

Findings Report

Trade Data Review

March 2023

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Chapter 1

Executive Summary

Background and context

- 1.1** Trade data is produced by trading venues and investment firms. It is a record of the activity that occurs on a trading venue, or when firms trade between each other away from a venue. It is divided into pre-trade data and post-trade data. Pre-trade data contains public expressions of interest to buy or sell assets or contracts. Post-trade data is the record of completed transactions. The information contained in trade data underpins much of the activity in wholesale markets and contains the outcomes of investments in UK traded assets. It is sold by trading venues and data reporting services providers.
- 1.2** Trade data is essential for many financial firms. Pre-trade data is required to trade on certain larger public venues. Post-trade data is an important record of completed transactions necessary for commercial and regulatory purposes, such as research or trade reporting requirements. It also contains information on the valuations market participants place on traded assets, which investors and investment managers take into account when making decisions about which assets to buy, sell or hold. The information contained in trade data is important for a wide range of wholesale financial market activities beyond trading. These include developing investment strategies, assessing credit risks and calculating benchmarks and indices.
- 1.3** In 2021, UK trading venues earned revenues in excess of £200 million from the sale of trade data. This is up to 28% of the total revenue earned by trading venues on average, during 2017-2022, although we see variation by asset class. There are large differences between firms. Five firms in our sample earned close to 100% of total trade data revenue, while some firms earned no revenue from the sale of trade data because they made it available for free or there was little demand for the data they produced.
- 1.4** Trade data is an important part of the wider wholesale data landscape that includes different types of financial data such as credit rating information, benchmarks and indices, and distribution channels such as market data vendors. Market data vendors consolidate trade data from different venues and provide additional services such as desktop platforms which simplify access to trade data for many users. Indices, which are commonly viewed by retail end-investors, provide a consolidated view of the performance of financial instruments, and are used as benchmarks for performance measurement and in financial contracts, providing retail investors and savers with investment solutions such as index-tracking funds.
- 1.5** A wide variety of firms use trade data. We looked at firms serving retail end-consumers, such as asset managers, as well as firms who play important roles in the wider wholesale financial services landscape, such as banks and brokers. Users of trade data also include firms who provide ways to access trade data or produce products which require trade data as an input, such as market data vendors and benchmark administrators.

Throughout this review we will refer to those who purchase trade data as ‘users’ of trade data. Some firms who make use of trade data are some of the largest financial services firms in the world. Many users of trade data are smaller.

- 1.6** This review was launched to look further at concerns highlighted in our call for inputs on accessing and using wholesale data. We published the feedback statement for the call for input in January 2022. This includes concerns that a low level of competition is leading to a level and structure of data charges that increase costs, affects investment decisions and limits the efficiency of trading. To inform this review, we analysed information and data provided by a sample of suppliers and users of trade data. Our analysis informs the findings set out in this review.
- 1.7** This review is a key part of delivering our strategic priority to strengthen the UK’s position in global wholesale markets. A well-functioning wholesale market where participants are able to access good quality trade data at fair and reasonable prices would make the UK, on the whole, more competitive in the global market. A well-functioning market for trade data may also facilitate competition by encouraging the entry and participation of firms in financial markets.

Our findings

- 1.8** Our findings are based on data collected from trading venues and approved publication arrangements (APAs) as well as users of trade data, including asset managers and investment banks. These findings are based on information and analysis gathered through this review and our call for input.
- 1.9** In some respects, we found the market is working well. In particular, trade data users are generally able to access the data they need and trade data plays an important role in investment activity in the UK.
- 1.10** However, we also found areas where competition is not working as well as it could. Our concerns focus on understanding the drivers which may be leading to competition not working well, the implications of those concerns for the price and quality of trade data, and the potential impacts on UK investors and savers.

a. Pricing of trade data

We found that:

- Some UK trading venues have significant share of trading by transaction volume and value, and act as a central marketplace. Concentration of trading is a feature of trading markets worldwide. It is particularly true of equities and derivatives markets. Trading venues match buyers and sellers of assets and derivatives by facilitating prices that buyers and sellers are willing to trade at. This process, known as price formation, is most informative when there are many buyers and sellers with appropriate transparency rules. The data generated by larger venues has high value to market participants. As such, these venues provide data that is ‘must

have' for many users of trade data, such as brokers and investment banks. There are few substitutes for the breadth and coverage of this data.

- We found that while many users derive substantial value from the data generated by some venues, often they have limited choice but to pay the prices charged as choice and switching in the market is low (see below).
- The overall costs of trade data may be passed through to UK retail investors and savers through the greater cost base of all the users of trade data involved in managing UK retail savings and investments.
- We see some evidence of rising trade data prices impacting users and leading to instances where they choose not to purchase data due to its cost, potentially leading to adverse effects on trade data users' ability to make investment decisions or innovate. Reduced use of data could ultimately lead to poorer outcomes for retail investors and savers whose investments and savings depend on the efficient and effective use of wholesale data.

This results from:

- Venues with significant share of trading in equities and certain classes of derivatives having a high market share as trading platforms and their data is considered essential by many users. This gives them greater scope to increase prices for trade data.
- MiFIR-based requirements on pricing trade data on a reasonable commercial basis are designed to constrain pricing but give trading venues wide pricing latitude and don't appear to be a significant constraint on pricing.

b. Limited choice and switching

We found:

- Many users have little choice but to pay the prices set by certain venues for data because of the concentration of trade data markets. This lack of choice means they have little scope to switch or negotiate and drive competition. We found little evidence of users in our sample switching data providers in the past five years.
- Users are in a weak position to drive competition through exercising choice and switching. As such, prices are unlikely to be constrained and competition in its current form is unlikely to drive optimal outcomes.
- Even where there are different sources of data, some trade data users choose to purchase all data to ensure they have the best information available on market conditions. This means they cannot forgo data offered by one trading venue, even if it is more expensive than alternatives, in a way that would drive price competition.

This results from:

- The needs of users to access data with a high level of market coverage which cannot be replicated by smaller challenger trading venues and in practice, is only obtainable from the larger trading venues. This is driven mostly by commercial factors, such as to be able to trade on the most liquid venue, and have the best information on the current values of traded assets. In many cases, forgoing this information would limit the ability of users to compete effectively in their own markets, as brokers or investment banks.

In some cases, users told us regulatory requirements additionally mean the larger venue is a necessary source of information by which to compare execution strategies and to effectively manage risk.

- Some assets and contracts are traded exclusively on certain venues so there are no alternative data sources.

c. Complex pricing and licensing

The way in which trading venues sell data can be complex, reflecting in part the diversity of ways data is used. However, this creates frictions for users of trade data and makes it harder to assess competing offerings by different trading venues and predicting the overall cost of trade data for their specific needs.

We found:

- Complicated licensing design and contract terms that users told us had implications that were not clear from the outset. This makes it difficult for users to monitor trade data costs and make effective choices between different trade data offerings. This creates frictions for users when assessing their trade data needs, comparing prices across trading venues and predicting their overall expenditure.
- Complexity drives additional costs for users, such as operating a compliance team, that raises the cost base of wholesale financial markets. These costs may be passed on to UK retail investors and savers through the greater cost base of all the users of trade data involved in managing UK retail savings.

This results from:

- Trading venues charging different prices to different customer groups by licensing data according to specific and narrow use cases for data.
- Trading venues' lack of incentives to simplify these arrangements given the profitability of charging different prices to different users, by charging for how data is used, compared to uniform pricing.

d. Delayed data challenges

We found:

- Freely distributed delayed data is not always made available in such a way that users can access it directly easily.
- In addition, the [ESMA Q&A on MiFID II and MiFIR transparency topics](#) which addresses questions regarding the implementation of MiFID II and MiFIR transparency rules, agreed when the UK was still a member of the EU, states that venues may charge for delayed data in certain circumstances, such as when it is redistributed for a fee by intermediary customers of trading venues (such as market data vendors). This means many users often end up paying for delayed data, despite the intention to create access to free delayed data.
- Users routinely pay for delayed data where they redistribute it raising the cost of overall data requirements.

- Free delayed data does not act as an effective competitive constraint on the pricing of real time data.

This results from:

- Trading venues monetising delayed data by charging for it in certain circumstances, and monetising it in other business lines. Some venues also offer historical data packages, or value-added services such as analytics alongside delayed data.
- Trading venues having little incentive to improve the quality of the free delayed data beyond what regulation specifies. This is partly because improving accessibility incurs some small costs which cannot be recouped. It is also because improving the accessibility of freely available data might lead to users switching away from the delayed data products they monetise.

1.11 We found that some trading venues in certain asset classes are highly profitable. Operating margins of these venues were very high, and are high when compared against large UK-listed firms. According to publicly available information, overseas venues are similarly profitable.

1.12 Trade data is an important contributor of revenue for venues. Venues produce data as part of their core business of offering trading services (as well as being part of their regulatory requirements). In some cases, costs are already covered by revenues from trade execution fees. The incremental costs of making trade data available to users of trade data appear low relative to the revenues earned, which suggests that trade data is a highly profitable business line and contributes considerably to the high margins earned by some firms.

1.13 We also looked at some firms running trading venues who do not significantly monetise trade data. This includes inter-dealer brokers, and firms for whom earning revenue through trade data sales is not an important part of their business model in terms of revenues earned. We found:

- Some venues such as smaller venues, fixed income platforms and inter-dealer brokers operating trading venues do not have explicit data fees. These firms earn revenue primarily from their core trade execution platform services and make data available for free.
- In fixed income markets, users are more likely to access and pay for trade data through consolidated data feeds such as those offered by third-party market data vendors.

Implications of our work and next steps

1.14 In a trade data market that works well, we would envisage the following outcomes:

- Trade data is accessible, complete, and available in the right timeframes to users who need it to make informed investment decisions, innovate and expand, and meet their regulatory requirements.

- Trade data licensing is simple and clear, and users have reasonable certainty on their overall expenditure over a given period. Licensing and associated practices do not constrain innovation.
- Trading venues continue to make their data available on a fair basis to be accessed either directly or through vendors.
- Rules incentivise competition and innovation and drive good outcomes. If they do not, they are adapted as necessary.

1.15 Based on the findings of this review, alongside those from our call for input and our wider wholesale market priorities, our immediate focus will be on two pieces of further work relating to wholesale data:

- Working with Government on developing consolidated tapes. A consolidated tape collects wholesale data across the market and disseminates them in a single feed. We plan to consult on a consolidated tape by the summer of 2023. Depending on the design of any consolidated tape and how it is provided, it could improve the overall cost, quality and accessibility of wholesale data. The findings of this review will help inform the design of consolidated tapes.
- Launching the Wholesale Data Market Study alongside publication of this report. This will allow us to look in more depth at the impact market data vendors have on wholesale data markets and outcomes for data users and end investors. This work will provide useful learnings about the impact of market data vendors in the trade data market.

1.16 We are prioritising work in these two areas and we will consider the extent to which the issues we have identified in this review are addressed by the outcome of this further work. Under The Financial Services and Markets Bill, the Government aims to tailor financial services regulation to UK markets. The Bill implements the outcomes of the Future Regulatory Framework (FRF) Review, including the transfer of firm-facing legislative powers for financial services previously contained in EU law to the FCA. As such it will provide us with the ability to make changes to relevant legislation in the future. Any additional steps we consider taking will be done within the context of wider priorities, forthcoming legislative changes, trends and developments in the trade data market and the global context for trade data markets. We would also engage with stakeholders about any proposed further actions.

Chapter 2

Key findings

Overview and approach

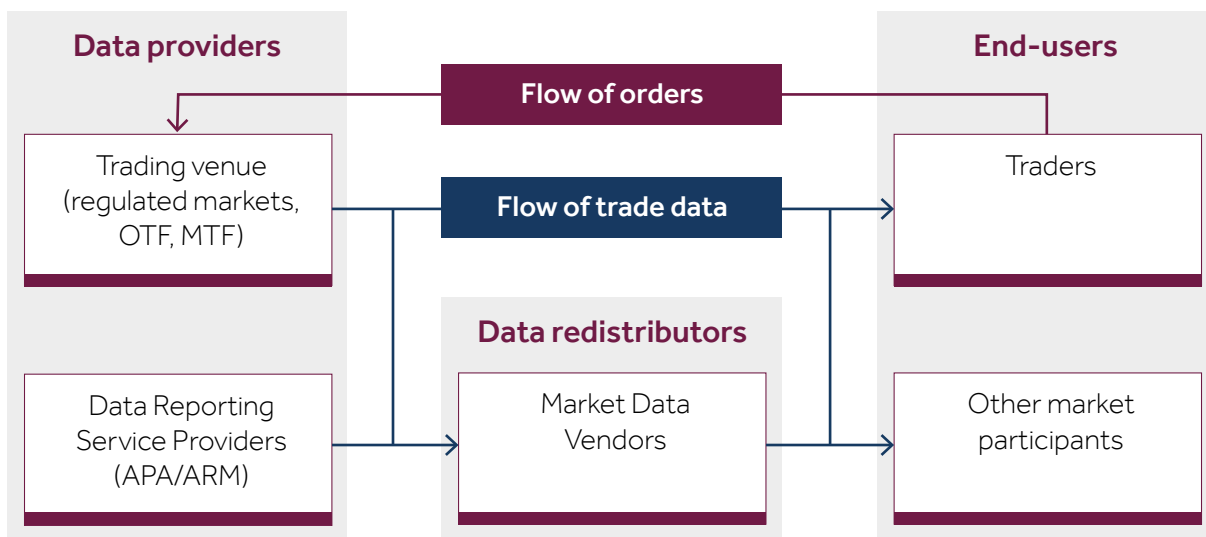
- 2.1** This report summarises the findings of our review into the market for trade data in the UK. Our analysis provides a deeper focus on the issues raised in our previous Feedback Statement on accessing and using wholesale data.
- 2.2** This review aimed to:
- Provide an evidence base through which to understand how competition is currently working and the outcomes users of trade data receive.
 - Highlight areas where we believe competition is not delivering good outcomes, and propose further work to address these issues.
 - Contribute to a wider FCA strategy in wholesale data markets, in the context of the Future Regulatory Framework initiative.
 - Contribute to the wider international debate on the role of competition in the provision of trade data.
- 2.3** Our findings are based on analysis of data we collected from suppliers and users of trade data. We collected data from 33 trading venues and data reporting services providers (DRSPs) and 168 users of trade data. We collected data from a range of firms which operate regulated markets (RMs), multi-lateral trading facilities (MTFs), and organised trading facilities (OTFs), in the UK. We also collected data from DRSPs which operate approved publication arrangements (APAs) and Approved Reporting Mechanisms (ARMs). Our sample of users of trade data included asset managers, brokers, investment banks, market data vendors, benchmark and indices providers, pension funds and retail trading platforms.
- 2.4** The data we collected included:
- Qualitative information on the business models of trading venues, including the services they offer, how they set prices and the way in which they compete to win business.
 - Financial data from venues and data reporting service providers to understand how they earn their revenue, their costs incurred, and drivers of profitability over the period 2017-2022. This is an important part of our assessment of the incentives of venues to supply trade data.
 - Detailed information on the revenue earned by individual trading venues in our sample from the subscriptions and licences they sell.
 - Survey responses from users of trade data, including about their trade data needs, the data they purchase, and factors related to competition such as their ability to negotiate with providers or the level of choice they perceive in the market.

Trade data market overview

- 2.5** Trade data is produced by trading venues, investment firms and data reporting service providers. It is a record of the activity that occurs on a venue or trading platform, or when firms trade between each other away from a venue. It is divided into pre-trade data and post-trade data. Pre-trade data contains public expressions of interest to buy or sell financial instruments. Post-trade data is the record of completed transactions. The information contained in trade data underpins much of the activity in wholesale markets and contains the outcomes of investments in UK traded assets. It is an essential input into investment decisions that will impact on outcomes of investors and savers in the UK.
- 2.6** Trade data is essential for many financial firms. Pre-trade data is required to trade on certain trading venues, so that participants can see the activity on the venue. Post-trade data is an important record of completed transactions necessary for a variety of commercial and regulatory purposes. It also informs the wider market of the valuations of commonly held investments such as equities and bonds. The information contained in trade data is also important for a wide range of wholesale financial market activities beyond trading. These include developing investment strategies, assessing credit risks and calculating benchmarks and indices. Trade data is an important driver of innovation and research, particularly as more sophisticated analytical techniques are developed and used.

Figure 1 provides a simplified picture of the relationship between trading and trade data.

Figure 1: Simplified diagram of the relationship between trading and trade data, and market participants



Source: FCA Analysis

- 2.7** Revenue earned by different trading venues varies with the business models of the firm and the asset class that is traded on the venue. This affects the importance of trade data to the overall revenue earned by the trading venue. Trade data, in general, makes a more significant revenue contribution to revenue earned by equities and derivatives venues than fixed income venues.

- 2.8** ARMs and APAs are collectively known as DRSPs. They enable financial firms to meet their post-trade MiFID II transaction and trade reporting requirements when conducting over-the-counter (OTC) trading (meaning trades that occur away from a trading venue) and may also provide similar services for MTFs and OTFs. Only APAs earn revenue from trade data, which makes up only a small fraction of the total revenue in our sample (<1%). ARMs do not earn revenue from selling trade data, rather they earn their revenue by assisting firms in meeting their reporting requirements to the appropriate regulators or relevant authorities.
- 2.9** Under MiFID II trading venues must make trade data available to those who want to access it. Venues are required to:
- Make real-time, continuous feed pre- and post- trade data available on a non-discriminatory reasonable commercial basis.
 - Make trade data available free of charge after 15 minutes.
- 2.10** MiFID II also includes provisions designed to limit providers scope to price discriminate based on non-objective or non-public criteria.
- 2.11** Trade data providers sell data through subscriptions and licences. Subscriptions generally entitle an individual within the firm to access trade data by viewing it on a screen. Subscriptions are paid by the user of trade data on a per-user basis. They make up most of the revenue in our sample. Licences make up the remaining trade data revenue in our sample. Trade data providers grant limited rights to customers for different specified use cases of trade data in return for licence fees. Licences reserve all other rights to suppliers. Licences to use data are broadly split into four categories of usage (although venues may have more, or fewer, categories):
- display licences allowing data to be viewed on a screen (commonly sold as subscriptions).
 - non-display licences covering all other internal purposes for using trade data.
 - redistribution licences for when trade data is directly distributed onwards by the purchaser.
 - derived data licences where trade data is used as an input to a calculation, such as an index.
- 2.12** We found that the prices of these different licence categories vary. This can lead to users of trade data paying different amounts for the same data, depending on what they need the data for.
- 2.13** In addition to having licences that vary according to the use of the data, data can also differ depending on the contents and delivery of the data. This can also have implications for prices paid. These characteristics include the depth of trade data (meaning the level of detail the data contains), whether it is delivered in a feed (meaning it continuously updates) and the latency (or speed) with which it is delivered. In addition to the data licence cost there may also be other charges associated with some types of data feed. For example, lowest latency access to trade data (meaning the fastest data) may require a consumer to install specific technology with the venue, and pay any associated fees. Users rated latency and order book depth as the most important characteristics of data to their respective business activities. Users also rated coverage and post-trade reports as being important parameters.

2.14 Trade data is often accessed via market data vendors. Most users in our sample used market data vendors in some form as part of a wider market data package through which they accessed trade data sold by trading venues and APAs. Market data vendors often bundle multiple services, such as:

- access to a consolidated feed of trade data from different venues and APAs.
- desktop services through which to view and work with trade data.
- access to other sources of financial information such as credit rating agency data or financial news.

The wider landscape in trade data

2.15 Trade data is used by firms that operate in markets across the world. Our work builds on work by other regulators. How other jurisdictions approach these issues informs our work to improve the trade data market.

2.16 In December 2019 the European Securities and Markets Authority (ESMA) published its first report, contributing to an assessment by the EC required by MiFID II and MiFIR, covering several provisions in MiFID II/MiFIR. It considered obligations to make pre-trade and post-trade data available separately, on a reasonable commercial and non-discriminatory basis, and to make data available free of charge 15 minutes after publication. It also considered the requirements set out for the functioning of a consolidated tape for equity instruments.

2.17 ESMA found in December 2019 differing views among users of trade data and trading venues on the way in which market data prices had changed. Trading venues provided feedback that overall prices of market data had been stable since the application of MiFID II/MiFIR. This reflected a combination of price rises on some products, combined with disaggregation and price reductions for other services allowing users to purchase only subsets of data. Trading venues had increased prices for some use cases such as non-display usage in trading applications, or for data used by SIs. By contrast, ESMA found that users were of the view that market data prices had increased significantly since the application of MiFID II and MiFIR. ESMA concluded in 2019 that MiFID II had not delivered on its objective to reduce the price of market data, while acknowledging that market data plays an increasingly important role in financial markets and that market participants are consuming an increased amount and variety of data.

2.18 In response to the findings published in December 2019, ESMA published a Consultation Paper (with the consultation running 6 November 2020 – 11 January 2021) with proposed Guidelines to address the concerns raised. In June 2021, ESMA published their Final Report on Guidelines on the MiFID II/MiFIR obligations on market data, a report focusing on 19 guidelines covering topics such as clear access to market data, the requirement to provide data in a non-discriminatory manner, and transparency obligations, among other policies.

2.19 Trade data is a concern for many other regulators, and different approaches have arisen around the world. In this regard, we have identified two modes of regulating access to trade data:

- Some jurisdictions require fair access to trade data. Providers are free to determine the price level of trade data so long as it aligns with the general principle of fair access. For example, one East Asian regulator considers fair, equitable and timely access to market data in its regular monitoring process. In Australia, the market integrity rules require market operators to make available pre-trade and post-trade information on reasonable commercial terms and on a non-discriminatory basis. The national European financial regulators adopt and enforce the transparency requirements as set out in the regulatory framework of EU MiFID and MiFIR and the associated ESMA guidelines, as mentioned before.
- Several regulators have the power to review and approve changes to trade data prices proposed by trading venues. The examples are Hong Kong, Ontario, Canada and the U.S. In deciding whether to accept the fee proposal of the Hong Kong Stock Exchange, the Securities and Futures Commission considers the level of local competition for the product and fee level of the same or comparable product imposed by other foreign exchanges. The Ontario Securities Commission evaluates proposed fee changes based on the fair access requirement that marketplaces must not unreasonably prohibit, condition, or limit access to their services, permit unreasonable discrimination or impose burden on competition which is not reasonably necessary and appropriate. Trading venues must consider the fees charged by other trading venues in Canada for similar services and consider international comparisons when a new fee is proposed. In the U.S., national securities exchanges and the Financial Industry Regulatory Authority make fee filings to the Securities and Exchanges Commission for approval by demonstrating that the proposed fees satisfy the requirements of the Securities Exchange Act. The proposed fees should be reasonable, equitably allocated, not unfairly discriminatory and not put an undue burden on competition.

2.20 The International Organization of Securities Commissions (IOSCO) published a Consultation Report titled Market Data in the Secondary Equity Market. This paper described several issues relating to market data in equity markets and asked for views on both the issues and possible solutions. These responses identified three areas that regulators should consider in their reviews. First, it is relevant to distinguish the different needs for data in the markets, especially the role that pre-trade data plays in the transparency of trading. Second, market data is not interchangeable in all cases, and where appropriate, helping to ensure fair access across different execution venues is an important consideration. Third, consolidation of data may improve access to market data and may, in some circumstances, be useful in helping to reduce the costs of market data. Finally, some respondents to the Consultation Report made comments related to increasing market data costs due to complex licensing terms.

2.21 Two consultancies have published reports on market data (Copenhagen Economics and Oxera). In 2018, [Copenhagen Economics published a document commissioned by the Danish and Swedish Security Dealers Associations on pricing of market data](#). They found that some aspects of the implementation of MiFID II/MiFIR might have an unintended effect on data costs and harm users and enterprises. Later in 2019, [Oxera released an economic analysis on the design of equity trading markets commissioned for the Federation of European Securities Exchanges](#). Their approach is to analyse the effects of pricing in the framework of price formation, arguing that the current recovery costs (hence, pricing) structure is not detrimental on market outcomes.

Our findings

2.22 The remainder of this report provides greater detail on our findings.

Scope for competition in trade data markets is limited leading to high prices

2.23 Some UK trading venues have significant shares of trading by transaction volume and value, and act as a central marketplace. The larger venues offer the widest breadth of traded assets and attract a larger pool of traders, enabling them to quickly match buyers and sellers. As such the data they generate provides the most important source of information for traders and investors. Users of trade data told us that there are often no substitutes to the data they purchased, and data generated on alternative or challenger trading venues may not be considered a close substitute. Being able to access this information is therefore essential for market participants who need this data to make effective investment decisions.

2.24 Larger trading venues produce valuable data. This is because it incorporates a wide range of information about the valuations of traded assets, because of the large number of traders who use these venues. Trading venues match buyers and sellers of assets and derivatives by finding prices that buyers and sellers are willing to trade at. This process, known as price formation, is most informative when there are many buyers and sellers. As such the data generated by larger venues has high value to market participants.

2.25 Outcomes in trade data markets are highly asset class dependent. In asset classes where trading is concentrated in central marketplaces, there is a greater scope for venues to become established as 'must have' providers of trade data. In more fragmented trading markets consolidators of data such as market data vendors play a more important role. We find:

- Equities markets are concentrated. A degree of limited competition exists between larger venues, and a range of smaller alternative venues, which offer variety to traders. In practice users often need to purchase data from multiple venues to get a good understanding of market conditions and liquidity, but data produced by central marketplaces where trading is concentrated is often 'must have'.
- Markets in certain classes of derivatives are also concentrated and some venues become established platforms for certain popular exchange traded derivatives.

- Fixed income markets are more fragmented and a larger percentage of trades occur between parties away from venues. No one platform has a substantially larger market share across all fixed income venue trading, and trade data is not produced from a single platform. Instead fixed income venues often distribute data via market data vendors and consolidators.

2.26 In the more concentrated markets, it is difficult for rivals to an incumbent venue to compete. Often, when looking at competition between venues within the UK, one single venue stands out as larger in each asset class (or sub-class) and acts as a central marketplace. For UK-based trading, the dynamics of trading markets tend to concentrate trading in ways that benefit market participants. Traders have little incentive to switch away from a venue with significant levels of trading or liquidity. The historic position of some venues as the only significant secondary market in their asset class also plays a role and sometimes an asset or contract may trade exclusively on a single larger platform.

2.27 The result is that a single larger venue could be considered by users as the main source of information in the UK for a particular asset class. Additionally, as this venue produces data based on significant levels of trading the data is often more valuable and informative to market participants than the data produced by smaller venues. Where rival venues compete to offer trading services, the data they produce is complementary, rather than a direct substitute, to the data produced by the 'main' trading venue. This has implications for the level of choice over trade data providers users have.

[Our firm] has no choice regarding licencing with regards to [a particular venue's] data, due to the essential nature of this information to our business model. (Trade data user)

2.28 Information provided by users of trade data supports these findings. Demand for data generated on larger venues is high. We found some of the drivers of demand were:

- Market participants need trade data to trade on most platforms. Primarily this is pre-trade data, so that market participants know the interests of buyers and sellers currently on the platform and can undertake trades accordingly. If a large number of participants want to trade on a particular platform it follows that demand for data from that platform will be high.
- Users prefer trade data when the prices it contains better reflect the true market values of the assets traded. Larger venues have a wide base of buyers and sellers, and employ sophisticated trading systems to combine the prices buyers and sellers have for different assets to produce a price for an asset. These prices, particularly when they are combined to produce an index provide important information to financial markets.
- Regulatory provisions also drive demand. For example, rival trading venues such as MTFs and OTFs, or trading services which allow trading to occur off-venue (known as OTC trading) may have to reference the data generated on the venue to offer their own services. In many cases though regulation is not the determining factor – demand would still exist for the data provided by larger trading venues given the benefits of referencing that data.

We regularly examine what data we are receiving and if we need it in an attempt to minimise costs, but it's simply that we need to have access to the data we are consuming so we have to pay the price quoted. (Trade data user)

- 2.29** Users told us where alternative providers of data existed, they were imperfect substitutes for the 'main' source of data. Relying solely on alternative sources of data (such as from a smaller venue than the incumbent) was sometimes considered unviable by users, or would otherwise be a detriment to the quality of services users could offer. In practice, alternative sources of data are likely to be complements to the data produced by the main venue. Only 31% of users responding to our survey told us there is an alternative data source that could be considered a feasible alternative to their current source. 19% told us that it would be possible but difficult to switch. Switching is broadly uncommon in trade data markets – fewer than 5% of our sample told us explicitly they had switched data providers in the past five years.
- 2.30** Other features of the market made it difficult for customers to drive prices down through the process of competition. For example, users told us fee schedules were often difficult to compare so that where users of trade data had the opportunity to make choices between different data sources, it was challenging to make them effectively. Discounting was not common and most users told us they had little leverage with which to negotiate on price, except in specific cases (e.g. as a new customer, and some discounts for larger buyers).
- 2.31** The overall effect is played out in how trade data revenue in our sample is concentrated among larger venues. Five trading venues earned nearly all of the trade data revenue in our sample. The remainder of venues in our sample reported no revenue from trade data. We see limited evidence of change in this level of concentration over the period 2017-2022, although some smaller venues and DRSPs are expanding trade data revenue.

Venues earn high margins on trade data

- 2.32** The profitability of trade data is one indicator of the level of competitive pressure firms face. To examine profitability, we looked at firms' financial performance. We did this looking at the overall financial performance of trading venues and DSRPs, and specifically the financial performance of firms' trade data offering.
- 2.33** Total revenue earned from trade data was on average £222m per year over 2017 to 2021, growing from £203m to £232m over the period. There are large differences between firms and data revenues are asset class dependent. Among trading venues, some business models earned trade data revenue while some do not. APAs earn very little trade data revenue in comparison to trading venues in both an absolute and in proportion to their other sources of revenue.
- 2.34** A significant proportion comes from revenue earned from trading activities. Trading activities revenue relates to both primary markets, such as admission and annual fees earned from firms that have securities admitted to trading in the regulated market, and

secondary market membership fees, and charges for trade execution and matching of trades. Other sources of revenue include connectivity and hosting fees, benchmarks, consultancy and analytics – these make up a small fraction of the total revenue.

- 2.35** Trade data is generated through the trading activity. Some firms therefore told us that trade data and trade execution are joint products. This means it is not possible to incur costs to generate one without the other. This has implications for the way in which firms set prices for data under UK MiFID II. UK MiFID II requires venues to price trade data made available under the transparency regime according to a reasonable commercial basis, and venues are required to produce a public cost allocation methodology to demonstrate this requirement has been met. As such the treatment of costs in the sale of trade data is an important aspect of our analysis and how we interpret the costs incurred by venues in making data available. It also provides a framework with which we consider the incremental costs of making data available by a venue already operating as a trading platform. How a firm treats its costs also has implications for the latitude with which venues can price.
- 2.36** To understand the costs involved in producing and selling trade data, we asked firms to provide breakdowns of their costs. We wanted to see what firms considered as direct costs, including direct costs incurred solely for trade data and solely for trade execution, indirect costs which are overheads expenses or central common costs like rent, utilities, administrative costs, which are allocated to trade data and other business activities, and joint costs which are costs incurred to simultaneously produce trade execution and trade data revenue. Some trading venues told us costs incurred to run a trading venue are joint between the production of trade execution and trade data services.
- 2.37** We found that there is no consistent way in which firms view how costs are split between direct, indirect and joint. Not all firms have provided us with direct costs related to producing and distributing trade data. We observed that direct trade data costs vary between firms and ranged from an average of 0% to 12% of the venues' overall total costs across the years across different assets. Some firms which earn trade data revenue considered a portion of their trade data costs to be direct. Other firms considered costs related to trade data as joint and/or indirect. For these firms joint cost ranged from 23% to 67% of these venues' entire cost structure with the rest of the costs relating to trade data being indirect costs.
- 2.38** The drivers of costs varied among asset class, but staff cost is the biggest contributor to both direct and indirect cost across all asset classes. It made up an average of 42% of total direct costs and an average of 27% of total indirect costs across all firms by asset class.
- 2.39** In addition, we found that inbound trade data (meaning trade data purchased by trading venues, often used to operate their own venue) cost is a considerable cost for equities venues, although diminishing over time. Inbound data costs were limited for fixed income and derivative firms. This was because the fixed income firms in our sample did not use inbound trade data, rather they used other forms of data that included instrument reference and market pricing data. The firms in our sample did not recognise these as inbound trade data costs. The derivative firms in our sample either used their own internally generated data or similarly claimed that they used a form of reference data on which to base the pricing of their financial instruments.

- 2.40** Turning to overall operating profits earned by trading venue operators, we see that firms which specialise in equities and derivatives earned on average over the period 2017 to 2021, operating profits of 40% to 50%. In contrast, firms in fixed income have, on average, much lower operating margins. We found that most of the trading venues, except those which are new to the market, make positive accounting profits.
- 2.41** Measuring the profitability of trade data in isolation is complex. Trade data is produced as part of running a trading platform, which trading venues can monetise as part of cost recovery. Some firms argued that due to the nature of trade execution and trade data activities, most of the costs incurred to produce and distribute trade data are joint and cannot be economically allocated to either business activity.
- 2.42** The profitability of trade data considering only incremental costs incurred to make data available is also an important indicator of the competitive pressure firms face. Financial data from some firms shows that the additional costs incurred solely to monetise trade data (for example incremental staff costs) is low relative to the revenue generated and hence the contribution made towards firm's joint costs by trade data can be significant.
- 2.43** To gauge the significance of trade data on sampled firms' overall profitability we conducted a sensitivity analysis by allocating all joint costs to only the trade execution line of business. Venues facing substantial competitive pressure across trade data and trade execution may be induced into setting prices that consider the complementarity between trade execution and trade data. For example, reducing the price of trade execution services might drive demand for the venue's data offering. Or venues may offer data for free or at low cost and earn most revenue from their trade execution offerings.
- 2.44** Our analysis provides some support for this. Some venues do not earn revenue, or earn only a small fraction of their total revenue, from trade data and are profitable. However, we also see evidence that some venues' trade execution business is profitable even after all joint costs are deducted, while also earning substantial revenue on trade data. This suggests competitive pressure is very low – despite the complementarities between trade data and trade execution, it might suggest some venues are not incentivised by competition to reduce prices for either trade data or trade execution to drive demand for the other product.
- 2.45** Where some firms have the ability to raise prices consistently and profitably above the competitive level, it can be indicative of weak competition. It is therefore one component of our overall assessment of competition. While the approach detailed is not free from limitations, we believe in the context of our assessment of competition, it contributes to our overall analysis that some venues have the ability to make high profits in the sale of trade data. As such we wanted to assess whether the level of accounting margins observed in the market support our assessment of competition. We benchmarked operating margins observed from our sample of firms against that of large UK-listed firms and overseas trading venues. In addition, to reflect the investment and capital required to generate such margins, we also compared return on capital employed (ROCE) with firms' weighted cost of capital (WACC).
- 2.46** Our first benchmark compares against large UK-listed firms. Comparing operating profit margins observed from our sample of firms running trading venues with those earned by benchmarked firms over the same time-period allows us to assess how profitable

the firms running trading venues are in comparison to some of the top companies listed in the UK. Operating margins of some firms running trading venues in our sample are on average 40-50%, which are materially higher than the average margin earned by the top firms. Taken on its own, this comparison has limitations as profit margins can vary between industries, because of the features specific to each different market, such as the nature of costs, consumers, technology, and the current level of innovation. However, combined with our overall assessment in this report, it suggests that the level of competition between trading venues is unlikely to be high relative to other UK industries.

- 2.47** Our second benchmark considers overseas venues. To compare operating margins of UK trading venues against firms running overseas trading venues, we analysed publicly available information of firms running major overseas trading venues. This analysis showed that firms running overseas venues are similarly profitable to UK venues. Specifically, while average margins earned by the firms in our sample were higher than those earned by firms running trading venues in Europe, they were in the range of the margins earned by firms running trading venues in the US and other parts of the world. This suggests that there are features specific to competition between trading venues, such as the tendency to concentration, that weaken competition. There are some limitations in this analysis as significant trading venues overseas may be in a similar competitive position which allows them to earn high profits. Another point to note is that we are comparing the overall operating margins of the operators of trading venues in the UK with the conglomerate activity for firms running overseas venues.
- 2.48** Lastly, we acknowledge that accounting profit margins does not tell the full story on profitability. This is because it does not consider factors of production that do not appear on the profit and loss statement, such as investment and the economic cost of capital. To account for investments and capital costs including cost of tangible assets such as the trading platforms and software, and intangible assets such as an existing customer base reflected in brand strength and goodwill from acquisitions, we looked at comparing the Return on Capital Employed (ROCE) vs the Weighted Average Cost of Capital (WACC).
- 2.49** ROCE can help to understand how well a company is generating profits from its capital as it is put to use. It is especially useful when comparing the performance of companies in capital-intensive sectors. WACC represents a firm's cost of capital from all sources; it is the average rate that a company expects to pay to finance its assets. WACC is a common way to determine the hurdle rate against which firms gauge the viability of a given investment decision. However, only a small number of the trading venues we sampled provided us with their WACC, thus limiting our ability to draw strong conclusions from this exercise. Taking the average WACC of these firms and comparing against the average ROCE of each asset class, we found that ROCE was consistently higher than that of the firms' average WACC, indicating the firms are generating profits which are higher than their cost of capital. We recognise that using accounting balance sheet of the firms we sampled to determine capital employed has its limitations as most of these firms are part of a larger international group so a proportion of the assets required to operate a trading venue in the UK may not be recorded at that entity's balance sheet but are held at a group level.

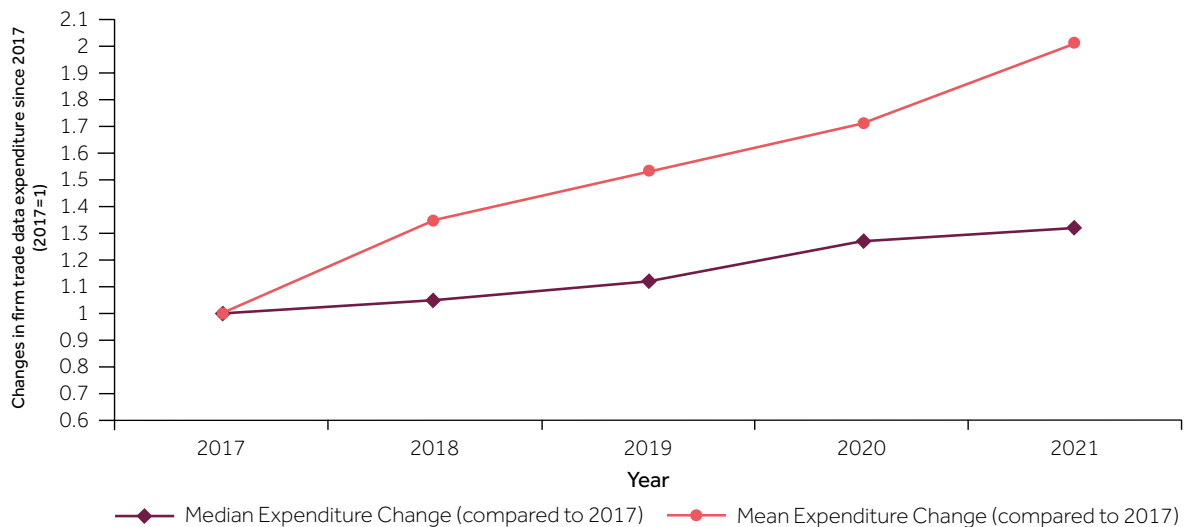
User expenditure is rising driven by new licences and in some cases price increases

2.50 One of the concerns raised in our CFI was consumer spending on trade data was rising over time. Our findings provide further support to these concerns. We found that the revenue venues were earning from trade data rose 2017-2021, and this was reflected in users' reporting of their overall expenditure on trade data. The key drivers of rising consumer spending over time are:

- new licences introduced by trading venues
- existing licences rising in price

2.51 Firstly, we considered evidence on users' reported expenditure on trade data. Our analysis of users of trade data in our sample suggest that rises in expenditure are widespread. 77% of respondents to our survey of users of trade data told us that their expenditure rose over the period 2017–2021. Figure 3 shows the median and mean expenditure change on trade data for users in our sample (who reported trade data spending over the whole period). It shows that expenditure for half of these users was over 30% higher in 2021 than in 2017.

Figure 3: Changes in trade data user expenditure since 2017



2.52 We then considered what factors may be driving rising expenditure. We asked users of trade data to rate the significance of certain factors to their trade data costs over the last 5 years. For the users who provided responses, the most important factors were (a) price increases by trading venues and APAs; (b) changes to the number of licences required (for equities, derivatives and fixed income); and (c) price changes by market data vendors (for equities and derivatives).

2.53 We analysed price increases and changes in the number of licences. Firstly, we considered whether consumer claims around rising prices were reflected in the pricing practices of venues. To do this we analysed the changes in trading venues' licence and subscription prices over the period 2017-2021. We found some data subscription prices rose up to 40% between 2017-2021 across venues, including larger venues. As such it suggests that rising prices were a part of the overall rise in expenditure users told us about.

- 2.54** Some venues provided explanations for price increases where they were made. Price increases often were justified by improvements to the quantity or quality of data available. One venue told us they increased fees because of introducing new datasets and enhancing existing datasets, and the increased fees reflected customer demand for the new datasets and enhancements. Not all venues increased fees substantially over the period. One venue told us they kept their fees flat with only infrequent and modest price increases, despite the increase in the quantity and quality of data they made available.
- 2.55** We then considered the role of new licences in driving rises in expenditure. Users told us having to purchase additional new licences to continue accessing and using trade data was a key driver of rising expenditure. Venues introduced new licences for a variety of reasons. In some cases, it reflected a new product or dataset being made available. Sometimes venues might offer a carve-out or expansion from an existing data agreement, for example offering a smaller or larger set of data where a customer requested this. However, in many cases new licences were not related to changes in the underlying trade data product, but instead changes in the way users were using data. For example, a rise in the use of data in automated processes such as algorithmic trading led to several venues introducing new charges. It was these new licences in particular users felt were a driver of rising expenditure. In these cases, users paying more for data did not necessarily reflect costs incurred by the venue, but instead venues' perception that users derived greater value from existing data.
- 2.56** We found that, each year venues introduced new licences which add to the overall offering. Sometimes these new licences replaced or expanded on existing licences which were removed from sale. Sometimes they were part of a new category of licences, for example, non-display licence categories to distinguish between customers purchasing data to view on a screen and customers purchasing data to use in an automated process. The evidence suggests new licences contributed to rising expenditure as new licences were often more expensive than existing licences. Among the users with the highest trade data expenditure, and the largest increases in trade data expenditure, several cited non-display fees as a key factor.

Non Display pricing is extortionate, it prevents us exploring new business initiatives. (Trade data user)

- 2.57** Rising expenditure is less concerning where users can make effective decisions, for example to switch or negotiate. We considered whether users had opportunities to either negotiate or switch in the face of rising prices. We found users generally had little choice but to pay the increased fees. Only about 14% of respondents suggested they are able to negotiate with UK trading venues and APAs on the price or terms and conditions of trade data licences.
- 2.58** Users have other options for managing expenditure. Instead of switching or negotiating, the main ways users managed expenditure was through careful monitoring of data usage and fees. Many users told us they kept a close management of the licences and subscriptions they held, keeping data access to only those members of staff for whom data access is necessary to perform their functions. This potentially impacts the quality

of internal decision making. 80 users told us they have reviewed their trade data needs. Of these reviews, 8% resulted in an increase in trade data expenditure or number of licences or subscriptions purchased; 22% resulted in a reduction, and the remaining 69% resulted in no change.

Impact of high prices on users of trade data

- 2.59** Rising prices for trade data have several implications for the business models of users. Higher data costs are likely to feed through to higher costs of business in wholesale financial markets in the UK. These effects are cumulative, with rising costs impacting multiple levels of the wholesale finance value chain, such as asset managers, banks, and brokers. This ultimately means higher fees for UK savers and investors, and worse returns.
- 2.60** Most trade data users said they were able to absorb the increased costs of trade data without a material impact on their business. However, we found some instances where trade data costs had more material impacts on users of trade data. 18% told us that trade data costs were a material consideration in their pricing of their own products and services. 17% told us that changes in the cost of trade data negatively impacted their ability to create new products, while a small number told us they had withdrawn products and services due to the increasing cost of trade data.
- 2.61** One of the positive aspects of the market we found was access to data. In the main we found users were able to access the data they needed for their core business needs. A small number of users told us they were unable to purchase the data they required for their specific use case.
- 2.62** Finally, we considered whether users terminated licence agreements. 26% of users told us they had terminated or considered terminating licensing agreements over the past 5 years. Common reasons cited were cost increases of trade data, changes in users' business model or strategy, and changes in trade data needs.

Venues charge some users more depending on their data needs meaning some saw rapid price increases

- 2.63** Trading venues do not price trade data solely based on the cost of providing the data to a given customer, which may include costs incurred to ensure data is complete, high quality and delivered at low latency. Venues also charge customers by the way they use the data. This means sometimes different customers pay different prices for the same trade data. This pricing model could be considered a form of price discrimination and is an important driver of the prices different users pay for trade data.
- 2.64** Venues set prices for trade data licences that vary depending on the content of the data, and the way the data is used. For example, some venues offer substantially lower priced data to private investors compared to business or professional users. Venues also often charge less for viewing data on a screen than when the data is used as part of a trading algorithm. Many venues require an additional licence where a consumer is redistributing data onwards to their own clients. These practices are a form of price discrimination as the differences in prices across these different offerings do not appear to fully reflect

differences in the costs incurred by venues, although in some cases differences in price may partly be reflective of costs. Venues told us their pricing decisions also took into account the value users derived from their specific use of data.

- 2.65** Price discrimination between different customer groups can lead to benefits if it enables certain groups of customers to purchase goods or services that would not be available at higher uniform prices. However, where competition doesn't work well or users have little or no choice but to purchase, price discrimination can also lead to some users paying very high prices. Price discrimination practices can also have a dampening effect on competition, and pricing strategies can be designed to allow venues to limit effective competition, for example, by discriminating between users who can switch to other providers or negotiate, and users with little to no alternatives but to purchase.
- 2.66** Venues told us they considered a range of factors when setting prices. Costs were one factor. Venues considered their overall costs (including the trade execution side of the business) and direct data specific costs where venues knew these. Several venues also told us they considered the value of data to customers when setting prices. To undertake this value assessment venues employed a range of techniques to understand what customers were using data for. Venues regularly spoke with their customers, undertook audits of their customers' data usage and benchmarked their prices against similar venues. Venues adapted existing licences and created new licences to align with the information they gathered from customers and competitors.
- 2.67** Table 1 summarises the findings of our analysis of these price lists. While we were unable to undertake a full assessment of the relative value and cost drivers of prices, the analysis, combined with responses provided by trading venues, suggests prices are set with partly with reference to the value of the data to users.

Table 1

Venues charge more for data when customers are licensed to:	Venues charge less for data when customers are licensed to:
<ul style="list-style-type: none"> • use data in automated processes such as algorithmic trading or operating a platform • use the data in a trading platform offered by the customer • either redistribute trade data or use the data as part of a calculation such as a benchmark or index • more detailed trade data containing the full record of activity on the venue • access real-time data 	<ul style="list-style-type: none"> • a basic subscription/licence combination where the data is being viewed on a screen by a single user within a firm • data not used for commercial purposes, such as use by private investors • less detailed data, for example only summarising or aggregating the data • access data delayed by 15 minutes

- 2.68** To support our analysis we also considered how far trade data requirements varied across different users in our sample. We found that requirements were determined primarily by the purposes for which users use data, which is often a result of the consumer's business model. The size and breadth of the business was also important, as larger users had a range of different data needs. As such, the type of trade data, latency, depth and level of internal access to employees varied widely which led to large differences in overall expenditure. For example, investment banks are more likely to have broad needs, which often require higher priced non-display licences. Benchmark administrators require licences to distribute data in a derived way, which often incur costs beyond licences with no rights to redistribute.
- 2.69** Our analysis of consumer expenditure on trade data supports this finding. There was a range in trade data expenditure across our sample. Three quarters had spending less than £600,000 on trade data, while the highest expenditure was over £6m. Banks, benchmark administrators and broker-dealers were on average among the highest spenders, while asset managers and principal trading firms were on average among the lowest spenders. For example, we found that the median investment bank in our sample paid £2.1m in 2021 for trade data, compared to under £50,000 for asset managers. This large disparity is the result of differences in the data requirements for these different business models.
- 2.70** Of the users that bought trade data throughout 2017-2021 and reported these figures to us, median expenditure rose 32%. At the upper end of the distribution three users (an asset manager, a principal trading firm and a platform) each told us their expenditure increased sevenfold over the period.
- 2.71** We considered whether practices such as discounting could be driving differences in consumer expenditure on trade data and the prices they pay. About a quarter of the users that responded to our questions on discounts told us they were aware of discount policies; these were said to be offered by a variety of trading venues and market data vendors and often related to the number of licences purchased.

Complicated licensing makes it difficult for users to monitor trade data costs and make effective choices

- 2.72** Making decisions in terms of purchasing new licences and subscriptions and managing existing ones requires users to undertake careful consideration of their needs and the offerings of venues. In some cases, users spend time and resources on data procurement and management of access to users within the firm, sometimes with a dedicated team of staff. This is because many uses for trade data require a specific licence, and subscriptions may be tied to a specific user or terminal that needs access to be carefully controlled. In addition, venues undertake audits of usage which can be costly and place a burden on users beyond what they are paying for the data. In some cases, it can lead to an increase in expenditure if the venue believes the consumer needs to purchase more licences.

2.73 Users of trade data raised complexity of venue practices as a concern. Complexity can dampen competition by making it hard for users to make effective decisions. It can also be the result of poor competition, as venues have few incentives to reduce complexity to benefit users. By complexity users mean:

- The model of licensing data for a use case can drive complexity, given many users have lots of different needs for data. It is particularly complicated where venues introduce new licences regularly.
- The terms used in the subscriptions, licences and terms and conditions which are specific to a venue and not based on a consistent language. For example, terms such as 'display' or 'non-display' have specific, precise meanings depending on the venue.
- The need to manage these licences across multiple venues.

2.74 Complexity is not a problem in of itself if the market delivers good outcomes overall for users, for example by allowing users to pay for only the data they need. However, we believe in the light of our findings on (a) increasingly differentiated prices across different users (b) cases of rapidly rising prices as a result of new licences (c) the competitive position of venues, poor outcomes are compounded by the complexity of licensing. Complexity of licensing practices leads to harm in two ways:

- We believe some users find it difficult to make informed decisions about the data they want to purchase from venues as the price lists are often complicated and the terms and conditions attached to licences are extensive.
- Users incur financial and opportunity costs in managing their data consumption and expenditure to minimise uncertainty. This raises the overall costs incurred by users.

2.75 Users in our sample told us that, with respect to complexity of licensing:

- Of the trade data users in our sample that responded to this question, 46% said that licence terms had become more complicated in the last 5 years (37% said they had not experienced greater complexity, the remainder were unclear) and 41% say new fees have been introduced. 50% say licence terms have become more complicated or new fees have been introduced. 32% say these issues have led to uncertainty or higher costs.
- Of the users in our sample that claim to have been audited, 88% of users complained about the expense, time or resource of the audits. 42% complained about the arbitrariness of audit decisions and their inability to negotiate or influence decisions while a handful of users complain about the venues using audits as a sales or market research tactic, for example using the information gathered through the audit to offer additional services or to understand how users are using data.
- About a third of users, including some larger asset managers and banks, told us they monitor their data usage continuously, in order to reduce costs by turning off feeds or removing individual users wherever possible.
- Of the trade data users in our sample that responded to this question, 65% of users told us they would prefer greater standardisation of the licences sold by different venues, meaning that more consistent terms and categories were used. Users cited potential benefits of standardisation as improved legal negotiations,

reduction in administrative burden, making costs of services comparable for users, allowing users to compare vendors, allowing for greater transparency over usage permissions, and greater predictability of costs.

- Of the users in our sample that responded to our question regarding comparison of fee schedules, 42% told us they faced difficulties comparing the fee schedules of trade data across different providers. Some of the cited impacts on business from the difficulty of the comparison were more time spent managing data, being required to hire extra resource (e.g., to maintain compliance or monitor fee schedules over time) and impacts on their ability to fully utilise data).

Fees are so complex and particular to each [venue] that firms are required to employ individuals to interpret the fees and the multiple footnotes on the schedules. (Trade data user)

- 2.76** The core driver of complexity was the need to hold multiple licences for the same data, which derives from the pricing practices venues employ. 63% of trade data users that responded to our questions on complexity told us that there are instances where their firm pays multiple fees, or is required to hold multiple licences, relating to the same trade data.
- 2.77** 62% told us their licensing agreements had changed in some way over the past 5 years. Common changes included: new licensing agreements, changes to usage fees, delayed data, distribution and usage terms, increased fees for redistribution of derived data, changes in data disclosure requirements, additional licensing requirements for use of data (packaging of data). Users also said changes included additional fee types such as non-display, derived data, white labelling, applicant usage, minimum monthly costs and minimum length of agreements.
- 2.78** To monitor licences and to ensure that terms were being complied with venues required customers to undergo audits of their data use. Venues use audits to ensure trade data is being used within the terms of the licence agreement. Audits are more frequently carried out by equities and derivatives exchanges than fixed income venues. Typical audit findings relate to underreporting of users and incorrect licences. Audits are used for venues to ensure terms are enforced but drive complaints from users.
- 2.79** Half of the users that responded to our questions about audits had been audited by their trading data provider, either an APA, trading venue or a third-party provider. Almost half of these audits were said to take more than a year, and a large majority of audited users raised concerns about the cost of audits.

The workload to manage audits is huge. Licensing model and related policies are so complex (something more than 50 or even 100 pages) that audits also become incredibly complex to manage. (Trade data user)

- 2.80** Based on evidence provided by users of trade data and trading venues, we find the practices of sampled venues in licensing data create conditions in which it is challenging and burdensome for customers to meet these objectives, thus leading to costs (both financial and economic) over and above the prices paid for the data itself.

The last word is always on Trading Venue's side. (Trade data user)

- 2.81** Complexity is not a problem when overall outcomes for users of trade data is good. We recognise that users in this sector are sophisticated, and complexity is unlikely to prohibit good outcomes on its own and may be a necessary part of the market, for example, allowing venues to offer discounts to some customers while earning revenue from other larger customers. However, in the light of our findings on the ability of venues to set prices and terms, the limited ability of users to switch or negotiate, and evidence of practices that increasingly seek to raise prices for an existing user base, and rising expenditure, we are concerned about the level of complexity we see in the market and believe it is contributing to worse outcomes.

Users find free delayed data is often of poor quality

- 2.82** MiFID II introduced transparency requirements that obligate venues to provide post-trade data free of charge, 15 minutes after a trade has been executed. Users, particularly asset managers and banks use delayed data for a variety of non-time-critical purposes where it can act as a suitable substitute for real-time data. Uses include redistribution of data to clients, for risk management purposes, for profit and loss reporting, for market information gathering, and for investment strategies. We identified two areas of concern in delayed data. Firstly, in practice many users pay for delayed data. Secondly and relatedly, freely available delayed data is often of poor quality and not usable. These concerns apply primarily to users accessing data directly from trading venues. When users access delayed data through market data vendors, we found fewer concerns.
- 2.83** In practice, of the users we sampled that access delayed trade data, 31% access it for free, while 69% pay for it (on its own or as part of a bundle). Despite being nominally available for free, users pay for delayed data for two reasons.

Due to the format in which it is presented, delayed data made free after 15 minutes by trading venues is not fit for business use. (Trade data user)

- 2.84** First, venues interpret the rules such that they are able to charge for delayed data in certain cases. Users in our sample generally reported not being charged for delayed data when the usage remained internal to the firm but being charged for other uses such as redistribution or when the delayed data is packaged with a value-added service (such as analysis, data aggregation or the creation of historical data feeds).

- 2.85** Second, users experience quality issues with free delayed data. About a third of the users that access free delayed data reported issues with the usability of the data, including inconsistency in data formats and fields, and data errors. By contrast, users reported that delayed data provided by market data vendors was easier to use.
- 2.86** Delayed data makes up only a small fraction of the trade data market revenue, accounting for approximately 3% of total trade data revenue, although it is greater for some specific venues. However, when the rules are effective, delayed data should provide not only a lower cost way of accessing data for less time-sensitive users, but also an important competitive constraint on the real-time data offerings of trading venues. It is plausible that this dynamic is one of the reasons freely offered delayed data is of poor quality – venues have little incentive to improve the quality of the free delayed data offering they are required to produce, particularly where they offer paid for, competing alternatives.

Chapter 3

Next steps

Overview

- 3.1** Given the importance of trade data for trading activities and investment decisions, it is important that this market works well. In a trade data market that worked well, we would envisage seeing the following outcomes:
- Trade data is accessible, complete, and available in the right timeframes to users who need it to make informed trading and investment decisions, innovate and expand, and meet their regulatory requirements.
 - Trade data licensing is simple and clear, and users have reasonable certainty on their overall expenditure over a given period. Licensing and associated practices do not constrain innovation.
 - Trading venues continue to make their data available on a fair basis to be accessed either directly or through vendors.
 - Rules incentivise competition and innovation and drive good outcomes. If they do not, they are adapted as necessary.
- 3.2** Based on the findings of this review, alongside those from our call for input, we think it is important to take steps to help address concerns identified. There are two pieces of further work that we will prioritise. These are the development of a consolidated tape and the launch of the Wholesale Data Market Study.
- 3.3** We are prioritising work in these two areas and we will consider the extent to which the issues we have identified in this review are addressed by the outcome of this further work. Under The Financial Services and Markets Bill, the Government aims to tailor financial services regulation to UK markets. The Bill implements the outcomes of the Future Regulatory Framework (FRF) Review, including the transfer of firm-facing legislative powers for financial services previously contained in EU law to the FCA. As such it will provide us with the ability to make changes to relevant legislation in the future. Any additional steps we consider taking will be done within the context of wider priorities, forthcoming legislative changes, trends and developments in the trade data market and the global context for trade data markets. We would also engage with stakeholders about any proposed further actions.

Consolidated tape

- 3.4** A consolidated tape collects market data, such as prices and volumes, from on-venue and OTC trading across the market for a specified class of financial instruments and disseminates them in a standardised, single feed. It can include either or both reports of pre-trade and post-trade data.

- 3.5** There are multiple benefits that have been suggested of a consolidated tape, with the relative size of each being dependent on the asset class and model of a consolidated tape. Based on the responses to the Wholesale Markets Review and on the report on the creation of a consolidated tape in the European Union prepared by Market Structure Partners for the European Commission, some of the benefits of a consolidated tape that were highlighted include:
- a. Cost and licensing of market data.** A consolidated tape is seen by users of trade data as a means of liberalising the availability of data and of putting pressure on the level and structure of fees of key trading venues and data vendors.
 - b. Data quality.** A consolidated tape is seen as a means of improving the overall quality of trade data. A provider would be incentivised to identify and seek to resolve issues in the quality and consistency of data they are consolidating to increase data sales and to meet regulatory expectations.
 - c. Improving market quality.** There are three main ways in which it has been suggested that a consolidated tape could improve market quality:
 - Better trade outcomes by improving understanding of trading costs and liquidity opportunities.
 - Promoting innovation and competition by making it easier for clients to hold their brokers to account through a better understanding of execution outcomes.
 - Visibility of liquidity, such as historic data, can improve liquidity risk management through better asset allocation.
 - d. Broadening participation in financial markets.** Some market participants believe that a consolidated tape will achieve this, particularly amongst retail clients, through wider access to trade data.

- 3.6** The FCA is working with the Government on the development of a regulatory framework to facilitate a consolidated tape for the UK. As a first step, we plan to publish a consultation paper by the summer of 2023 on proposals for a consolidated tape. Depending on the design of any consolidated tape and how it is provided, it could help address issues with the cost, quality and choice of wholesale data. The findings of this review will help inform the design of consolidated tapes.

Wholesale Data Market Study

- 3.7** We found that market data vendors play an important role in the supply of trade data. Trade data is also part of the wider wholesale data ecosystem, which includes different types of financial data, distribution channels such as market data providers, and benchmarks and indices and credit rating information. We are launching the Wholesale Data Market Study, which will allow us to look in more depth at the impact market data vendors have on wholesale data markets and outcomes for data users and end investors. We have launched the market study alongside publishing the findings of this review and will publish our final report within 12 months.

Chapter 4

Abbreviations used in this document

Abbreviation	Description
APA	Approved Publication Arrangement
ARM	Approved Reporting Mechanism
CFI	Call for Input
DRSP	Data Reporting Service Provider
ESMA	European Securities and Markets Authority
FCA	Financial Conduct Authority
IOSCO	International Organization of Securities Commissions
MiFIDII	The UK onshoring of Markets in Financial Instruments Directive II
MiFIR	The UK onshoring of Markets in Financial Instruments Regulation
MTF	Multilateral Trading Facility
OTC	Over-the-counter
OTF	Organised Trading Facility
RM	Regulated Market
ROCE	Return on capital employed
SI	Systematic Internaliser
WACC	Weighted average cost of capital

Chapter 5

Glossary of terms

Asset class	A group of securities which share similar characteristics and are subject to similar laws and regulatory requirements. Asset classes include equities, fixed income and derivatives.
Audit process	A process carried out by trade data suppliers to detect breaches of data licence agreements by customers.
Benchmarks	Any index by reference to which the amount payable under a financial instrument or a financial contract, or the value of a financial instrument, is determined, or an index that is used to measure the performance of an investment fund with the purpose of tracking the return of such index or of defining the asset allocation of a portfolio or of computing the performance fees.
Bundle	Buying more than one product or service from the same provider and paying one combined, sometimes discounted, fee for the whole package.
Consolidated tape/ feed	A continuous electronic live data stream providing price and volume data of bids and offers, and/or executed trades in financial instruments taking place on trading venues and bilaterally.
Delayed data	A type of trade data which trading venues and APAs should make publicly available free of charge 15 minutes after publication.
Derivatives	A financial contract that derives its value from the price of an underlying asset(s), indices or other measures.
Equities	Shares, depository receipts, exchange-traded funds, certificates and other similar financial instruments traded on a trading venue.
Fixed income	Securities that pay investors fixed payments until maturity date, such as bonds.
Indices/indexes	Any figure that is published or made available to the public, regularly determined, entirely or partially by the application of a formula or any other method of calculation, or by an assessment, and on the basis of the value of one or more underlying assets or prices, including estimated prices, actual or estimated interest rates, quotes and committed quotes, or other values or surveys.
Inter-dealer broker	Classification of broker that traditionally organises trading of cash and derivatives between wholesale dealers.
Joint costs	Joint costs are incurred when production facilities simultaneously produce two or more products in fixed proportions, such that an increase in the output of one product will necessarily mean a corresponding increase in the output of the other product.

Latency	The time that elapses from when a signal is sent to when it is received. Lower latency means lower delays in transmission.
Licences	Limited rights granted by trade data suppliers for customers to use the trade data in specific ways in return for a fee with residual rights reserved to the suppliers.
Market data vendor	An entity that provides desktop or web-based products with content from third parties. It may also provide content owned or developed by themselves.
MiFID II/MiFIR	The Markets in Financial Instruments Directive is the framework of EU legislation for the organised trading of financial instruments, and MiFIR is the related regulation. MiFID was first implemented in 2007 and has since been comprehensively revised (MiFID II), with the changes taking effect from January 2018. The EU MiFID II framework was onshored in the UK by a combination of Handbook rules, Treasury legislation, and directly applicable EU regulations.
Multilateral Trading Facility (MTF)	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 (in the system and in accordance with non-discretionary rules) in a way which results in a contract. [UK MiFIR 2(1)(14)]
Organised Trading Facility (OTF)	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.
Over-the-counter (OTC)	Trading of financial instruments outside the systems and rules of a trading venue.
Pre-trade data	Current bid and offer prices and depth of trading interests at those prices for financial instruments traded on a trading venue.
Price discrimination	Price discrimination occurs where firms charge prices to different consumer groups, with different mark-ups on the costs of supplying the product to these groups; for example, prices differ while the costs of supplying the consumer groups are the same.
Primary market	A capital market for the first issuance and sale of securities.
Post-trade data	Price, volume and time of transactions executed of financial instruments traded on a trading venue.
Real-time data	Trade data delivered as a feed without any delays.

Regulated market (RM)	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 the provisions of Title III of MiFID. In the UK, a regulated market can only be operated by a recognised investment exchange (RIE).
Secondary market	A capital market for the purchase and sale of securities after their issuance in the primary market.
Subscription	Allows individual users to access data for internal display of trade data on a screen, in return for a fee charged on the number of users with access.
Trade data	Produced by trading venues and investment firms. It is a record of the activity that occurs on a trading venue, or when firms trade between each other away from a venue.
Trade execution	Concluding agreements to buy or sell one or more financial instruments on behalf of clients.
Venue	A regulated market, an MTF or an OTF.
Wholesale data	Information, including, but not limited to, quantitative values and measurements in structured formats; generated, distributed and used by market participants in wholesale financial markets, such as: <ul style="list-style-type: none">• Trade data• Pricing and valuation data• Reference data• Credit ratings data• Benchmarks and indices• Other products such as news, company information, research, analytics.
Wholesale market	A financial market which allows companies, financial institutions and public sector organisations to raise capital. It covers lending, equity, debt, derivatives, foreign exchange and commodities markets.

