The MiFIR review and a European Consolidated Tape: the next step towards a Capital Markets Union
Rogge, E.

ERA Forum
https://doi.org/10.1007/s12027-023-00743-y

ARTICLE

The MiFIR Review and a European Consolidated Tape: the next step towards a Capital Markets Union

Ebbe Rogge[1]

Accepted: 20 April 2023

Abstract
One of the main elements of the MiFIR Review is the revision of the framework for a Consolidated Tape in Europe. The objective is to establish a tape for each of the three main asset classes: bonds, equity, and derivatives. The objective is to provide a single reference source of information for transactions. It would thus reduce fragmentation and information asymmetries within the Capital Markets Union. This paper examines the main elements of the proposals, tailored to each asset class, as well as different use cases. Overall, the proposals appear to be a significant improvement on the current unsuccessful framework.

Keywords Capital Markets Union · Consolidated Tape · MiFID II · MiFIR Review · Fragmentation · Market asymmetries

1 Introduction

A consolidated tape is a source in capital markets where information on the price forming for transactions in financial instruments is made available to all market participants. It therefore reduces information asymmetry in those markets. The European Commission (Commission) made its proposals for amendments of the Markets

Ebbe Rogge M.Sc. M.A. LL.M. Ph.D. is an Assistant Professor, Hazelhoff Centre for Financial Law, Leiden University, The Netherlands, and Senior Policy Advisor, Dutch Authority for Financial Markets. The opinions expressed herein are solely those of the author and in no way represent those of the Dutch Authority for the Financial Markets. The author would like to thank Susan Yavari and all other participants for the insightful discussion at the ERA conference, and Matthijs Geneste, Martijn Rookhuijzen and others for comments on an earlier version.

E. Rogge
e.rogge@law.leidenuniv.nl

[1] Leiden Law School, Kamerlingh Onnes Building, Steenschuur 25, 2311 ES Leiden, The Netherlands

Published online: 10 May 2023

in Financial Instruments Regulation (MiFIR Review) toward the end of 2021. These proposals include a revision of the framework for establishing a consolidated tape for various asset classes in the European Capital Markets Union (CMU). This paper examines these various aspects of these proposals.

Information asymmetry in financial markets suggests that one market participant has more information than another. One of the characteristics of market efficiency is the instant transmission of information, whilst asymmetries impede the efficient functioning of a market. The information advantage will typically be on the side of the larger, more sophisticated financial market participant who could hold an advantage over the less well informed participants. Although specific use cases will be discussed later on in this paper, the basic idea behind establishing a consolidated tape is to reduce these information asymmetries considerably. At present, selling this transaction information or market data to those willing (and able) to pay for it is currently a key part of the incumbent business model of various market participants. As a consequence, the proposed legislation has been rather contentious.

The focus in this paper is in particular on the European CMU. One of the pillars of the CMU framework is the Markets in Financial Instruments Directive[1] II and Regulation,[2] known colloquially as MiFID II. Its main objectives were, following the Financial Crisis of 2008, to ensure more transparency in financial markets, to improve investor protection, and generally to restore confidence. Currently, co-legislators in Brussels are working on an update generally referred to as the 'MiFIR Review'.[3] The Commission published its proposal on 25 November 2021, which consists broadly of three different sets of changes.[4] The first is to prohibit payment for order flow, i.e. receiving payment for forwarding client orders. The second is to remove obstacles for establishing a consolidated tape. The third are additional transparency and market structure issues, such as, amongst others, trading obligations and multilateral trading definitions. This paper will deal with the second set of these changes: establishing a consolidated tape.

This paper proceeds as follows. The next section will examine the fragmentation in the CMU, followed by a section based on this analysis to identify various use cases for a consolidated tape. The next two sections assess the current, unsuccessful regime for a tape under MiFID II and the new approach set out in the MiFIR Review. The section thereafter draws a comparison with the US capital markets, in so far as possible, followed by some conclusions.

[1] DIRECTIVE 2014/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15.5.2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU (recast) https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32014L0065&from=EN.

[2] REGULATION (EU) No 600/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15.5.2014 on markets in financial instruments and amending Regulation (EU) No 648/2012 https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32014R0600&from=EN.

[3] See, e.g. *Bassi & Rookhuizen* [8]; *Autoriteit Financiële Markten* [4, 5].

[4] Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Regulation (EU) No 600/2014 as regards enhancing market data transparency, removing obstacles to the emergence of a consolidated tape, optimising the trading obligations and prohibiting receiving payments for forwarding client orders, COM(2021) 727 final https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52021PC0727&from=EN.

2 Europe's fragmented capital markets

In 2015 the Commission launched the creation of a European CMU.[5] The idea was to complement the Banking Union and promote further the raising of capital from financial markets within the EU.[6] Extending the EU Single Market to include financial markets would promote the competitiveness of the EU and of European companies. Following the Financial Crisis in 2008, said markets had a negative connotation due to their role therein, needing a push to increase their attractiveness and to play a role in activating citizens' savings.[7] The creation of a CMU is, however, a long term plan: bank-based financing is historically the norm in the EU and changing the structure towards more market-based financing is a slow process.[8]

European equity markets have historically grown from domestic and regional exchanges, determined by local demand at the time.[9] One of the first was the Amsterdam Stock Exchange, established in 1602.[10] It was originally established to finance the Dutch East India Company through easily transferable shares, but the range of products was swiftly extended to a variety of products including forwards and options. In contrast, within Germany several stock exchanges were established to service the relative economically independent regions.[11] Nowadays, to coin a phrase, financial markets have become global. Companies will no longer necessarily seek a listing on an exchange near their (global) headquarters, nor will investors be mainly regional. However, within the European CMU, one is thus faced with the historical legacy of a scattered landscape with many different national and regional stock exchanges. And added to that mix are some of the larger exchange groups and trading platforms which have established themselves in the EU post-Brexit.[12] Although all these exchanges and trading platforms are covered by the same regulatory framework under MiFID II, and are typically authorized as a Regulated Market[13] (RM) or sometimes as a Multilateral Trading Facility[14] (MTF), the CMU remains fragmented. To make matters 'worse', the landscape contains a variety of other places where shares

[5] COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS, Action Plan on Building a Capital Markets Union COM(2015) 468 final https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52015DC0468&from=EN.

[6] *Quaglia et al.* [45], p. 185.

[7] *Braun et al.* [10].

[8] *Véron & Wolff* [55].

[9] See for example: *Wójcik* [56].

[10] See for example: *Petram* [44]. It should be recognised that at least part of the wealth created was made through slave trade, see e.g. *Brandon & Bosma* [9].

[11] See for example: *Burhop & Lehmann-Hasemeyer* [11].

[12] *Stafford* [51]; *Jones* [38]; *Jones & Howcroft* [36].

[13] As per MiFID II Art (4)(1)(21): a multilateral system operated and/or managed by a market operator, which brings together or facilitates the bringing together of multiple third-party buying and selling interests in financial instruments – in the system and in accordance with its non-discretionary rules – in a way that results in a contract, in respect of the financial instruments admitted to trading under its rules and/or systems, and which is authorised and functions regularly and in accordance with Title III of this Directive.

[14] As per MiFID II Art (4)(1)(22): a multilateral system, operated by an investment firm or a market operator, which brings together multiple third-party buying and selling interests in financial instruments

can be traded, such as the Systematic Internalisers[15] (SIs) operated by investment banks and over-the-counter (OTC) trading. On an SI, trading is not multilateral but bilateral, with the investment bank itself as counterparty and placing its own capital at risk in doing so. A recent report by Oxera on behalf of the Association for Financial Markets in Europe (AFME) shows that on-venue trading constituted around 83% of all trading (of which 17% was off-book but on-exchange), whilst 17% was traded on SIs or OTC.[16]

Bonds are another important asset class: according to a study by AFME, government- and corporate bond markets raised 26 times the amount of capital in 2020 compared to equity markets.[17] A key difference with equity is that bonds issued by the same issuing company may vary widely in characteristics (e.g. maturity, coupon, etc.) depending on the financing needs of the issuer. The European Central Bank (ECB) notes that the EU bond market has been a rapidly growing source for funding for companies over the last two decades.[18] It is therefore an essential part of the CMU. Most of the trading activity still takes place OTC, typically by way of voice-trading. This is especially the case for large volumes or for illiquid bonds. Electronic trading is, however, increasing, reaching around 36% in 2021.[19] Next to OTC trading there is also significant trading on-venue. Some of the largest bond-trading platforms in the EU have established a presence in Amsterdam following Brexit.[20] These platforms are typically authorized under MiFID II as an MTF. Transactions executed off-venue are reported to an Approved Publication Arrangement (APA).[21]

The third category are derivatives markets. This is a more complex category, in the sense that it could contain many different derivatives (e.g. exchange traded derivatives (ETD) or OTC) which all have their own distinctive features, characteristics, and underlyings. Equity derivatives are typically short-dated and traded on venue. Interest rate swaps (IRSs) and credit default swaps (CDSs) on the other hand usually have a maturity of five to ten years. The standard, or plain vanilla, IRSs and CDSs are sufficiently liquid to be in scope of the Derivatives Trading Obligation (DTO) under Art 28 MiFIR and are therefore concluded on a multilateral trading venue: in 2021, around 64% of all IRSs was concluded on a multilateral venue.[22] The inter-dealer market generally uses the traditional brokers, now operating as an Organised Trading

– in the system and in accordance with non-discretionary rules – in a way that results in a contract in accordance with Title II of this Directive.

[15] As per MiFID II Art (4)(1)(20): an investment firm which, on an organised, frequent systematic and substantial basis, deals on own account when executing client orders outside a regulated market, an MTF or an OTF without operating a multilateral system.

[16] *Oxera* [43].

[17] *AFME* [3].

[18] *Darmouni & Papoutsi* [15].

[19] *AFME* [3], p. 2.

[20] *Jones* [37]; *Stafford* [53]; *Stafford* [49].

[21] As per MiFID II Article (4)(1)(52): a person authorised under this Directive to provide the service of publishing trade reports on behalf of investment firms pursuant to Articles 20 and 21 of Regulation (EU) No 600/2014 [MiFIR].

[22] *ISDA* [31].

Facility[23] (OTF), whilst the dealer-to-client market can be found on the MTFs. The more complex, structured and less liquid derivatives are typically executed with an SI: in 2021, this was around 28% of the IRS market.[24] As with other off-venue executed instruments, transactions are reported through APAs. The end result is that there are many different types of venues within the CMU for derivatives trading, adding to the fragmented landscape.

All of the above points towards a scattered landscape of capital markets across Europe. There is one final ingredient to add to this: as a result of Brexit, London, previously the most important center for financial markets within Europe, now lies outside the EU, outside the CMU, and with (almost) no passporting of financial services into EU available.[25] With Brexit still relatively fresh, it almost feels like the CMU has to compete with London, with the UK government and regulators setting out their own ideas on regulating capital markets.[26] It raises the question: how to build a 'true' European CMU, how to overcome fragmentation, and how ensure financial market participants may obtain the same overview reducing asymmetries? Although an EU consolidated tape may perhaps not be a panacea, if done properly it could certainly contribute towards answering these questions.

3 The use cases for an EU Consolidated Tape

Given the fragmented landscape, as described above, the general objective of the tape would be creating an overview of the entire CMU whilst reducing information asymmetries. Having said that, going a little bit deeper, what could be the more specific and detailed use cases for a consolidated tape? Several use cases can be identified, all of which broadly fall within one of the following four categories.[27] The first category follows directly from the observations made above, i.e. to create a level playing field and to foster the CMU. This means easy access to price and liquidity information for all market participants, both issuers and investors, instead of the need to connect to many different sources of data, including trading venues. Instead, one would only need to connect to a single consolidated tape.[28] Whilst arguably some of the largest market participants, such as asset managers or pension funds, are able to connect to many commercial data sources, smaller- and retail investors usually are not. Moreover, a consolidated tape should not just be a single source of reference information, it should be designed in a way which makes it far less costly to obtain all this information in a comparable way. In turn, this would increase the attractiveness

[23] As per MiFID II Article (4)(1)(52): a multilateral system which is not a regulated market or an MTF and in which multiple third-party buying and selling interests in bonds, structured finance products, emission allowances or derivatives are able to interact in the system in a way that results in a contract in accordance with Title II of this Directive.

[24] *ISDA* [31].

[25] Apart from central clearing, although efforts are underway to reduce this dependency on London (EMIR Review).

[26] *HM Treasury* [30].

[27] *AFM* [6].

[28] *BVI et al.* [26].

of the European capital markets not just for domestic investors, but also for foreign investors, who may otherwise go to the US or UK markets.

The second category of use cases relates to EU-wide reference pricing.[29] Having such a single reference price will greatly assist financial market participants in their trading and investment decisions. It will benefit asset allocation, but also risk management through the accurate pricing of collateral or through accurate trading book or portfolio valuation. The third category is the improvement of quality and resilience of markets.[30] Accurate and transparent reference prices will allow market participants to assess the quality of execution of their transactions: this will empower clients to ensure that investment firms executing their orders have fulfilled their 'best execution' requirement as per Art 27 MiFID II and obtained the best possible results for the client.[31] Not just quality but also market resilience could improve: a tape would, for example, continue to provide an overview of EU-wide trading when the primary venue, i.e. the exchange where the shares are listed at their initial offering, is hit by a technical outage.[32] The fourth and final category is about risk- and performance management.[33] In particular risk management, including market- and credit risk management as well as collateral management, can improve significantly if a single reference price is available. In times of volatility, the fund management industry would also be able to improve their liquidity risk management.[34] Moreover, from a regulatory perspective, it may become easier to conduct e.g. market analysis or surveillance.[35]

Apart from the above use cases, industry groups underline the strategic importance of a consolidated tape for EU markets in relation to competition with other financial centers.[36] The generally held view is that a tape would deepen and unify the CMU, thereby increasing its attractiveness globally due to its benefits for end investors.[37] As various fund management- and securities markets groups have highlighted, the CMU is facing strong competition from the UK.[38] Of course, the UK is now more nimble in amending its regulatory framework: it will compete and seek to establish a consolidated tape as well,[39] reviewing the cost of market data for financial market participants.[40]

---

29 *AFM* [6].

30 *AFM* [6].

31 *EFAMA* [18], p. 3.

32 *EFAMA* [18], p. 5.

33 *AFM* [6].

34 *EFAMA* [18], p. 4.

35 *EFAMA* [18], p. 5-6.

36 *EFAMA* [20].

37 *Stafford* [52].

38 *BVI et al.* [26].

39 *Lex* [40].

40 *Stafford* [54].

4 Improving the Consolidated Tape under MiFID II and the MiFIR Review

At this point, having established the need for an EU Consolidated Tape, it must be observed that the idea of creating one is not new at all. In fact, the current MiFID II framework already contains provisions necessary to establish one, as originally set out in Art 65 of the Directive. Note that, following the European Supervisory Authorities (ESA) Review, those provisions have moved from the Directive to Art 27h of the Regulation.[41] Unfortunately, it has not resulted in the actual establishment of a consolidated tape. This raises the questions: which parts of the legislative framework did not work, and what is wrong in the present setup? And above all, what can be learned from it? The views on this vary between financial market participants, and, as pointed out in the introduction, it is fair to say that these views are occasionally driven by the desire to protect incumbent business models.[42]

Some of the provisions under Art 27h MiFIR on a potential consolidated tape provider (CTP) have proven particularly problematic: for example, Art 27h (3) states that the CTP is required to ensure that all data 'is consolidated from all the regulated markets, MTFs, OTFs and APAs … '. In other words, the CTP is required to ensure a full 100% is on the tape. This requirement is prohibitive, certainly in the starting phase, as it is seemingly impossible to get everyone on board without provisions for mandatory contribution of the required data in addition to data quality currently not being on par. As a result, the CTP was deemed to be not commercially viable and simply technically not feasible.

Many have argued that any revision of the framework should ensure that both trading venues and APAs are required to provide data to the CTP ('mandatory contribution'),while market participants may not be required to purchase the tape ('no mandatory consumption').[43] The latter could be seen as a shortcoming in the current proposals, whilst others argue there will always be 'a large demand for a high quality and affordable tape'.[44] Furthermore, there should be a single tape for each asset class (rather than multiple), creating a unique and unambiguous reference price. Otherwise, ambiguity may simply remain, which would not serve market participants. The next section will outline the revised CTP framework in the current MiFIR Review proposals.

[41] This was done via Art 4 of REGULATION (EU) 2019/2175 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18.12.2019 amending Regulation (EU) No 1093/2010 establishing a European Supervisory Authority (European Banking Authority), Regulation (EU) No 1094/2010 establishing a European Supervisory Authority (European Insurance and Occupational Pensions Authority), Regulation (EU) No 1095/2010 establishing a European Supervisory Authority (European Securities and Markets Authority), Regulation (EU) No 600/2014 on markets in financial instruments, Regulation (EU) 2016/1011 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds, and Regulation (EU) 2015/847 on information accompanying transfers of funds https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32019R2175&from=EN#d1e13168-1-1.

[42] *EUROFI* [16]; *EUROFI* [17].

[43] AFME [2].

[44] *EFAMA* [19], p. 3.

5 The MiFIR Review proposals

5.1 Consolidated Tape for bonds

The core idea of the proposals is that there will be a single CTP, i.e. a single official reference point, for each asset class (bonds, equity, and derivatives). The proposed new Article 27da sets out a selection process for a single CTP for each asset class. This selection process, or tender, would be organized by the European Securities and Markets Authority (ESMA).[45] Art 27da (2) provides ESMA with a set of criteria it would need to consider, including amongst others expenditure and fees, technical capability and governance, and speed. These criteria would safeguard a fast, stable and affordable tape for market participants. Art 27h setting out organizational requirements for the CTP is replaced and updated in its entirety. These are aimed at achieving the selection criteria used by ESMA and seek to ensure a continuous flow of market data from the trading venues and APAs to the users of the CT without interruptions or reduction in quality.

It appears that the bond market is the area where a consolidate tape might bring the largest gains. The Commission MiFIR Review proposal, examining the likely impacts of their preferred options, suggests that slippage, or the difference between the value of the asset just before the order and the price at which it is actually traded, is estimated between most market participants to be between 5bp up to 50bp. This could be explained by where bonds are traded, as previously discussed: ESMA reports that only around 40% of (government and corporate) bond transactions take place on a multilateral trading venue (i.e. RM, MTF, or OTF) whilst 50-60% takes place on an SI, with the remainder being classified as OTC.[46]

Based on the results of a roundtable organized in April 2022 as well as experiences with participants in their Innovation Hub, the Dutch Authority for Financial Markets (AFM) drafted a series of 'high level principles' for a consolidated tape for corporate bonds.[47] These are supported by a large variety of market participants, including venues, traders, buy-side and sell-side. Various policymakers, including from the Commission and ESMA, had joined the roundtable as observers. It was established that the goal of the tape would be to 'reduce fragmentation of information, improve transparency and data quality, assist decision making and provide valuable insights to investors, liquidity providers, and issuers.[48] This is very much aligned with the objectives and use cases set out previously.

In order to achieve these objectives, the bond tape should contain real-time information.[49] This has been included in the Commission proposal in the new Art 22a, stating that market data should be provided to the CTP in a harmonized format as close to real-time as is technically possible. A possible template for this may be based upon Annex 1 in Delegated Regulation (EU) 2017/583 (known as 'RTS 2')

[45] For the role of ESMA, see: *Moloney* [41], *Rijsbergen* [46], and *Rijsbergen & Rogge* [47].

[46] *ESMA* [23].

[47] *AFM* [7].

[48] *AFM* [7], p. 2.

[49] *AFM* [7], p. 2.

and in particular on its proposed revision.[50] For bonds, post-trade info would be a real win already given large amount of OTC trading reported via APAs.

One of the more contested aspects in the creation of a bond tape is the deferral regime. Deferrals are used to delay the moment the transaction, in particular the price and volume, is made transparent and hence would be made available for publication on the tape. The current framework allows for each Member State to calibrate its own deferral regime. For the bond tape to work, one would need a single EU-wide calibration of deferrals regime for bonds. In order to achieve this, the Commission proposal amends Art 11 to create a new deferral regime. Unfortunately, different market participants benefit from differently calibrated regimes. For example, some asset managers may prefer longer deferrals to trade out of large and illiquid positions: these may need to be broken down in smaller trades and may take several weeks, so transparency would give other market participants a heads up of what is going on. On the other side are trading firms or principal trading groups: these would benefit from minimal deferrals to provide maximum transparency in the bond markets. These interests need to be balanced when calibrating the deferral regime using criteria such as size, issue, liquidity, and accordingly vary the length of the deferral period.

5.2 Consolidated Tape for equity

The ambition for the equity class, i.e. for shares and Exchange Traded Funds (ETFs), is to have a close to real time consolidated tape. The inclusion of pre-trade data has proven to be controversial. The proposed new Article 27da suggests commencing the equity tape on a post-trade basis and to include pre-trade at a later stage. The proposal by the Parliament goes further: the report by Hübner notes that '[w]hile the biggest players in the market will continue to seek access to the data stream that they currently use, a pre-trade CT in equity will be a great addition for players such as small and medium-size asset managers, or foreign investors seeking to access the EU markets'.[51] Combined industry groups have come out in support of the inclusion of pre-trade information, for example by including the top five price level data from all central limit order books (top-of-order book).[52]

AFME as well as the organization for European Asset Managers (EFAMA) argue that users of an equity tape need real-time pre- and post-trade information.[53] The difference between for example equity markets and bond markets is, according to EFAMA, that equity markets are 'order-driven', i.e. matching of orders occurs in a transparent market with full bid- and offer information available.[54] In contrast, bond markets are 'price-driven', where bids and offers from dealers are observed but not from all market participants. In the bond markets, this is beneficial as it provides

[50] COMMISSION DELEGATED REGULATION (EU) /... amending the regulatory technical standards laid down in Delegated Regulation (EU) 2017/583 as regards certain transparency requirements applicable to transactions in non-equity instruments, C(2023) 246 final (17 Jan 2023) https://ec.europa.eu/transparency/documents-register/api/files/C(2023)246_1/090166e5f66eccbd?rendition=false.

[51] *European Parliament, Committee on Economic and Monetary Affairs* [21].

[52] *AFME et al.* [1]; *CBOE Europe* [12]; *Khasawneh* [39].

[53] *Heistruvers* [28]; *AFME* [2].

[54] *AFME* [2].

more liquidity and allows for larger trades to be executed at quoted rates. Similarly, it should be noted that 'as close to real-time as possible' has a different meaning in equity- and in bond markets: EFAMA argues in equity markets it could be in the seconds range whilst in bond markets it could be a minute.[55] This would keep it firmly out of the low-latency field, an area where stock exchanges may continue to generate revenues by selling data.

It is fair to say not all primary exchanges have been enthusiastic about the current proposals.[56] This could be summarized by stating these exchanges would potentially see the revenue stream from selling market data reduced whilst the perceived benefits for them are limited. The current proposal includes provisions for mandatory contribution of market data under the new Article 22a, however, some exceptions to the overall CTP framework have been made to alleviate concerns. In particular, the Hübner report proposes an opt-in approach for smaller exchanges (i.e. small volume or not contributing to fragmentation).[57] Moreover, the current proposal acknowledges the important position of primary exchanges in the revenue redistribution model under the new Article 27da (4).

The EU proposals for a real-time equity tape including top-of-orderbook information would also facilitate the establishment of a European best bid offer (EBBO). The EU proposals are less prescriptive on the revenue distribution or fees charged to the users, with the Hübner report[58] making a few suggestions: first, the tape should be (nearly) free for retail investors to encourage their participation in capital markets. Second, to stimulate exempted smaller exchanges to opt-in, they should receive a relatively higher revenue from the tape. Other than that, the Commission's proposal is to include the revenue participation scheme as part of the tender process overseen by ESMA as per the new Article 27da (4).

As a final note on the equity tape, it deserves pointing out that one of the advantages of individual equity data being available on the tape is the information it provides on the underlying for exchange traded funds (ETFs). In the US, with the liquidity of the underlying assets being far more transparent, the ETF market is much further developed than in the EU. This is one of the benefits of an equity tape in particular for the asset management industry, demonstrating a clear demand within the EU for such a tape.[59] Moreover, it shows that a market for more sophistic data than available on the tape can still exist.

5.3 Consolidated Tape for derivatives

The third identified asset class for which a consolidated tape should be established is derivatives. The scope is less obvious compared with equity or bonds, as it raises the issue which derivatives should be included and which not? Transparency and unique reference pricing might be welcomed for standardized plain vanilla derivatives, such

[55] *EFAMA* [20].

[56] *Jeffs* [33]; *Stafford* [50].

[57] *European Parliament, Committee on Economic and Monetary Affairs* [21].

[58] *European Parliament, Committee on Economic and Monetary Affairs* [21].

[59] *EFAMA* [20], p. 2.

as standard Euro interest rate swaps, but it is far less useful for tailor-made over-the-counter complex products. Whilst these opposite ends of the spectrum may provide some clear cut cases, it remains difficult to determine the exact scope.

Some further insights are provided by the Annual Statistical Report produced by ESMA.[60] It claims that 77% of interest rate derivatives are classified as trading OTC and off-venue, whilst 87% of credit derivatives are classified as such. As the Commission MiFIR Review proposal observes, as one of the problems it tries to tackle, it is in particular in this segment that there is very little post-trade transparency. The Commission argues it contributes to opacity in the pricing process, generally at the expense of smaller market participants who suffer most from the information asymmetry. At the same time, ESMA reports 71% of all interest rate derivatives and 41% of all credit derivatives are cleared.[61] Accordingly, the Commission's proposal in the new Article 22a brings those derivatives in scope which are subject to the clearing obligation as defined in Article 4 of Regulation (EU) No 648/2012 (EMIR).[62] This approach has been supported by the Parliament. In practice, the classes of instruments subject to the Clearing Obligation is determined by ESMA, based on the criteria set out in Article 5 EMIR and the relevant delegated regulation, and is updated and published regularly.[63]

In terms of priority, the Consolidated Tape for Derivatives is listed last. This is not without reason: it has been suggested there are technical difficulties inherent in establishing a derivatives tape, whilst demand from market participants appears less strong. As regards the technical difficulties, several market participants, including the International Swaps and Derivatives Association (ISDA), raise concerns about the use of International Securities Identification Numbers (ISINs).[64] ISINs are an alphanumeric code using 12 positions which can unique identify a security. ISDA notes at least two issues with its use for creating transparency. First, two identical products (e.g. a five-year interest rate swap) traded between the same two parties, but one traded a day later than the other, would get different ISINs. Second, if the same two swaps were traded on the same day between the same parties, but one was centrally cleared and the other was not, it would obtain the same ISIN despite their pricing being different because the counterparty credit risk differs. These apparent technical issues are, however, subject to debate, as other market data specialists argue there certainly are ways to overcome these obstacles.[65] Likewise, whilst ISDA argues there is very little appetite amongst market participants for a derivatives tape, their own paper appears to suggest about half of respondents to a survey most certainly see a need.[66] Moreover, specific use cases for reference prices in derivatives have been

[60] *ESMA* [22], p. 5 with percentage of notional amounts.

[61] *ESMA* [22], p. 5 with percentage of notional amounts.

[62] REGULATION (EU) No 648/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4.7.2012 on OTC derivatives, central counterparties and trade repositories https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32012R0648&from=EN.

[63] *ESMA* [24].

[64] *ISDA* [32].

[65] *Clarus FT* [13].

[66] *ISDA* [32], p. 2.

suggested, for example to assist banks with the regulatory requirements to manage the risk on their trading books.[67]

6 Comparison with the US

It is often suggested to compare the European capital markets with the US, where a consolidated tape has long been established. However, historical developments in the US indicate that its market structure is inherently different from Europe, so a word of caution is required before starting any comparison.[68] Currently in the US equity markets there are two main categories of data products.[69] The first is the consolidated feed (tape) which consists of both real-time trade and quote data from all trading venues. The quotes are the 'top-of-orderbook' quotes, allowing for a national best bid offer (NBBO) to be established. The consolidated feed is managed by a single information processor (SIP). The SIP is overseen by the Consolidated Tape Association and participants include the major US stock exchanges, such as those run by CBOE, NYSE, and Nasdaq.[70]

The second category of data products are expanded versions of the SIP feed, sold by exchanges to subscribers. The expanded version of this data may include, for example, deeper order book information, i.e. more orders other than the best bid and offer. Different market participants may have needs for this more sophisticated and expanded data, whilst the real-time consolidated basic trade and quote information is available as 'SIP data'. The former will obviously be more expensive than the latter. The prices for market data are regulated by the SEC, which must approve any change to a pricing schedule for both the basic and the expanded data. It is noted that, in approving pricing levels for the basic consolidated feed, the SEC should consider the value of the aggregated product as a whole, and not merely the individual costs incurred for providing the individual data feeds.[71] There are various different categories of fees depending on the category of data, but in all cases, the fee schedules publicly are available, creating transparency for (potential) users. The fees collected are redistributed to those who contributed. The exchanges provide order information, which is more valuable e.g. for price discovery, hence they tend to get a relatively larger share of the revenues.[72]

In general, the US bond markets are more difficult to compare because US treasury bonds are far more liquid than (some) EU government bonds, and the same holds for corporate bonds. The Financial Industry Regulatory Authority (FINRA) operates Trade Reporting And Compliance Engine (TRACE), which facilitates the mandatory reporting of OTC bond trading.[73] The introduction of TRACE, i.e. the bond tape

---

[67] *Helm* [29].

[68] *Harman* [27], *Rogge* [48].

[69] *Jones* [34], p. 7-8; *Jones* [35].

[70] *Consolidated Tape Association* [14].

[71] *Jones* [34], p. 15.

[72] *Jones* [34], p. 32.

[73] *FINRA* [25].

in US, has contributed significantly towards reducing transaction costs.[74] The main reason is that these markets were largely OTC: the introduction of transparency has reduced information asymmetries, i.e. the advantages for dealers relative to investors, which brought down these costs. It is not unreasonable to expect similar benefits in Europe. As regards deferrals for bond transactions, as discussed previously, it is interesting to note that in the US there is no deferral on price but only on volume, whereas Europe appears to be heading towards a mix.

7 Conclusion

This paper has sought to provide an overview of the Commission's MiFIR Review proposals and those of Parliament for a consolidated tape and its role within the CMU. It is an ambitious proposal, improving on the current framework under MiFID II, and with support from Parliament, Council, and Commission. It is a clear step forward for the CMU, which will benefit from a single reference point for trade information amongst it otherwise fragmented markets. As such, it will also reduce information asymmetries between the different financial market participants. Moreover, a consolidated tape is hoped to increase resilience in the markets as well as increase the attractiveness and competitiveness of the CMU against other capital market centers worldwide. Of course, there still is a long way to go before the establishment of a consolidate tape: for starters, the proposals are, at present, still subject to negotiation in Brussels. Once agreed, it is not unlikely that further details will need to be set out by way of ESMA delegated legislation. And finally, the envisaged sequential tender process under the auspices of ESMA may commence. That takes us, realistically, a few years further. Nonetheless, this should not serve as a deterrent to make the proposals for an ambitious consolidated tape for the different asset classes a reality.

Declarations

Competing Interests The authors declare no competing interests.

References

1. Association for Financial Markets Europe (AFME), German Investment Funds Association (BVI), Chicago Board Options Exchange (CBOE), European Fund and Asset Management Association

[74] *Oxera* [42].

(EFAMA): A cross-industry consensus on the EU equity consolidated tape proposal - statement of principles (30 May 2022). Available at: https://cdn.cboe.com/resources/participant_resources/Cross_Industry_position_on_the_CT_-_Statement_of_Principles.pdf
2. Association for Financial Markets Europe (AFME): AFME position paper on the consolidated tape (Aug 2022). Available at: https://www.afme.eu/Portals/0/globalassets/images/publications/AFME%20Consolidated%20Tape%20Update%20Draft%20Paper_Aug%2022_final_clean%20(002).pdf?ver=2022-09-06-121617-263
3. Association for Financial Markets Europe (AFME): Understanding EU bond market structure and dynamics (Nov 2021). Available at: https://www.afme.eu/Portals/0/DispatchFeaturedImages/AFME_FixedIncome2021_08.pdf
4. Autoriteit Financiële Markten (AFM): A review of MiFID II and MiFIR: impact on the fixed income and derivative markets (27 Aug 2020). Available at: https://www.afm.nl/~/profmedia/files/publicaties/2020/mifid-review-non-equity-external.pdf?la=nl-nl
5. Autoriteit Financiële Markten (AFM): Impact analysis MiFID II (May 2020). Available at: https://www.afm.nl/~/profmedia/files/rapporten/2020/impact-mifid2.pdf
6. Autoriteit Financiële Markten (AFM): No technical barriers for the implementation of a consolidated tape for fixed income (22 Nov 2021). Available at: https://www.afm.nl/en/sector/actueel/2021/november/consolidated-tape
7. Autoriteit Financiële Markten (AFM): The corporate bond consolidated tape: high-level principles (10 May 2022). Available at: https://www.afm.nl/en/sector/actueel/2022/mei/technical-principles-corporate-bond
8. Bassi, U., Rookhuizen, M.: MiFIR: how to get the balance right? J. Secur. Oper. Custody (2023, forthcoming)
9. Brandon, P., Bosma, U.: The importance of Atlantic slavery for the 18th century Dutch economy. Africa at London School of Economics Blog (20 Aug 2019). Available at: https://blogs.lse.ac.uk/africaatlse/2019/08/20/atlantic-slavery-history-dutch-economy/
10. Braun, B., Gabor, D., Hübner, M.: Governing through financial markets: towards a critical political economy of Capital Markets Union. Compet. Change **22**(2), 101–116 (2018). https://doi.org/10.1177/1024529418759476
11. Burhop, C., Lehmann-Hasemeyer, S.: The Berlin stock exchange and the geography of German stock markets in 1913. Eur. Rev. Econ. Hist. **20**(4), 429–451 (2016). https://doi.org/10.1093/ereh/hew010
12. Chicago Board Options Exchange (CBOE) Europe: Window of opportunity – the case for a European Consolidated Tape. Available at: https://cdn.cboe.com/resources/participant_resources/Cboe-Europe-Consolidated-Tape-View.pdf
13. Clarus FT: Consolidated Tape: don't let perfection be the enemy of good for derivatives (24 Nov 2021). Available at: https://www.clarusft.com/consolidated-tape-dont-let-perfection-be-the-enemy-of-good-for-derivatives/
14. Consolidated Tape Association: About. Available at: https://www.ctaplan.com/index
15. Darmouni, O., Papoutsi, M.: The rise of bond financing in Europe. ECB Working Paper Series No 2663 (May 2022). Available at: https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2663~06c26039e0.en.pdf
16. EUROFI: Consolidated Tape: prospects for delivery. In: EUROFI Seminar Summary, pp. 118–121 (2022). Available at: https://www.eurofi.net/wp-content/uploads/2022/05/the-eurofi-high-level-seminar_paris_consolidated-tape_prospects-for-delivery_summary_february-2022.pdf
17. EUROFI: EU Consolidated Tape and European single point of access. In: EUROFI Seminar Summary, pp. 75–78 (2021). Available at: https://www.eurofi.net/wp-content/uploads/2021/08/eu-consolidated-tape-and-european-single-point-of-access_summary_lisbon-virtual-seminar_april-2021.pdf
18. European Fund and Asset Management Association (EFAMA): Buy-side use cases for a real-time consolidated tape (15 Nov 2015). Available at: https://www.efama.org/sites/default/files/files/21-4075_CT_usecases_15Nov2021v3.pdf
19. European Fund and Asset Management Association (EFAMA): EFAMA position MiFIR Review – a buy-side view on consolidated tape and market structure reforms (14 Feb 2022). Available at: https://www.efama.org/sites/default/files/files/22-4004_MiFIRReview_EFAMA%20position.pdf
20. European Fund and Asset Management Association (EFAMA): EFAMA welcomes proposals on affordable consolidated tape: the association continues to urge action on market data costs (25 Nov 2021). Available at: https://www.efama.org/sites/default/files/files/Consolidated%20tape%20November%202021%20final.pdf

21. European Parliament, Committee on Economic and Monetary Affairs (Rapporteur: Danuta Maria Hübner): DRAFT REPORT on the proposal for a regulation of the European Parliament and of the Council amending Regulation (EU) No 600/2014 as regards enhancing market data transparency, removing obstacles to the emergence of a consolidated tape, optimising the trading obligations and prohibiting receiving payments for forwarding client orders (COM(2021)727 – C9-0440/2021 – 2021/0385(COD)). Available at: https://www.europarl.europa.eu/doceo/document/ECON-PR-731644_EN.pdf
22. European Securities and Markets Authority (ESMA): EU derivatives markets – ESMA annual statistical report (2021). Available at: https://www.esma.europa.eu/sites/default/files/library/esma50-165-2001_emir_asr_derivatives_2021.pdf
23. European Securities and Markets Authority (ESMA): EU securities markets – ESMA annual statistical report (2021). Available at: https://www.esma.europa.eu/sites/default/files/library/esma50-165-2004_eu_securities_markets_asr_2021.pdf
24. European Securities and Markets Authority (ESMA): Public register for the clearing obligation under EMIR (18 Oct 2018). Available at: https://www.esma.europa.eu/sites/default/files/library/public_register_for_the_clearing_obligation_under_emir.pdf
25. Financial Industry Regulatory Authority (FINRA): Trade reporting and compliance engine. Available at: https://www.finra.org/filing-reporting/trace and at: https://www.finra.org/filing-reporting/trace/faq
26. German Investment Funds Association (BVI), European Fund and Asset Management Association (EFAMA), European Forum of Securities Associations (EFSA), Nordic Securities Association (NSA): MiFID II / MiFIR – BVI-EFAMA-EFSA-NSA priorities (16 Jan 2023). Available at https://www.efama.org/sites/default/files/files/230117_MiFIR%20joint%20letter_BVI-EFAMA-EFSA-NSA%20-%20Final.pdf
27. Harman, W.R.: The evolution of the national market system - an overview. Bus. Lawyer. **33**, 2275 (1977–1978)
28. Heistruvers, S.: EFAMA pushes for pre-trade data in European consolidated tape. Financial Times (28 Feb 2023). Available at: https://www.ft.com/content/b5fc2c43-9e00-4896-ba1f-709d6dcf0cdb
29. Helm, T.: Derivatives Consolidated Tape might help with FRTB. IFLR (27 Sep 2022). Available at: https://www.iflr.com/article/2aoi7jj82rqgd7yclzfuo/derivatives-consolidated-tape-might-help-with-frtb
30. HM Treasury: Wholesale markets review: consultation response (1 March 2022). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1057897/Wholesale_Markets_Review_Consultation_Response.pdf
31. International Swaps and Derivatives Association (ISDA): Demystifying derivatives trading in the EU (June 2022). Available at: https://www.isda.org/a/zAWgE/Demystifying-Derivatives-Trading-in-the-EU.pdf
32. ISDA on derivatives CT. https://www.isda.org/a/n0PgE/ISDA-Commentary-on-EC-MIFIR-Proposal-Consolidated-Tape-for-Derivatives.pdf
33. Jeffs, L.: Euronext Details Key Concerns with European Consolidated Tape. Euromoney Institutional Investor PLC, Global Investor, London (2022). Available at: https://www.globalinvestorgroup.com/articles/3699566/euronext-details-key-concerns-with-european-consolidated-tape
34. Jones, C.M.: Understanding the market for U.S. equity market data (31 Aug 2018). Available at: https://www.sec.gov/comments/4-729/4729-4545881-176154.pdf
35. Jones, C.M.: Understanding the market for U.S. equity market data – summary of key findings (2018). Available at: https://www.nyse.com/article/understanding-the-market-for-us-equity-market-data?utm_source=ICEhomepage&utm_medium=banner
36. Jones, H., Howcroft, E.: Amsterdam retains share-trading supremacy over London a year after Brexit. Reuters (6 Jan 2022). Available at: https://www.reuters.com/markets/europe/amsterdam-retains-share-trading-supremacy-over-london-year-after-brexit-2022-01-06/
37. Jones, H.: Trading slips away from London ahead of Brexit. Reuters (8 Mar 2019). Available at: https://www.reuters.com/article/uk-britain-eu-trading-analysis-idUKKCN1QP1BY
38. Jones, H.: London Stock Exchange opens Brexit trading hub in Amsterdam. Reuters (30 Nov 2020). Available at: https://www.reuters.com/article/us-lse-eu-stocks-idUSKBN28A1UY
39. Khasawneh, R.: Cboe, Trade Bodies Back European Equity Consolidated Tape. Euromoney Institutional Investor PLC, Global Investor, London (2022). Available at: https://www.globalinvestorgroup.com/articles/3698691/cboe-trade-bodies-back-european-equity-consolidated-tape
40. Lex: FCA/wholesale data: stop the bellyaching and bring in a single consolidated tape. Financial Times (11 Jan 2022). Available at: https://www.ft.com/content/cbee38e4-a7ab-4ead-b6fc-c930f3b4e2cc

41. Moloney, N.: The Age of ESMA, Governing EU Financial Markets. Hart Publishing, Oxford (2018)
42. Oxera: A Consolidated Tape in the EU? How fixed income and equity trading markets perform (June 2022). Available at: https://www.oxera.com/wp-content/uploads/2022/06/A-consolidated-tape-in-the-EU-How-fixed-income-and-equity-trading-markets-perform-FINAL.pdf
43. Oxera: The landscape for European equity trading and liquidity (May 2021). Available at: https://www.oxera.com/wp-content/uploads/2021/06/European-equity-liquidity-landscape-Q1-2021-Final-26-05-2021.pdf
44. Petram, L.: The World's First Stock Exchange, New York Chichester. Columbia University Press, West Sussex (2014). https://doi.org/10.7312/petr16378
45. Quaglia, L., Howarth, D., Liebe, M.: The political economy of European capital markets union. J. Common Mark. Stud. **54** (2016)
46. van Rijsbergen, M.P.M.: Legitimacy and Effectiveness of ESMA's Soft Law. Elgar Studies in Law and Regulation. Edward Elgar, Cheltenham Glos (2021)
47. Rijsbergen, M.P.M., Rogge, E.: Changes to the European financial supervisory agencies' soft law powers: legitimacy problems solved or new puzzles created? Eur. J. Leg. Stud. **14**, 219–254 (2022)
48. Rogge, E.: Transnational financial rulemaking: an application of comparative law & global legal pluralism. Rev. Bank. Financ. Law **39**, 499–547 (2019)
49. Stafford, P.: Amsterdam gains another post-Brexit trading venue with Tradeweb. Financial Times (3 Aug 2017). Available at: https://www.ft.com/content/07cf5c7c-7817-11e7-a3e8-60495fe6ca71
50. Stafford, P.: Brussels criticised over plan for capital markets databases. Financial Times (29 Nov 2021). Available at: https://www.ft.com/content/1158d854-6765-41fd-9a85-c6ed7f599c0f
51. Stafford, P.: Cboe readies Amsterdam hub despite Brexit uncertainty. Financial Times (3 Sep 2019). Available at: https://www.ft.com/content/cb3fdece-cd9d-11e9-b018-ca4456540ea6
52. Stafford, P.: EU aims to unify capital markets with live trading databases. Financial Times (23 May 2022). Available at: https://www.ft.com/content/0d975632-34c0-4f80-a6da-846a441bab6c
53. Stafford, P.: MarketAxess chooses Amsterdam as EU base after Brexit. Financial Times (23 Jul 2017). Available at: https://www.ft.com/content/07d42d04-6e37-11e7-bfeb-33fe0c5b7eaa
54. Stafford, P.: UK financial watchdog to review cost of market data. Financial Times (11 Jan 2022). Available at: https://www.ft.com/content/8489f630-a22f-40ad-b3e3-0400abd48e93
55. Véron, N., Wolff, G.B.: Capital markets union: a vision for the long term. J. Financ. Regul. **2**(1), 130–153 (2016). https://doi.org/10.1093/jfr/fjw006
56. Wójcik, D.: Geography of stock markets. Geogr. Compass **3/4**, 1499–1514 (2009). https://doi.org/10.1111/j.1749-8198.2009.00255.x