feedback provided by data users the most significant price increases took place with regard to non-display use, e.g. when using market data in applications and fees for operating as a SI. The increase in prices for per-user display fee were described moderate. Some firms accommodated to increased prices by significantly reducing the number of staff members having access to data and scaling back their activities.
3. Trading venues answering this question explained that some prices have increased (in particular non-display fees) while other have decreased (disaggregated products). According to their view, the new fees are fairer since they differentiate between different use cases and accommodate changes in trading, such as increased use of algorithmic trading.
4. Some of the respondents did not provide quantitative evidence due to competition law constraints and non-disclosure agreements introduced by the trading venues.

Q2: If you are of the view that prices have increased, what are the underlying reasons for this development?

5. All market data users (including redistributors) providing feedback were of the view that market data prices increased after the entry into force of MiFID II and identified the following underlying reasons and dynamics:
 - new categories of fees have been created and the existing ones have been redefined and recategorized. Licensing models have become more granular, with fees being chargeable for use cases which previously did not attract fees, i.e. access fees, site fees, distribution fees, display fees, delayed data fees, non-display fees and fees for creating and storing derived data/work;
 - the price of data is based on the way in which data is being used by those who purchase it instead of being based on the cost of producing data;
 - market data market is an oligopoly: each trading venue provides indispensable real-time datasets that cannot be replaced;

- the demand is inelastic: the consumption of market data is not optional for intermediaries because the best execution requirements introduced by MiFID II/MiFIR require investment firms to consume market data in order to identify where best execution can be achieved at any point in time;
- there is no standardization in the definition and interpretation of the different types of usage, resulting in intermediaries being charged for multiple types of usage of the same data;
- the lack of enforcement of RCB legislation: the existing legislations on the provision and use of market data at RCB have not yet resulted in any cost reductions nor improved cost transparency for users, possibly because they do not have punitive clauses in case of breach of regulatory obligations. In addition, possible breaches are not easily proven due the lack of comparability between data providers offers and costs;
- Trading venues are creating new commercial models and introducing additional non-display and derived data fees to compensate reduced revenues due to:
 - the appearance of new trading venues which created fragmentation in liquidity and an intensive competition to attract that liquidity. This led to pressure on trading and listing fees;
 - the drop of usual trades: the number of trades has increased due to high frequency traders that benefit from low tariffs, but the stake of other ordinary trades executed at higher prices has decreased;
 - volumes leaking to MTFs and SIs;
 - costs of investments in IT infrastructure, partly to be able to meet MiFID II regulation.

6. On the other side of the market, most of the trading venues are cohesive in stating that changes in the cost of market data are determined by the following reasons:

- market data is the outcome of a dynamic price formation process and is a joint product with trade execution. Therefore, changes in costs are attributable to market data production and distribution;
- with the application of MiFID II/MiFIR, trading venues had to adapt to regulatory requirements affecting the provision of market data (e.g. data disaggregation, costs of compliance);
- new services and data content with added value are provided to the market data users;
- adaptation to structural changes, such as the move from terminal use to increased electronic use of data and consequently declining number of terminal users.

7. One trading venue confirmed the market data users' perspective, stating that (i) the *best execution* requirement obliged market participants to consume more data, reducing price elasticity and (ii) trading venues addressed falls in trading revenues that happened as a result of increased competition by increasing market data revenues. This has been attempted by charging for new services or developing new fees for services that were previously included in other fees.

Q3: Following the application of MiFID II/MiFIR, are there any market data services for which new fees have been introduced (i.e. either data services that were free of charge until the application of MiFID II or any new types of market data services)?

8. All market data users reported that the number of market data products / licences in the trading venues' price lists have increased following the application of MiFID II and MiFIR with the introduction of "new" services, claiming that they do not provide additional data, such as:

- additional fees for conducting SI activity:
 - the SI licence is a separate and distinct one from the non-display fees already paid for by the users, resulting in users required to pay twice for the same data;
 - a trading venue requires licensing for "Systematic Internaliser Activity" not only for usage of their equity prices inside an SI platform, but as well for any SI on derivative products where only the underlying is listed on the trading venue;
 - a SI is fee-liable if the data used is sourced from a trading venue either directly or indirectly via a data distributor/vendor. If the SI receives data from multiple sources, the SI is fee liable to all the sources. Moreover, if the quote is not the same or similar to the equivalent quote published by a particular trading venue, the trading venue requires the SI to pay according to their derived data policy, since the SI price is seen as a substitute to the trading venues own price. Because of these costs, SIs are forced to restrict investors access to SI quotes, contrary to the MiFIR requirement to make quotes publicly available;
- licences for narrowly defined use based e.g. on corporate entity, business divisions, named users, location and/or usage type;
- new types of licenses for the usage of data in non-display applications, where the fees are not only linked to the actual usage but to the status of a firm;
- fees for non-trading use of market data, including charges for critical uses such as risk and compliance;
- fees for ability to "access" the data as opposed to actual documented use (example: a firm, following an audit, had to pay market data fees for all non-traders, including people from the HR department despite no use of market data being made by these individuals);
- fees for usage of "aged" data in calculating delayed index values;
- revenue sharing fee structure on derived data product and/or licenses' fees based on the number of clients to whom it is redistributed;
- revised fees structures which encompass the application of more restrictive rights of use of data, requiring organisations to accept duplicative fees for use of the same data in different circumstances;
- "order routing fees", charged in addition to standard non-displayed fees for firms that also trade on other venues.

9. Trading venues replying to the CP introduced the following new products/fee linked to the application of MiFID II/MiFIR:

- fees related to the use of market data for risk/compliance and other non-trading purposes;
- fees related to systematic internalisation;
- disaggregation fees, to provide more granularity;
- “per user” fees so end users do not pay twice for accessing or data through different devices (to benefit smaller users);
- fees related to the value that market data represents to customers, based on the scope, scale and use made by the same.

Q4: Do you observe other practices that may directly or indirectly impact the price for market data (e.g. complex market data policies, use of non-disclosure agreements)? Please explain and provide evidence.

10. All market data users providing feedback observed several practices that directly and indirectly impact the price of market data, such as:

- market participants are required to provide information on how market data is intended to be used;
- no clear offering of unbundled market data services: disaggregated costs are set at levels which appear to discourage their use and encourage taking an ‘all data’ package instead;
- complex market data policies: the agreements signed by the users are usually long, dense and the combination of policies (use restrictions) and licence/fees structures is not transparent;
- excessive amendments of the market data policies: it has an impact in terms of comprehension and capacity to implement and follow such new policies;
- lack of standardisation of fee policies and terminology which differ by trading venue, making it very difficult to manage and ensure that users are compliant;
- the requirement to sign Non-Disclosure Agreements;
- establishment of dedicated teams within the firms to manage the trading venues’ relationships only;
- aggressive audit procedures: users are required to prove that their use of the data was strictly compliant with the agreement and are obliged to have necessary human resources to manage such audit and to be compliant.

11. On the other side, trading venues reported that changes in the use of market data have been registered and had a direct impact on the price of market data. There has been a big shift in consumption of data from display to non-display activities reflecting the ongoing automation of activities using market data, including algorithmic trading, driven through technological developments. New data users (e.g. quants, robotic and artificial intelligence systems) consuming massive real time data require constant investment in hardware and



software by data providers in order to keep up with the new technologies used by these systems.

Q5: Do you agree that trading venues/APAs/SIs comply with the requirement of making available the information with respect to the RCB provisions? If not, please explain which information is missing in your view and for what type of entity.

12. Market data users either directly disagreed that trading venues, APAs and SIs comply with the RCB requirements or explained that although the disclosures are published, the quality and complexity of the information provided does not allow them to fully make use of those disclosures.

13. Respondents explained that the RCB disclosures are not easy to find, to compare and to understand and that the RCB requirements had so far little impact on trading venues' practices, since data prices are driven by their value and are unrelated to the costs of preparing and disseminating this data. The information about the revenues and on how the price was set is often missing. In many cases the disclosures were considered as too generic and not allowing users to properly understand them.

14. With regards to RCB disclosures by SIs, according to some respondents, only very limited information has been provided so far. Some respondents suggested to review the approach to the 'traded on a trading venue' concept in order to bring more instruments in the scope of transparency.

15. Respondents provided the following suggestions on how to improve the RCB disclosures:

- a common standard template for the RCB disclosures could be defined, so that the information is more comparable;
- more guidance on terminology could be helpful to further standardise the information;
- a requirement to charge on a "per user basis" remains a problem since some venues have implemented the provision by requiring from users a complex reporting to each venue; a more pragmatic approach of "single source netting", where user fees are paid only once at source, was identified as a more practical solution;
- it should be ensured that when certain type of data is provided free of charge, the RCB disclosures should still apply to other market data that is provided by the entity for a fee.

Q6: Do you share ESMA's assessment on the quality of the RCB information disclosed by trading venues, APAs and SIs? If there are areas in which you disagree with ESMA's assessment, please explain.

16. On the one hand, all trading venues but one disagreed with ESMA's conclusions. According to them, progress has been made, the information provided is of good quality and there is no need for ESMA to clarify further what information they are expected to disclose. Also, trading venues disagreed with ESMA's assessment that market data is not provided on a non-discriminatory basis. According to trading venues, they charge all customers falling into the same category in the same manner and differences in prices between categories of



customers are justified by the value that the market data represents to the category of users in line with Article 8 Regulation 2017/567.

17. Moreover, trading venues disagreed with the idea of providing more detailed information on actual prices, because according to them such information goes to the heart of competition between exchanges. Full disclosure would open the exchanges' entire business model and restrain competition between them.

18. On the other hand, all other respondents to the CP agreed with ESMA's assessment. According to them, the information provided by trading venues is not meaningful and is impossible to compare across venues. The fee schedules are too long and too complex. Information on the methodologies for price setting is vague, it does not enable investors to understand how the prices for data are set and sometimes it is too difficult to locate on the websites.

19. Some market data users argued that some trading venues do not even disclose any form of calculation and only announce on their websites that they have a model for costs allocation. Therefore, it is almost impossible for users and regulators to assess whether trading venues comply with the obligation to set price on RCB.

20. Some respondents are of the view that the prices are based on the type of data usage and take into account the willingness and capacity of the market participants to pay for the appropriate licenses critical to their business, whereas commercial models should be determined on costs of production and dissemination of data and may include a reasonable margin.

21. Also, it was reported that in some cases, trading venues introduced pre-acceptance audits for data users to pass before entering into per user fees. This was perceived as an additional administrative burden to access data on a per-user basis.

Q7: Do you agree that the usability and comparability of the RCB information disclosed could be improved by issuing supervisory guidance? If yes, please specify in which areas you would consider further guidance most useful, including possible solutions to improve the usability and comparability of the information.

22. All trading venues replying to the CP but one were of the view that there is no need for supervisory guidance to improve usability and comparability of the information. For trading venues, the fact that the information provided differs among trading venues is a direct consequence of the fragmentation of capital markets in the EU, which is a consequence of MiFID II/MiFIR. Trading venues considered that in a competitive market, market offerings may not be fully comparable since the various market data products available are not identical. Exchanges develop and produce diverse products in order to develop innovative and unique market data offerings.

23. Therefore, trading venues stressed that any future development of standardised templates should not hinder the development of new products and innovation in this area or not be discriminatory for certain market players compared to others. Trading venues pointed out that

best practices are still emerging and issuing further guidance on the level of granularity expected and the terminology used would be premature at this stage.

24. Market data users advocated for clarification and supervisory guidance in the field of RCB information. They suggested:

- disclosure of quantitative information on the specific costs which form the basis of market data pricing, rather than adopting principles which can be obfuscated;
- more clarity on the types of costs which are considered eligible or ineligible for inclusion in a venue's cost base for production and dissemination of market data;
- standardisation of the category of costs so they could be compared across trading venues;
- harmonisation in the terminology used for the different offerings (e.g. displayed/non-displayed, derived data, delayed data etc.);
- removing the possibility for trading venues to charge for data based on the value perceived for the users because such model is not based on costs but rather on subjective factors;
- simplification of the fee schedules which are too granular and complex;
- annual and self-calculable written information on the true costs as well as the method of pricing;
- establishment of regulatory framework for market data providers;
- one respondent that focused on benchmark providers advocated for a model based on the Size of Use and not on the number of users. In the view of this respondent the current model based on the number of users, tends to favour big benchmark providers with large assets that replicate their indices over small benchmark providers; and
- for some respondents, trading venues should not be allowed to charge the costs of operation of the trading systems and general exchange overhead expenditure as part of the market data costs.

Q8: Do you think that the current RCB approach (transparency plus) can deliver on the objective to reduce the price of market data or should it be replaced by an alternative approach such as a revenue cap or LRIC+ model? Please justify your position and provide examples of possible alternatives.

25. Trading venues providing feedback were of the view that the current RCB approach is sufficient and should not be replaced. In their view the current structure is unlikely to negatively affect market outcomes and any changes to the current RCB framework would not be justified. According to trading venues, exchanges and APAs market data account for a small proportion of fund management overall costs. Moreover, trading venues stressed that trends over the past decade suggest that entry of alternative trading venues and the resulting competition for order flow have not been constrained by exchanges' market data fees. For this group of respondents, there is no need to clarify or justify any regulation of the pricing of market data services. Trading venues pointed out that they were not the last mile in relation to distribution of data to customers and that any price regulation would only be effective in

case it would encompass the whole value chain and ideally create benefits for end users only, not for intermediaries, such as market data vendors, by increasing their profitability.

26. Trading venues voiced concerns about the use of price regulation and in particular on the application of an LRIC+ model. In their view applying an LRIC+ model is not possible for digital products such as data since information goods are characterised by high fixed costs and low-to-zero marginal costs of production. Therefore, price cannot be set a marginal cost since otherwise producers would go out of business. Trading venues stressed that an LRIC+ model is highly assumption-driven, with small modifications to input factors producing huge swings in the price calculated by LRIC+ model. This could result in preventing exchanges from recovering their actual costs and would deter them from actively expanding their technological capacities.

27. Concerning feedback from other respondents, in particular data users, while there was broad agreement that the current approach has not delivered on its objective to lower market data costs, different views were expressed on the way forward. A number of respondents of this group were of the view that before changing the approach, there would be a merit in trying to improve the situation by providing more clarity on the information to be disclosed and on the types of costs to be included.

28. The remaining respondents of this group were in favour of a revenue cap or LRIC+ model. For them, the current approach gives too much leeway to trading venues to set prices at the level they want, because it is almost impossible for users and NCAs to assess whether prices are set on RCB. One respondent suggested that if price regulation was introduced there should be a mechanism to protect small trading venues that could be negatively impacted by it, because of their high operating costs compared to big trading venues. For example, trading venues could be subject to price regulation only if the revenue from supplying market data exceeds a certain, to be defined, threshold.

Q9: Do you consider that a revenue cap model as presented above might be a feasible approach to reduce the cost of market data? Which elements would be key for successfully implementing such a model?

29. Trading venues unanimously voiced again the idea of introducing a revenue cap model such as an LRIC+ model and urged ESMA to reject more intrusive approaches. For them, the current RCB approach is more proportionate and feasible and best suited to the reality and complexity of the market data environment, value chain and entire financial markets and there is no evidence of market failure to justify stricter regulation.

30. Trading venues urged ESMA to take a holistic view to assess the development of prices for market data, considering the scale and nature of the entire market data value chain and recognising the importance of the price formation process by exchanges for overall transparency of EU capital markets.

31. For several stakeholders, a direct capping of revenue would lead to an excessive regulatory market intervention possibly leading to further cost increase for end-users who might pay less for basic data but would probably face increased fees for every request for customised data. For these stakeholders it would be best to establish binding transparency

and liability provisions, introduce a cost benchmark and standardise the definitions and audit procedures.

32. Some of the respondents that advocated for an LRIC+ model made the following points:

- Reference to the Copenhagen Economics report;
- The model depends on an accurate assessment of the costs of producing and supplying the data. Because the creation of data is inextricably linked to the trading activity itself there will be questions about how you shred costs to each activity and there will an incentive to report more costs on the market data side to inflate the allowed chargeable revenue; and
- Careful analysis on the cost function of the market data production would be needed to decide if the revenue cap model should be the preferred approach in the regulation of market data.

Q10: Did data disaggregation result in lower costs for market data for data users? If not, please explain why?

33. Trading venues, in particular regulated markets, considered that while there is currently limited demand for disaggregated data, data disaggregation presents a cost reduction potential if it is passed through the whole value chain, i.e. including data vendors. One trading venue mentioned that data disaggregation resulted in users requesting only ETF data and thereby spending less on market data.

34. A majority of respondents considered that data disaggregation did not result in lower costs, but rather in higher costs. This group of respondents is composed mainly of data users but also includes data vendors and some MTFs. Various reasons were brought forward, including:

- disaggregated data is more expensive than bundled data and at times venues are no longer offering bundled data,
- the provisions around disaggregated data resulted in more complex data policies and were used by trading venues to extract additional data revenue,
- disaggregated data is not passed through by data vendors; and
- trading venues not reacting to requests for disaggregated data.

35. Several data users recognised that demand for disaggregated data may have been limited because wholesale market participants are interested in the whole data set, and disaggregated data may be only of interest for small users. Some respondents suggested to clarify in the law that the fees for disaggregated data must be, when summed up, no higher than the costs for bundled data (e.g. buying pre- and post-trade data separately should not be more expensive than buying pre- and post-trade data in a bundle).

36. One respondent considered that the reduction in fees for disaggregated data did not meet the expectations of users and that users underestimated the administrative costs for requesting and managing disaggregated data.

Q11: Why has there been only little demand in disaggregated data?

37. Regulated markets and data vendors considered that there has been no demand for disaggregated data since there is only little interest in disaggregated data. This view is supported by some data users, in particular representing the wholesale market, which stressed that for the wholesale market the whole data set is needed while acknowledging that disaggregated data may be important for smaller users.

38. One trading venue considered that there was significant demand for market data with 25% of clients subscribing to disaggregated data.

39. Further reasons brought forward, in particular by data users, include:

- not possible to access disaggregated data without direct connection to the venues;
- disaggregated data is more expensive than bundled data;
- there would be greater demand if data could be obtained at instrument level or if the list of mandatory disaggregated products were increased (e.g. closing auctions, require disaggregation between level 1 and level 2 data);
- complexity and time-consuming nature of negotiating new contracts with venues and APAs;
- costs for end users buying disaggregated data are higher than buying bundled products, in particular when including administrative costs;
- complexity of market data policies makes it challenging for users to understand data offerings; and
- trading venues are not facilitating access to disaggregated data.

Q12: Do trading venues and APAs comply with the requirement to make available data free of charge 15 minutes after publication? If not, please explain in which areas you have identified deficiencies.

40. According to market data users, the access to publicly available data has improved but in some cases trading venues and APAs still do not comply with all the requirements. The requirement which seems to be the most problematic, according to feedback provided, is the publication in a machine-readable format. Some users explained that many trading venues provide the data in a format which can be easily read, used and copied only as a "premium service" available for a fee, which many firms agree to pay to be able to use a data in user-friendly manner. This problem seems to be particularly relevant for non-equity data.

41. Market data users explained that some trading venues have implemented strict definitions of value-added services and charge for delayed data e.g. when the data is used in applications or for historical references. With regards to data redistribution, it appears that trading venues and APAs charge redistribution fees not only when the distributor charges fees for the data re-distributed from the final users, but also when such service is provided free of charge, which somehow goes beyond the original intention in the Q&A 9.

42. Generally, according to feedback provided by data users even where delayed data is provided free of charge, the terms of use are so restrictive that they may prevent users from benefiting from this data, e.g. "you agree not to modify, copy, alter, translate, disassemble, reproduce, distribute or otherwise change in form, format or substance the Service and its contents, or create derivative works basis on the Service and its contents."

43. Trading venues providing a response to this question highlighted that significant efforts have been made on their side to comply with the rules and therefore they are reluctant to do further changes. Some trading venues saw more demand for their data through vendors, while there is little demand for direct access. They also explained that where the data users built commercial products based on data from trading venues, it is acceptable that trading venues receive a fee for this data.

44. Moreover, some trading venues considered that the access of delayed data by professional users is always for commercial use, and hence subject to fees.

Q13: Do you consider it necessary to provide further supervisory guidance in this area (for instance by reviewing Q&As 9 and/or 10) Please justify your position and explain in which area further guidance may be needed? Please differentiate between pre- and post-trade data.

45. Data users believed that the rules need above all stricter enforcement. The areas where further clarification of the current rules may be beneficial were:

- it should be stressed that the data from all trading venues and /APAs should be available in machine-readable format, i.e. the data can be downloaded and read by a program without a need for human intervention;
- the value-added services and data-redistribution should be further clarified, in order to narrow down the cases where the professional investors are charged for delayed data; according to some other responses, those provisions should be removed;
- more guidance is needed with regards to the "per user fee" concept, in particular when the data is accessed through data vendors.
- Some respondents asked for new requirements to be considered with regard to the provision of free data, and suggested the following changes:
- there should be no legal contract required when users access delayed data;
- the access to data should be provided without the need to login or use security tokens;

- there could be guidance regarding a common standard format and delivery mechanism for the data;
- it should be considered that trading venues and APAs cannot charge for any regulatory data (also real-time), since this will eliminate the incentive to deteriorate the data quality of delayed data to make the data users buy expensive packages.

46. Trading venues and APAs providing a response to this question requested to be able to monitor the use of the data in order to spot the commercial uses. Some of them stressed that providing delayed data for free to professional users is discriminatory and disproportionate, since those users charge for their services (also when those services are not directly linked to market data), and even offer sometimes competing services to those offered by trading venues.

47. Trading venues considered that the current guidance on provision of market data free of charge 15 minutes after publication concerns retail investors only. Furthermore, they recommended a change to the Q&A to clarify that delayed data should be available for the current business day (whole trading day), and not for a 24-hour period.

Q14: Do you agree that the identified reasons, in particular the regulatory framework and competition by non-regulated entities, make it unattractive to operate an equity CT?

48. Most respondents agreed that the regulatory framework and competition by non-regulated entities are factors that make it unattractive to run a CTP. A few respondents however noted that competition by non-regulated entities is not relevant for the CT use case.

49. A significant number of respondents recommended that trading venues and APAs should be required to submit data to the CTP free of charge in order to make it financially viable. One respondent suggested that there would be no demand for post trade data and therefore suggested that ESMA should collect data from NCAs and provide a platform at a price that would cover at least the running costs.

50. Some respondents referred that although the regulatory requirements are restrictive, they can be overcome – mandated contributions, preferred commercial access to data, strong revenue redistribution policy, sound governance model could make the operation of a CT attractive.

51. Some respondents mentioned that the cost to build a CTP would end up being passed to consumers and therefore makes it too expensive. This could be further aggravated by the fact that the pricing should be based on an RCB which, according to some respondents, has proven unsuitable and insufficient to provide users with appropriate prices for market data.

Q15: Do you consider that further elements hinder the establishment of an equity CT? If yes, please explain which elements are missing and why they matter.

52. Respondents identified a few elements which in their view hinder the establishment of a CT. The most important were:

- There is significant complexity of exchanges data contracts; a more efficient model would be to harmonise a standard contract;
- Data quality, timing, consistency and completeness (in particular for SI and OTC data) is fundamental to the successful establishment of a CTP;
- There is a significant uncertainty on the concepts of addressable and non-addressable liquidity. Greater clarity is required in order for the CT to provide meaningful information to users;
- Further harmonization regarding clock synchronisation;
- There should be standardisation of how delayed reporting should function;
- Latency can be an issue for some users; and
- Diversity in proprietary data formats. CT should mandate standard information exchange protocol.

Q16: Please explain what CTP would best meet the needs of users and the market?

53. A majority of respondents, mainly data users, were in favour of a real time CT rather than a tape of record. All respondents agreed that regardless of the type of CT, data quality issues should be resolved. Some suggested a standardisation of the format, with MMT being referred in a number of occasions, to ensure data quality that will facilitate more reliable information. Most respondents also agreed with the focus on post trade CT for equities, although they would welcome the subsequent expansion to other asset classes.

54. Respondents in favour of a real time CT were of the view that it should aim at delivering low cost consolidated real time post-trade market data to users. Some respondents were of the view that the CT should be free for retail consumers and provide for a minimum latency that is meaningful for a human consumer. Those respondents acknowledged that some time sensitive investors would keep collecting data from other (low latency) sources, but did not consider that this would undermine the objective of a CT.

55. The majority of respondents believed that the CT should be rich enough to cover mandated regulatory use, such as best execution and MAR. Should there be an appointed CT, it should be done via a tender for a period of time (5 years for example) and reviewed its appropriateness at the end of each period. Furthermore, in order to create conditions for a successful CT trading venue and APAs should provide data for free but benefit from an appropriate policy of redistribution of revenues by the CT administrator.

56. Moreover, respondents considered that there was the need to provide more guidance on the RCB concept and to promote uniform standards for any CT to be successful. One respondent pointed that non-price forming trades should be included in the CT if appropriately flagged.

57. A few respondents saw ESMA as the best positioned body to provide an economical solution, although pointing out that if that is not the case, then at least the governance model should be mandated by ESMA and include all stakeholders. The governance model should have appropriate representation from a wide range of users and contributors.

58. Those who argued for a tape of record, mainly trading venues, viewed high latency as the biggest issue to provide for a real time CT. In this sense, the respondents were of the view that users would keep getting data from lower latency sources. Furthermore, data vendors would still be the golden source for real time data given their expertise in providing added on services. In the end, according to this view, a real time CT would only increase costs for users. An end of day tape of record that covers all execution venues (including OTC) would be the best solution for a CT. This group of respondents also recommended to review the deferral publication regime.

Q17: Do you agree that real-time post-trade data is available from both trading venues and APAs as well as data vendors and that the data is currently not covering 100% of the market, i.e. including all equity trading venues in the EU and all APAs reporting transactions in equity instruments? If not, please explain.

59. Most of the respondents agreed that real-time and post-trade data from trading venues, APAs and data vendors is currently not available for 100% of the market. The general feedback was that data is more available for listed markets than for OTC and SI data, which is a high constraint considering the level of fragmentation of the market. For this reason, it was not seen as possible to have a comprehensive view of EU liquidity. Furthermore, respondents considered that aggregated data is not covering the smaller and highly specialised trading venues and APAs.

60. One data vendor mentioned that there is 100% coverage, but not consolidated in one single source. This happens due the difficulties of integrating different data sources, but also because separate negotiations have to be undertaken with each venue and APA for contractual rights, which is a complex and expensive process. For this reason, in order to ensure that a CTP is viable and has full coverage, there has to be a standardization of connectivity and integration of data, with prioritization of data quality and consistency based on enforcement from regulators.

61. According to feedback provided there is less demand for APA data, both from market data vendors and end users, probably due to the lower quality of off-venue data, as well as lower regulatory requirements in the context of timely availability of data (e.g. different deferral regimes for OTC trades compared to transactions concluded on-venue).

62. According to almost all respondents, there are data quality issues, in particular for data published by APAs: information is reported to different places, in different formats often not machine-readable and in an inconsistent way. This results in inconsistent and unreliable data with very low quality. Due to the fragmentation of the information, there are high costs of aggregating the information.

Q18: Do you agree that post-trade data is provided on a timely basis and meets the requirements set out in MiFID II/MiFIR and in the level 2 provisions? If not, please explain.

63. Most of the respondents agreed that post-trade data is provided on a timely basis and meets the requirements set out in the regulation. There was one trading venue that mentioned that deferrals can diminish the overall usefulness of the data for real-time purposes.

64. A few respondents mentioned that the main constraint is the inconsistency of data quality and delivery systems, that makes it nearly impossible to assess whether the requirements are met. The disparities in the delivery of real-time data across providers was acknowledged by other respondents, that highlighted the need for technical standards to ensure that the supply of data is done on a fair, reasonable and non-discriminatory basis.

65. There were some respondents that differentiated between data from trading venues and OTC data, including from SIs. While on-venue data seems to be provided in a timely and reliable way, for OTC and SI data they mentioned concerns regarding the reporting of trades within one minute for equity and equity-like products, as required by the regulation, but also related to the delay for non-liquid instruments to appear in FIRDS, which delays the reporting to the APA. Respondents also stated how significant delays in off-venue transactions do not support high quality consolidated data. The fact that there are different regulatory requirements as regards to timeliness creates constraints with the consolidation of information and makes it difficult to have a full view of the market. Solving these constraints regarding reliability and timeliness of trade reporting should be a priority before developing a CT.

Q19: Do you agree with the issues on the content of data and the use different data standards identified or do you consider that important issues are missing and/or not correctly presented?

66. Most respondents agreed with the issues on the content of data identified in the CP and considered that a broader and more consistent implementation of the MMT standard across SI and OTC trade reporting would be desirable. At the same time, several respondents highlighted that the situation has been improving and that currently several industry workstreams are working on consistency/data quality issues.

67. In addition to the shortcomings identified in the CP, the following issues, focusing on equity markets, were raised:

- Lack of standardisation for the reporting and flagging of non-addressable liquidity and non-price forming trades. Some stakeholders were in favour of industry solutions whereas others considered ESMA guidance necessary;
- Inconsistent reference data and lack of a centralised 'golden source' for reference data to classify instruments correctly and determine applicable reporting requirements;

- Duplicative reporting or lack of reporting. Some stakeholders considered that the trade reporting responsibilities for OTC-trades should be reviewed;
- Partial reporting and wrong reporting, in particular for non-equity instruments;
- Need to further improve the quality of ESMA IT systems (FIRDS/FITRS);
- Lack of a trusted, complete and common record of SI status for equity instruments; and
- Ensure enforcement of reporting requirements by regulators.

68. Feedback on the use of different data standards was more mixed. While some respondents were in favour of using common standards, most trading venues were not in favour of requiring trading venues to meet the MiFID requirement on machine-readability since the different (and partially proprietary) data standards used by trading venues are a means of competition between trading venues. Furthermore, those respondents stressed that the formats are well known to the market and can already be consolidated. Moreover, one stakeholder considered that different data standards may not be an issue where core elements of reporting standards are mandated.

Q20: Do you agree that the observed deficiencies make it challenging to consolidate data in a real-time data feed? If yes, how could those deficiencies best be tackled in your view?

69. The majority of respondents, consisting in particular of regulated markets but also a number of data users, agrees that the observed deficiencies make it challenging to consolidate data in a comprehensive and accurate real time feed. Nevertheless, a number of respondents, while acknowledging that the CT will only deliver the full benefit once data quality and standards issues have been resolved, considered that the current situation should not prevent the establishment of a CT. In the view of those respondents, a CT could assist in standardising reporting practices and addressing data quality issues. Moreover, data vendors are already consolidating data, thereby demonstrating that consolidation is possible.

70. Concerning on how to resolve issues around data quality and standardisation, several suggestions were made, in particular:

- make the use of the MMT standard compulsory;
- improve quality, consistency and reliability of OTC data;
- ensure high quality of reference data (FIRDS and FITRS);
- ESMA to issue supervisory guidance on reporting standards;
- ensure that enforcement measures are taken in case of poor reporting. Some stakeholders suggested that ESMA should be given the responsibility to enforce reporting standards; and

- define specifications for the contribution, consolidation and publication of a CT (format, data required, reference data standards, time stamps, flagging).

Q21: What are the risks of not having a CTP and the benefits of having one?

71. Most of the respondents, mainly data users, agreed with the benefits of having a CTP. In particular, the following have been identified as the main benefits (and risks of not having a CTP):

- Removal of existing information asymmetries and remedy to the current fragmentation of the market and to the current unlevelled playing field;
- Better liquidity and more competition;
- The CTP will be an important catalyst for European markets to develop further and would support a more integrated CMU;
- The CTP will be a neutral and reliable source of the current market price, giving investors' confidence to trade and supporting best execution;
- The CTP would limit the power of trading venues and market data providers. The risk of not having a CTP would be a continuous exaggeration of price impact;
- The CTP would promote market resiliency since less asymmetric information ensures that changes in supply and demand are more efficiently reflected in current price levels;
- A risk of not having a CTP would be that a reliable view on liquidity in post-MiFID II fragmented markets will remain inaccessible for the majority of market participants.

72. The respondents, mainly trading venues and data vendors, who did not agree with the benefits of having a CTP provided the following reasons:

- The cost/benefit analysis would be negative since the CP would cause additional costs for participants having to pay for both the CP as well as additional exchanges. The sources of post-trade data dictate terms and pricing that the EU CTP has to pay to access the data since it would be a customer with no leverage;
- No possibility to deliver a product of quality due to the lack of a governance structures that prevents CTPs from imposing standards on data providers;
- The quality of the data would not improve since it is due to reporting entities and to the data provider. In other words, the CTP will not solve this issue;
- Trading venues need to be able to compete on roundtrip times (time needed to send and order, get it executed and be informed about the trade price) as they are competing for execution, mandating the same format/protocol to send data would eliminate this competition factor;



- Since there is neither a regulatory use case nor a requirement to use consolidated data, there is a lack of funding of the CTP;
- Data vendors provide competitive solutions to the needs of their customers at a significantly lower cost than consuming individual sources and integrating them onsite/inhouse.

Q22: Would you be supportive of an industry-led initiative to further improve data quality and the use of harmonised standards or would you prefer ESMA guidance? Please explain.

73. Respondents were split between those in favour of an industry-led initiative, ESMA guidance or both at the same time. In particular:

- Some respondents were in favour of ESMA guidance because a regulatory body guarantees investors' protection and the enforcement of the standards;
- Other respondents were in favour of a combination of industry-led initiative and ESMA guidance stating that this would provide the best outcome;
- Other respondents were in favour of an industry-led initiative such as MMT.

Q23: In addition to the standardisation of the reporting and format, as described before, did you identify any further relevant data quality issue to be considered for the successful establishment of CTPs?

74. Most respondents identified additional issues to be addressed on top of the standardisation of the reporting and format. Additional issues included:

- Clock synchronisation across all venues and SIs and same granularity of timestamp as that of venues by APAs (i.e. for both SI and OTC trading);
- Consistent reference data, especially for the identification of instruments either by ensuring that the ISIN is a unique identifier and by making the classification of instruments clear and consistent into the CFI code and RTS 2 taxonomy, or by using alternative identifiers which are open source identifiers, such as the FIGI and by solving the identification of packages or any transaction with multiple legs;
- Making mandatory the reporting of all trades to the CT, i.e. addressable and not addressable liquidity;
- Ensure a consistent flagging of trades at SI and OTC level, e.g. extending the MMT model to all market participants;
- Proper consolidation of trades reported under the different deferral regimes.

Q24: Do you agree that the mandatory contribution from trading venues and APAs to a CTP would favour the establishment of CT?

75. Most respondents, both users and trading venues, agreed that mandatory contribution from trading venues and APAs to the CT is an important element to allow its establishment. In particular, the mandatory contribution would ensure that there is a business case for the CT. In addition, the mandatory contribution could contribute to the overall lowering of the cost of market data.

76. Many trading venues, but also a few data users, suggested redistribution of revenues from the CT to the relevant trading venues and APAs, or a fair compensation to trading venues and APAs, as the mandatory contribution could otherwise play as a disincentive to produce high quality data. A few data users indicated that the mandatory contribution should be on a fee-free basis for the CTP.

77. Some users and trading venues highlighted that mandatory contribution should also come with rules establishing data quality standards as well as oversight to ensure data consistency. In this respect, it was suggested that trading venues and APAs carry out data verification ahead of the submission to the CTP.

78. Feedback from a data vendor indicated that mandatory contribution can help, but itself would not solve the main issue, i.e. the difficulties concerning the CTP's business model. Few respondents expressed a negative opinion with regards to mandatory contribution and considered that private owned firms with a viable business project would be best positioned to operate CTPs.

Q25: Do you have preferences between the option of (i) requiring trading venues and APAs to contribute data to the CT, or, in alternative (ii) setting forth criteria to determine the price that CTPs should pay to trading venues and APAs for the data? If so, please explain why.

79. Most of the respondents, both users and trading venues, indicated that they prefer option (i), i.e. the mandatory submission of data to CTPs by APA and trading venues. As regards the prices that the CTP should pay, some users, as well as some trading venues, indicated that the data should be submitted to the CTP free of charge by trading venues and APAs to ensure that the resulting price charged for access to the CT is affordable for the widest possible audience.

80. Some users and trading venues indicated that in order to identify criteria to determine the price of submission to the CTP, further work on the provision of market data on an RCB should be done.

81. Different models to compensate contributing entities were suggested:

- Some trading venues deemed that the CTP should distribute a share of revenues back to contributing venues and APAs based on the market share represented by the data provided, or by trade type.
- A few data users proposed to explore a CT which is only based on "free-of-charge data" (i.e. data delayed of 15 minutes) whereby trading venues and APAs would not receive any payment.

- Another proposal considered that CTPs should pay trading venues and APAs on the basis of the number of users consuming its output product. The charges for the CTP could contemplate a discount to help cover the consolidation costs, and users should be allowed to buy segments of the CT.

82. Several trading venues stated that requiring trading venues and APAs to contribute data to the CT free of charge may undermine the exchanges' role in the market and in the price formation to the detriment of market transparency and investors.

83. Very few respondents stated that neither of the options (i) or (ii) are valid. One user and one trading venue consider that the existing RCB disclosure mechanism should be enough to ensure that a CTP would be able to access the data from each of the venues at reasonable cost.

Q26: Do you agree that the mandatory consumption could favour the establishment of a CT? If not, please explain your concerns associated with the mandatory consumption.

84. There were split views as to whether the consumption of CT data should be mandated. Overall most data users were reluctant to mandatory consumption of CT, whereas trading venues seemed to be favourable to it.

85. The arguments brought forward against mandatory consumption included:

- mandatory consumption could lead to a situation in which market participants carry costs for consuming data that they do not need or would not require, duplicating the data costs;
- mandatory consumption would remove a critical indicator as to whether the CT is fit for purpose and that the focus should be on creating the conditions that foster a cost effective and high-quality tape;
- if the CT offers the highest technical standard and delivers on an RCB for all consumers, then a large majority of European data consumers would subscribe without mandatory consumption;
- the establishment of a CT would not satisfy the demand of many market participants, that seek also context, market conditions, market depth, provided by quotes and derived indicators;
- the CTP would become a "super monopolist" with very limited incentives for cost-efficient operation; and
- The mandated use could create the expectation for brokers to refer to the CT as part of the best execution obligations.

86. Contrastingly, most trading venues were in favour of the mandatory consumption of the CT data. Some of them indicated that mandatory consumption together with mandatory payment

by each market participant would favour the establishment of a CT ensuring funding and revenues to the CT.

87. Such mandatory consumption could cover any provisions that require a calculation of size of market, or, if pre-trade data is included, the CT to be mandated as the pricing source for the price waiver systems and for best execution monitoring. Some respondents recommended to tailor the fees of the CT to the EU market, and not to replicate the US model. Some respondents advocated in favour for an “EU Tape of Record”, which in their view could provide for full aggregated liquidity view at low costs.

88. Generally, most trading venues stressed that a strong regulatory case for the mandatory consumption of CT is necessary to ensure that the CT does not add costs to the industry, without creating any benefits.

Q27: Would mandatory consumption impact other rules in MiFID II and if yes, how?

89. Almost all the trading venues answering to this question reiterated that if there is to be mandatory consumption of CT, it should be based on a sound regulatory case to ensure that the CT does not create costs without benefit.

90. Both trading venues and data users, when considering the impact of the mandatory consumption on other rules of MIFID II, identified such impact to be on the best execution regime. In particular, answers displayed a concern that CT mandatory consumption could lead to a more rigid best execution regime, as investors would expect their brokers to refer to regulated CT as part of their best execution obligation. This would limit flexibility of firms in designing their best execution policies and create the risk for best execution to rely solely on data from a CT. Very few respondents were of the view that the introduction of a CT would promote better execution practices, particularly for retail investors, without necessarily changing the current best execution rules.

Q28: Do you consider it necessary that the CT covers all trading venues and APAs and the whole scope of equity instruments or would you be supportive of limiting the coverage of the CT? Please provide reasons for your preference and explain your preferred approach.

91. Most respondents believed that the CT should have full coverage of the market, otherwise its advantages would be limited, as it would not represent a reliable source of the current traded price or provide a general transparent overview of the trading activity. Furthermore, comprehensive coverage was considered fundamental for transaction cost analysis, best execution assessments and general market research.

92. Considering the growth of trading on SIs after the introduction of MiFID II, respondents considered it crucial that SI trading, as well as OTC, are included in the scope. Otherwise, not only the CTP would not be significant, but also the data quality and consistency issues would not be addressed.

93. Regarding the limitation of types of instruments, some respondents indicated that focusing only in shares will not simplify the general structure of the CTP or reduce the number of



relevant trading venues and APAs, therefore the tape should include as many asset classes as possible. Nevertheless, several respondents mentioned that a phased implementation might be necessary from a practical point of view.

94. Despite the legal requirements being applicable only to equity instruments, numerous respondents stated that it would be useful to include non-equity instruments in the tape at a later stage. There was also a suggestion of having separate CTPs for equity and non-equity instruments in order to increase efficiency. Additionally, one respondent mentioned that even with the possibility of full coverage being the ideal scenario, there should be the option to acquire disaggregated data sets that suit the different needs of data users with different business models.

95. There were some respondents that stated that the scope of the CT should only be partial. Some of those respondents mentioned that a 100% consolidation of transactions in equity instruments is an unattainable goal that makes the CT unattractive from an operational point of view, therefore both the covered transactions and financial instruments should be reduced. Limiting the scope of instruments would also prevent a self-reinforcing cycle where only some venues contribute with data. In order to avoid that the CT covers only the most liquid venues, the threshold of transactions to be included should still be kept in a high level, so that adequate representation is ensured.

96. Very few respondents specified that the scope should be determined by market demands and not pre-defined. They also believe that the demand is not enough to allow for a private enterprise to establish the CTP.

Q29: Do you agree with ESMA's preferred model of real-time CT? If you consider that, on the contrary, the delayed or tape of record CT are preferable, please indicate the reasons of your preference.

97. A majority of respondents were in favour of a real-time CTP. These participants agree that although there is an issue with latency, that does not create a fundamental constraint for the success of the CT. A real-time CT would provide a global view of trading activity supporting a more integrated CMU.

98. On the other hand, mostly regulated markets argued that with an end-of-day tape of record costs would be reduced significantly. Furthermore, it would allow for consolidation of data over a longer period of time which can enhance data quality and consistency. Finally, an end of day tape of record should be used for data users to comply with regulatory requirements, such as best execution.

Q30: Are there any measures (either technical or regulatory) that can be taken in order to mitigate the latency impacts?

99. Some respondents stressed that there will always be latency issues with the CT but those are not relevant. Respondents seemed to be overall of the view that although latency issues will not be solved, that does not undermine the successful creation of a CTP.

100. A number of respondents considered that the introduction of speedbumps is the only way to solve latency issues. However, this would create artificial delays and unintended consequences that could be detrimental to EU market participants.

Q31: Do you agree that the CT should be operated on an exclusive basis? To what extent should other entities (e.g. APA or data vendors) be allowed to compete with the CTP?

101. Respondents expressed diverging views on this subject, with a majority of respondents considering that the CT should be operated on an exclusive basis.

102. One group of respondents, including both trading venues and users, considered that having only one CTP is necessary as it would permit the CT's business model to be successful, and it would avoid multiple technical infrastructures for a service which should centrally consolidate information. Furthermore, having more than one CTP would constitute an operational burden if data has to be directed to more than one CTP, and would risk coming out in a not-viable business model.

103. To avoid the drawbacks of having a single CTP (e.g. excessive fees, potential conflict of interest, non-transparency on revenues) some respondents proposed to include in the governance of the CTP regulators and have representation from the different areas/ roles within the market such as venues, APAs and investors. Another suggestion to avoid monopoly included assigning the exclusive CTP role as outcome of a tender, to be repeated every 5 years.

104. Contrastingly, a second group of respondents, including both trading venues and users, stressed competition should be allowed to avoid reverse incentives outcomes and to prevent the development of monopolistic structures. In particular, APAs and data vendors should be allowed to compete with CTP, to avoid the risk of CTPs imposing excessive fees. The viability of the CTP's business model would therefore only be guaranteed by addressing the issue of market data pricing.

105. Some users and trading venues noted that the CTP would complement services offered by data vendors, but not replace them, and market participants would likely still want to access data vendor products in addition to having access to an EU CTP, for the purposes of, inter alia, data analytics and affiliated news.

106. Few users considered that having one CTP per asset class would strike the right balance. This would maximise demand for the post-trade CT, while simplifying operational workflows for the trading venues and APAs submitting data.

Q32: Should the contract duration of an appointed CTP be limited? If yes, to how many years?

107. The great majority of the respondents agreed that the contract duration of an appointed CTP should be limited to about 5 years. One respondent specified the first provider would need to have a contract longer than 5 years to address the initial challenges and costs to establish a CT; whereas another respondent proposed the duration not to exceed the 5-year

limit but to grant CTP the possibility to be reappointed. Another stakeholder pointed out that without the calculation of a business case it is hard to define an appropriate contract duration.

108. A few respondents highlighted that in addition to limited contract duration, to safeguard against the risk of monopoly or conflict of interest, the top-level governance of any CTP needs to include a diverse set of market stakeholders.

109. Some respondents also suggested that regardless of the contract duration, the CTP should be subject to periodic pricing and performance reviews, to be carried out by an oversight committee, ESMA, or the Commission, together with the possibility of appointment of another CTP in case the review shows CTP deficiencies to deliver its purpose.

110. Those respondents who stated that they see no advantage in limiting the contract duration of a CTP disagreed in principle with the adoption of a monopolistic approach.

Q33: Please indicate what would be, in your view and on the basis of your experience with trading venues and data vendors, a fair monthly or annual fee to be charged by a CTP for the real-time consolidation per user?

111. Only a few respondents provided concrete figures, stating that either a CT could be paid for by the execution process, where exchanges charge a nominal fee for the number of messages that they receive, or trading venues and data vendors could charge EUR 10 – EUR 20.000 per firm per year. As it would act as a utility-like system, and considering the whole population of market participants, this low fee for data users would still result in several million Euros income.

112. The other respondents can be split into the following categories:

- the CTP should charge a price similar to the current payment for market data as not to harm exchanges and price formation;
- the CTP should charge the cost for consolidation and distribution plus an appropriate margin;
- if 15-minute delayed data was included in the pricing structure, everybody should pay a share;
- retail investors should not be charged for real-time data;
- the cost of the CT should be borne equally by users of the service;
- the cost of the CT should be borne by users of the service through a flat recurring fee common across all providers. The revenues should then be split among contributors by an ESMA-appointed CT administrator; and
- data should be free, and the price should be at network cost plus a reasonable margin.

Q34: Would you agree with the abovementioned model for the CT to charge for the provision of consolidated data and redistribute part of the revenues to contributing entities? If not please explain.

113. In general respondents agreed with the proposal. In particular:

- Some respondents generally agreed with the proposal;
- A few respondents agreed with the proposal but required transparency on the model;
- A few respondents agreed with the proposal but suggested that trading venues and APAs provide data to CTPs for free or that revenue sharing should be on an equal basis and not proportionate;
- Some agreed with the proposal but suggested that revenues should be allocated back to exchanges/APAs based on contribution to executed liquidity, weighted by value (e.g. price-forming trades weighted more heavily than trades executed under a waiver or in an auction);
- Some respondents agreed with the proposal but suggested that data sources should be fairly remunerated for the data they contribute to the CT, otherwise mandatory contribution will act as a disincentive to invest in the production of high-quality data;
- There was also disagreement with the model since the EU market is different from the US market where economies of scale can be reached earlier and to a larger extent;
- one respondent did not agree with the proposal because it creates incentives for venues to be established for the primary purpose of profiting from an inclusion into a CT;
- one respondent supported a non-for-profit utility style CTP.

Q35: How would Brexit impact the establishment of a CT? Would an EU27 CTP consolidating only EU27 transactions be of added value or would a CT that lacks UK data not be perceived as attractive?

114. A number of respondents highlighted that it is difficult in the current uncertain environment to assess the impact Brexit might have on the establishment of a CT.

115. Overall, a majority of respondents, in particular data users, saw value in establishing an EU27 CT, while stressing that ideally such a CT should also include UK data. Nevertheless, those respondents considered an EU27 CT useful on its own.

116. Some respondents, in particular regulated markets but also some data users, were more cautious and considered that the pertinence and relevance of an EU27 tape could be put into question. A few respondents considered that an EU27 CT would be of no interest and that any CT should also include UK and CH data.



117. Some stakeholders recommended that any CT should be able to encompass third-country information. Furthermore, respondents asked ESMA to explore mechanisms allowing for the consolidation of UK and EU data. One stakeholder suggested that EU investment firms executing trades in EEA shares on UK trading venues should report them via APAs, so as to include UK-data that is of relevance for the EU into the tape.

Q36: In your view, how would an EU27 CT impact the level playing field between the EU27 and the UK? Please explain.

118. Respondents either considered that an EU27 CT would improve the competitiveness of the EU or weaken it. Only a few respondents were of the view that the impact would be neutral or unclear.

119. Respondents that were concerned about negative impacts, in particular regulated markets and a few data users, considered that an EU27 would increase costs for market participants, in particular for trading venues, and thereby undermine the competitiveness of the EU.

120. Respondents thinking that the EU27 would have positive impacts on the competitiveness of the EU consider that an EU27 CT would create a more integrated market, allow investors to obtain a full picture of the trading volumes, unlock greater retail participation and move more trading on exchanges.