

Accessing and using wholesale data

Feedback Statement

FS22/1

January 2022

This relates to

Accessing and using wholesale data Call for Input which is available on our website at www.fca.org.uk/publications

Please send any comments or queries to:

Accessing and using wholesale data
Feedback Statement
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1 Summary

Introduction

- 1.1** We are setting out our latest findings on the use of data in wholesale markets and our proposed next steps.
- 1.2** In March 2020 we issued a Call for Input (CFI) to better understand how data and advanced analytics are being accessed and used in wholesale markets, the value offered to wholesale market participants and whether data are being competitively sold and priced.
- 1.3** Our CFI had two areas of focus. We first wanted to better understand the use and supply of market data. In particular, how trading data, benchmarks and market data vendor services:
- are being accessed and used
 - the value offered to market participants and
 - whether data are being competitively sold and priced.
- 1.4** Second, we invited comments about access to and changing use of data and analytical techniques across wholesale financial markets. We wanted to understand the impact new sources of data may have on wholesale markets.
- 1.5** As set out in our 2021/22 Business Plan, we want wholesale markets that deliver a range of good value, high-quality products and services to market participants. Effective competition within the wholesale sector can lead to an increase in the efficiency of markets, lower prices and greater innovation. These markets are typically not directly accessed by retail consumers. But, if competition is working effectively in wholesale markets, we also expect retail consumers to benefit through lower costs and improved quality of investment products.
- 1.6** This Feedback Statement (FS) sets out our findings and analysis of responses received to the CFI and our proposed next steps. Consistent with the FCA's Mission, this FS reflects work in the diagnostic phase of our decision making.

Who should read this Feedback Statement?

- 1.7** This FS will interest stakeholders across the wholesale sector, in particular:
- suppliers, buyers and users of data and related products and services within wholesale financial markets
 - and any other stakeholders who interact with wholesale market participants, who may indirectly be affected by topics covered in this review

The feedback we received

- 1.8** The CFI closed on 7 January 2021 (we extended the deadline from May 2020 to January 2021 to ensure stakeholders could prioritise their response to the coronavirus pandemic). Please see Annex 1 for a list of all questions asked in the CFI.
- 1.9** We received 57 responses from a range of market participants including trade bodies, regulated and unregulated firms. Respondents included both providers and users of the data representing a range of wholesale sectors. Some respondents used or provided more than one type of data.
- 1.10** We also met with 10 stakeholders during the feedback period. We are grateful to all those who took the time to engage with us.

What we found

- 1.11** We heard views from a range of market participants about the way competition is working for the supply of trading data, benchmarks and market data. Overall, views were mixed, largely reflecting respondents' position in the market. Nevertheless, we did hear about market features that we think warrant further investigation to ensure markets for the supply of data are working in the interests of users.

Trading data

- 1.12** Trading data is typically provided by trading venues, Approved Publication Arrangements (APAs) or by vendors sourcing the data from those venues. It may be made available in real-time or on a delayed basis.
- 1.13** Trading data is typically used by investment managers, brokers and banks to trade and make investment decisions. Trading data is also needed to meet regulatory obligations, such as best execution requirements. Other market players using trading data include benchmark administrators (as an input for the creation and maintenance of indexes), trading venues (for product creation, to run multilateral trading facilities (MTFs) and for analytics purposes) and Systematic Internalisers (for executing trades over-the-counter).
- 1.14** As part of the CFI, we wanted to explore how markets for trading data operate, the dynamics of competition, and if these dynamics are driving potential harm to users, and ultimately consumers in the UK.
- 1.15** Reflecting on the feedback we received, we have concerns that trading venues' (including Regulated Markets (RMs), MTFs and Organised Trading Facilities (OTFs)) ownership of data may confer market power, resulting in:
- increasing data charges that may be increasing costs to end investors
 - data charges that may be affecting asset managers' investment decisions and so limiting competition between asset managers
 - data charges that may be limiting the efficiency of trading activity in a way that affects price formation
 - current regulatory provisions for free delayed data that may not be effective

1.16 However, there were clearly differing views between users and providers on how competitive current pricing levels are, the reasons for recent increases in charges and the extent to which charging structures are transparent and enable shopping around.

Benchmarks

1.17 Benchmarks are used by a wide range of market participants, including investment managers, banks and clearing houses, typically:

- as a reference for index tracking funds
- to evaluate an active manager's performance (where the fund performance is measured against a selected index), or
- in structured products, in which case the pay out of the product is directly linked to the performance of the index.

1.18 We wanted to hear from benchmark administrators and their customers to understand how benchmark markets operate and if the competitive dynamics are driving potential harm to users, and ultimately consumers in the UK.

1.19 Reflecting on the feedback we received, the market for benchmark and indices provision may not be working well because:

- Contracts may be unnecessarily complex and conditions not transparent. This weakens users' ability to compare the quality, charges, or innovation offered by alternative services
- There may be barriers to switching between benchmarks. Some of these may be inherent such as brand strength, strong customer preferences affecting their willingness to switch and administrative costs, others may be the consequence of contractual terms
- This is leading to an increase in prices that are not commensurate with increasing costs or improved services of quality

1.20 However, we are also aware that prices may have increased due to innovations that led to higher quality products that are worth more to customers (for example, innovation in improving methodologies and developing ESG-related benchmarks). Changing and increasing use of benchmarks may also be leading to increased client spend on benchmarks. Further, while most of the benchmark users we spoke to did not think that the quality of benchmarks had increased in the last 5 years, the majority were content with the quality provided.

Market data vendors

1.21 Market data vendors play a key role in the distribution of trading data and other sources of market data. Data vendors generally provide desktop or web-based products with sets of content such as trading data from multiple exchanges, research, analysis, GDP and statistical data and news. Data vendors may be able to get data from third parties, while other content is developed or owned by the data vendor. Credit Rating Agencies are one type of market data vendor.

1.22 As part of the CFI, we wanted to hear from different types of market data vendors and their customers to understand the impact data vendors have on the value customers get from their data.

- 1.23** We heard similar concerns from users of CRAs and market data vendors. These included:
- vendors bundling core services with data services, which may make it difficult for users to switch to alternative data products/services and potentially sustaining higher levels of market power of data vendors
 - vendors imposing restrictive terms around data usage, eg higher costs for users for minor variations in terms of use and not publishing price lists or methodologies
 - high barriers to entry, making it difficult to enter the data vendor market
 - high charges upon renewal of contracts as vendors are not subject to the reasonable commercial basis regulations which bite on trading venues
 - a low level of meaningful innovation in the market
- 1.24** However, the fees charged by data vendors will, in part, reflect the fees charged by trading venues for the underlying data. Data vendors also told us that their prices have not increased but rather pricing models have become sophisticated, and there is strong competition between firms in the market.
- 1.25** We heard specific concerns around the practices of CRAs. Users complained about high and increasing fees year on year upon renewal contracts, lack of transparency surrounding contracts, bundling issues and a lock-in to the big three CRAs in the market driven by regulatory and commercial reasons.

Use of alternative data and advanced analytics

- 1.26** Wholesale market participants are increasingly using new data sources and are more able to extract insights from data. For example, new data sources can allow investors to improve their understanding of supply chains and consumer behaviour and so improve their valuations of firms or assets. We wanted to understand the risks and opportunities these bring to emerging existing business models.
- 1.27** We were given examples of the development and increased use of new data sources and analytical techniques. Respondents told us about potential competition and regulatory risks that may arise, but did not identify significant current concerns about the provision of alternative data and advanced analytics.
- 1.28** However, technology and the use of alternative data sources is rapidly developing and we want to keep market trends under review.

Our next steps

- 1.29** Respondents highlighted several areas where competition may not be working as effectively as it should do. Having analysed and reflected on the range of different views we heard, we think further work is needed to understand the potential harm.
- 1.30** In determining our next steps, we acknowledge the concerns raised by respondents in each area considered by the CFI. Recognising the importance of this sector we will undertake a significant programme of work over the next year and beyond to understand and, where appropriate, address the potential harms we have identified.

1.31 Our package of work includes:

- **Trading data:** To better understand the extent to which there are high data costs and complex licensing terms and T&Cs that are creating harm to users, we will conduct an information gathering and analysis exercise in Spring 2022, focused on the pricing of trading data, underlying costs, and the terms and conditions of the sale of trading data. Depending on the evidence, we could consider whether further guidance is needed to address the concerns identified, or if other policy options would be more appropriate. The evidence may also suggest that no further action by the FCA is needed. We will publish our findings later in the year.
- **Benchmarks:** We will undertake a market study looking at how competition is working between benchmarks. The study will look at issues such as how benchmarks are priced, contractual terms and barriers to switching. We plan to launch the market study in Summer 2022 and will publish more details of the scope and timetable at that time.
- **Credit Rating Agencies:** We will undertake a market study looking at competition in the sale of credit rating data. The study will look at issues such as pricing and contractual relationships, barriers to entry and the scope for and level of innovation. We plan to launch the market study by the end of 2022 and will publish more details of the scope and timetable at that time.
- **Alternative data and advanced analytics:** We have already commissioned research to provide us with additional information on the nature and scale of alternative data usage.

1.32 We would like to thank all respondents for submitting their views and those stakeholders who met with us to express and explain their feedback.

2 Background

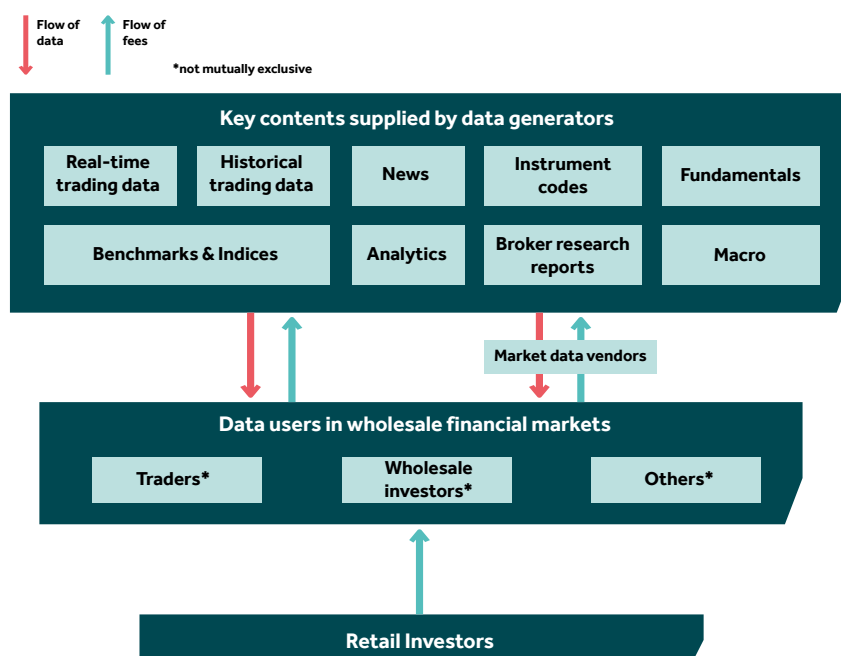
2.1 In this section, we set out the issues considered in the Feedback Statement, and why they are important.

Context

2.2 In our 2019/20 Business Plan we announced our intention to undertake diagnostic work on the use of and access to data across wholesale financial markets. We issued the 'Accessing and using wholesale data Call for Input' in March 2020.

2.3 Figure 1 below shows how market data are provided to users. Trading data and benchmarks or indices can be sourced directly from data generators, or indirectly through market data vendors. Data can be sourced on a stand-alone basis or with other content as part of a bundle. Even though data charges are not itemised and explicitly passed through to consumers, data charges may ultimately be borne by investors such as pension scheme investors, retail investors or businesses seeking to raise capital.

Figure 1: Market data flow



2.4 The activities within the scope of the CFI include both FCA-regulated and closely connected non-FCA-regulated activities by firms. When we refer to 'firms' in this document, we may mean regulated or non-regulated firms. This enables us to examine how non-regulated activities and firms may affect competition in markets we do regulate. FCA-regulated firms, for these purposes, may include firms authorised or recognised under FSMA or other entities authorised by us under non-FSMA legislation, such as data reporting services providers.

- 2.5** Our competition powers extend beyond our regulatory perimeter to broader financial services. So if we identify concerns in non-FCA-regulated markets we can use these powers to carry out market studies or to investigate and act against potential breaches of competition law.

The issues we explored

- 2.6** Our CFI had two areas of focus. We first wanted to better understand the use and supply of market data. In particular, how trading data, benchmarks and market data vendor services:

- are being accessed and used
- the value offered to market participants and
- whether data are being competitively sold and priced

- 2.7** Second, we invited comments about access to and changing use of data and analytical techniques across wholesale financial markets. We wanted to understand the impact new sources of data may have on wholesale markets.

Trading data

- 2.8** Trading data includes information on bid/ask quotes, price of executed transactions and volumes in all in-scope financial instruments available for trading on trading venues and over-the-counter systems (OTCs). Trading data can be used to trade, make investment decisions, and to evaluate positions. Importantly, trading data is also needed by some firms to fulfil their regulatory obligations. These data can also be used by other trading venues and data vendors to provide other products and services, including to supply consolidated data feeds or to provide information to support trading services.

- 2.9** Market participants, trading venues and data vendors need real-time trading data to be able to trade or to offer their services and might select data packages based on coverage, speed and depth rather than price. Other users may be able to use delayed data, primarily to perform middle and back office functions such as best execution monitoring. Some users, such as high frequency traders, are willing to pay a premium for low latency to implement their execution or trading strategies via algorithms.

The regulatory framework

- 2.10** Markets in Financial Instruments Directive (MiFID) II as on shored and UK Markets in Financial Instruments Regulation (UK MiFIR) set out pre-trade and post-trade transparency obligations for suppliers of trading data including trading venues. Pre-trade transparency obligations require trading venues and investment firms to make information about trading opportunities publicly available. The level of pre-trade transparency required depends on the execution protocol a trading venue operates. More liquid asset classes typically operate in the order book environment, where a venue publishes the current bid and offer prices advertised through their systems and the depth of the trading interests at those prices, on a continuous basis during normal trading hours.

- 2.11** Post-trade transparency obligations require trading venues and investment firms to make the price, volume and time of the executed transactions publicly available, as

close to real time as is technically possible. Transactions concluded by investment firms, including Systematic Internalisers (SIs), must be reported under MiFIR via an Approved Publication Arrangement (APA), an entity authorised to publish data feeds of executed trades. Trading venues and APAs are required to make trading data publicly available free of charge 15 minutes after publication.

2.12 MiFID II sets out the framework for the establishment of a consolidated tape for equities. It envisages consolidated tape providers (CTPs) being authorised to collect post-trade reports from trading venues and APAs and consolidate them into a continuous electronic live data stream providing price and volume data per financial instrument. So far, no CTP has emerged. The Treasury has indicated that, as part of its Wholesale Markets Review, it is committed to help progress the emergence of a consolidated tape. It recently consulted on two potential options for a consolidated tape and will be publishing a full summary of the responses to the consultation early in 2022.

2.13 Trading venues must also publicly provide separate pre- and post-trading data on a reasonable commercial basis (RCB) and must ensure non-discriminatory access to the information where:

- the price of trading data should be based on the cost of production and dissemination, and can include a reasonable margin
- the cost of producing and disseminating these data may include an appropriate share of joint costs for other services
- trading venues must disclose the price for providing trading data along with the terms and conditions for providing the data in a way the public can easily access

Issues explored in the CFI

2.14 The CFI looked at how markets for trading data operate, the dynamics of competition, and if these dynamics are driving potential harm to users, and ultimately consumers in the UK. It considered the following:

- **Market features:** MiFID and UK MiFIR reforms have opened up trading venues to greater competition. Trading venues that see their margins squeezed on trading activities could exploit any market power they have in relation to the supply of trading data, to increase data prices, reduce quality and innovation. Where there are no substitutable trading data available (as it may not be interchangeable with data from another venue), firms may have no choice but to buy these data from the relevant providers. Where firms do have a choice, they may still face barriers to switch to alternative data providers.
- **Complex contracts and licencing conditions:** Trading data pricing may be unnecessarily complex inhibiting users' ability to understand licensing and pricing terms and to accurately forecast their trading data spend. Some trading data users had pointed out that trading venues also carry out audits of trading data usage which might result in an increase of compliance costs for trading data users.
- **Pricing levels:** The market dynamics described above could provide the incentive and ability for data providers – such as trading venues and OTC trading facilities – to charge high prices. High prices could limit access to trading data, particularly if users respond to high prices by reducing the amount of data they use. The impact of reduced use of trading data by traders and investors could result in less efficient pricing of securities, lower liquidity and higher volatility of financial markets. Data users may pass the prices through higher costs to the end investors.

- **Quality and innovation:** Firms may lack incentives to innovate, maintain or improve quality if they are unlikely to lose clients to their competitors.
- **Potential for discriminatory pricing:** Trading venues are required by MiFIR and MiFID II and as further specified by Articles 6 to 11 of Delegated Regulation (EU) No 2017/567 and data reporting services providers by Articles 84 to 89 of Delegated Regulation (EU) No 2017/565 to provide trading data on a non-discriminatory basis within the same category of use (for example redistributors, data users). But venues can define these categories themselves and so may be able to charge competitors, such as MTFs and SIs, more than other users, potentially distorting competition in other markets and creating harm to users.

2.15 The responses we received to our trading data questions and our response are set out in 3.3 – 3.30.

Benchmarks

2.16 Benchmark administrators can be specialist benchmark providers, but they can also be exchanges, banks, asset managers, market data vendors, public bodies, or trade organisations. Some of them are vertically integrated firms that act as data generators, market data vendors and publication agents.

2.17 Previous findings in the Wholesale Sector Competition Review (WSCR) (see section 4, pp.39-43) and the Asset Management Market Study (see section 7, pp.44-46) suggested that competition may not be working well in the provision of indices and benchmarks, and we have heard similar views and concerns since these findings.

The regulatory framework

2.18 The EU Benchmarks Regulation (EU BMR) came fully into force in January 2018, with a two-year transition period. It aims to ensure benchmarks are robust and reliable and minimise conflicts of interest in benchmark-setting processes. It also requires the administrator of a critical benchmark to ensure all users are provided access on a fair, reasonable, transparent and non-discriminatory basis. The EU BMR then became part of UK law on 31 December 2020 by virtue of the European Union (Withdrawal) Act 2018 (BMR).

2.19 The BMR defines an index as a figure that is publicly available and is regularly determined, either by applying a formula or other calculation or by making an assessment based on the value of one or more underlying assets/prices.

2.20 An index becomes a benchmark within the scope of the BMR where it is used to determine the amount payable under a financial instrument or contract or the value of it. An index also becomes a benchmark if it is used to measure the performance of an investment fund with the purpose of tracking the return, defining the asset allocation of a portfolio or computing the performance fees. We use this definition in this FS, but other definitions exist.

Issues explored in the CFI

2.21 Through the CFI we wanted to explore how benchmark markets operate, and if the competitive dynamics are driving potential harm to users, and ultimately consumers in the UK. It considered the following:

- **Concentrated markets:** Market concentration is not necessarily harmful, if the market is susceptible to entry. There may be benefits from concentration as the

value of benchmarks may increase with the number of users (a so called 'network effect'). Wide adoption of a given benchmark may improve market efficiency by reducing transaction costs and increasing liquidity. However, concentrated markets increase the potential for suppliers to have market power and for competition to not work well.

- **Vertical integration:** Some benchmark administrators operate in multiple different segments of the value chain in different roles. Vertical integration can be beneficial to the end consumers as it may improve efficiency through enabling synergies and reducing costs at the different stages across the value chain. But there is the potential for harm when vertically integrated firms provide inputs to other firms that compete across the value chain. For example, a benchmark administrator holding trading data may have an incentive to increase prices or hinder data access to firms who could use them to design alternative benchmarks. This could create barriers to entry or expansion and reduce overall choice in the market.
- **Market dynamics:** How benchmark administrators operate and the dynamics in this market are affected by demand:
 - **Demand-side preference for established benchmarks:** If end clients tend to prefer products that are referenced to well established benchmarks and brand recognition is key to success, strong market positions may tend to reinforce themselves. These preferences may also limit new entrants to the market.
 - **Switching costs for benchmark users:** Switching costs can cause harm if they prevent benchmark users from switching to products that better suit their needs. New benchmark administrators could also struggle to compete due to the cost of switching for benchmark users. Switching costs could be high, for example, because of the time and technical requirements involved in setting up a new relationship with a benchmark administrator, contractual arrangements, or the need to adapt business practices to different inputs.
 - **Transparency and complexity of contract terms:** Potential harm could arise if contracts are unnecessarily complex and conditions are not transparent, weakening users' ability to compare the quality, charges, or innovation offered by alternative services. Complexity and lack of transparency could also hide switching costs, making it unexpectedly costly to exit contractual relationships if quality is lower/or charges are higher than expected.
- **Quality and innovation:** High switching costs and lack of suitable alternative substitutes may weaken incentives for providers to innovate or improve the quality of their products. Challenger firms may also be dissuaded from investing in designing and marketing alternative benchmarks or from entering the market, if they believe clients will stick to the main brands.
- **Pricing for benchmarks:** Concentrated markets could increase the potential for benchmark administrators to have market power allowing them to charge higher fees to clients. These higher fees could then be passed through to downstream markets for asset management, investment banking and other wholesale and retail sectors (and ultimately, may feed into retail investor or consumer prices).

2.22 The responses we received to the benchmark questions and our response are set out in 3.31 – 3.49.

Market data vendors

2.23 Market data vendors play a key role in the distribution of trading data and other sources of market data. Data vendors generally provide desktop or web-based products with sets of content such as trading data from multiple exchanges, research, analysis, GDP

and statistical data and news. Data vendors may be able to get some of the content from third parties, while other content is developed or owned by the data vendor. Data vendors provide access to these trading data via a standardised stream and offer processed data alongside functions like valuation tools and chat functionality. Market data vendors cover a broad range of firms, including trading venues, credit referencing agencies (CRAs) data distributors, and firms providing data analytics and associated products.

- 2.24** Data vendors also sell data products and services in markets downstream from their core products. This vertical integration is common for data vendors who operate across the value chain as data generators (eg trading venues and instrument code providers), data aggregators, index administrators and desktop solution providers.

The regulatory framework

- 2.25** The activity of formatting, aggregating and distributing trading data to end users by market data vendors is not regulated (to the extent they do not fall within the scope of the regulated activity of arranging deals in investments or operating an APA, ARM or CTP). MiFID II pricing-related requirements do not apply to market data distributed by data vendors. But many users of market data vendors' services use them to inform their decisions in relation to regulated activities. Distortions or weakness in competition for data vendor services could affect other services within the regulatory perimeter set out in FSMA.

- 2.26** Activities by market data vendors may operate outside our regulatory perimeter. If we identify concerns in non-FCA-regulated markets, such as market data vendors, we could use our wider competition powers to carry out market studies.

Issues explored in the CFI

- 2.27** Given the role data vendors have in supplying market data to a range of market participants engaged in regulated activities, our CFI explored the impact data vendors have on whether participants can get value for money for these services:

- **Concentrated markets:** If data vendors do not face sufficient competitive pressure, they may be able to charge higher prices and face little incentive to provide quality services and products. If users are dependent on a single provider, this could potentially lead to market integrity or orderly trading issues. Innovation and competition may also be hampered if data vendors' market power or pricing strategies create barriers to entry.
- **Market dynamics:** There are a small number of firms offering market data to a range of market participants engaged in regulated activities. Data vendors might be able to use their scale in the market to negotiate on behalf of their users and to ensure market data prices are competitive. We looked to explore the extent to which this happens and what may prevent this.
- **Bundling of data vendor products:** Data vendors typically sell different bundles of content. Bundling could have benefits for users if it creates efficiencies such as lower overall cost, or savings from dealing with a single provider, giving the data vendor a competitive advantage. But bundling of data products and services may reduce price transparency of individual elements, making it harder for clients to accurately assess whether they are getting value for money. Buyers may also have to pay higher prices or pay for products or services they do not need. Bundling could also make it difficult for buyers to negotiate effectively with vendors. Bundling may also raise barriers to entry for new competitors. It also makes it difficult for

competitors to compete for those products or services included within the bundle if individual prices are unclear.

- **Vertical integration:** Data vendors also sell data products and services in markets downstream from their core products. Vertical integration can be beneficial to the end consumers as it may improve efficiency through enabling synergies and reducing costs at the different stages across the value chain. But it may also cause competitive distortions at different points of the supply chain. For example, if vertically integrated data vendors are charging different prices to data users who compete with them or are not offering them access to input data that could enable them to compete.

2.28 The responses we received to our questions on market data vendors services and our response are set out in 3.50 – 3.78.

Accessing and using data and advanced analytics

2.29 There are many potential benefits of using data and advanced analytics in wholesale markets. For example, as firms increase the volume of data that is incorporated into investment decision models, they may be able to create more refined modelling scenarios, which can improve returns for investors. Advanced analytics can analyse more data from a wider range of sources quicker, creating potential to increase execution speed and reduce costs. As wholesale market participants use new sources of data more effectively, this could lead to better price discovery and reduced trading costs.

2.30 However, this may also affect competition and pose new risks. As data becomes an increasingly important component in wholesale markets, market participants may recognise the value of the data that they hold.

2.31 As part of the CFI we wanted to better understand the types of data and analytical approaches used and the impact to both competition and broader regulatory risks. In particular:

- **The ability of firms to access data and use advanced analytics:** Any barriers to firms accessing data or to techniques for analysing data could affect future entry into or expansion in wholesale markets. The inability to access data could also lead to information asymmetries amongst participants. This could have implications for competition and market integrity.
- **Changing and emerging business models:** New and emerging uses of data may lead to changing business models and could affect the fundamental dynamics and structures of wholesale markets as well as the broader workings of competition.
- **Data governance, controls and ethics issues:** Governance and control issues are increasingly important due to the increasing and changing uses of data. Potential ethical implications also arise when new forms of data and advanced analytics are used.
- **Concentrated markets:** Potentially high concentration in the supply of data and technology services could be a symptom or indicator of weak competition amongst third-party providers who provide these services, potentially leading to harm to consumers.
- **Information sharing, collusion and biases:** More sophisticated analytical techniques can lead to new efficiencies and more effective price discovery. But this may also introduce new types of risks or harms. For example, machine learning techniques giving rise to increased risks of collusive outcomes. There is also a

risk that machine learning based on historic data could lead to unintended biases towards incumbents. Potentially, creating new types of barriers to entry.

- **The implications on market stability:** Potential harm might materialise through the adoption or reliance on new technology. Firms' increasing reliance on technology in portfolio management processes, may lead to increased herding-like behaviours in the future. The use of complex algorithms may also create potential risks that firms are unable to explain the rationale behind certain recommendations or decisions. Potentially leading to investment decisions that take excessive or unintended risks. Outcomes such as these could threaten market stability.

2.32 The responses we received to our questions on accessing and using data and advanced analytics and our response are set out in 3.79–3.98.

Responses received

2.33 A breakdown of the responses we received by market participant is shown in Table 1. Respondents to the CFI fell into multiple categories and responded accordingly. As a result, the total number of market participants shown in the table below does not add up to 57.

Table 1: Number of respondents by type

Type of market participant	Number of respondents
Trade data users	28
Trade data providers	15
Benchmark users	18
Benchmark providers	15
Market data vendor users	24
Market data vendors	9
All - Alternative data and advanced analytics	20

3 Summary of feedback and our response

- 3.1** In this section, we summarise the feedback we received in response to our CFI.
- 3.2** We received responses from a range of wholesale market participants and trade bodies representing users across the buy-side, sell-side and market infrastructure providers. We did not receive responses to all aspects of each of the themes and so only report where we have received responses.

Trading data

- 3.3** We asked users of trading data questions about the type of trading data they use and how they use it, the pricing and quality of trading data and their evolution over time, ease of understanding of pricing/licensing terms and the effectiveness of ESMA's suggested improvements to the RCB requirement.
- 3.4** We also asked providers of trading data questions to understand how they ensure that the data they offer meets the needs of users, how trading fees, trading data prices and service offering have evolved over time, and how pricing policies are set.

Feedback received

Users of trading data *Market dynamics*

- 3.5** Trading data is typically used by investment managers, brokers and banks to trade and make investment decisions. For these activities, users told us they typically require real-time data and obtain it either directly from trading venues or indirectly from market data vendors. The real-time data needed includes information on the lowest ask price and the highest bid price for each security, all executed trades (Level 1 data) and market depth data (Level 2 data). Other users may be able to use delayed data, primarily to perform middle and back office functions such as valuation and risk management. Some users, such as high frequency traders, are willing to pay a premium for low latency to implement their execution or trading strategies via algorithms. Trading data is also needed to meet regulatory obligations, such as best execution requirements. Other market players using trading data include benchmark administrators (as an input for the creation and maintenance of indices) and trading venues (for product creation, to run Multilateral Trading Facilities (MTFs) and for analytics purposes).
- 3.6** Typically, users responded that trading data is not offered under competitive conditions. The main reasons cited are that:
- trading venues have a monopoly in the provision of their data, due to a lack of substitutable alternatives, and

- the data is a 'must have' for users to be able to make investment decisions and meet regulatory obligations, which further increases the negotiating power of providers vis-à-vis users.

Price and quality of real-time trading data

- 3.7** Users of trading data uniformly responded that the price of real-time trading data offered by trading venues is too high compared to what they consider could be the cost of producing and disseminating the data (plus a reasonable margin) and that prices have largely been increasing in the past 5 years. Users also consistently responded that trading venues are increasingly charging for additional uses of the data ('use cases'). A firm requiring the same data for multiple uses (for example, Systematic Internaliser (SI) use, research and advisory use, or derived data rights) would therefore have to pay a separate license for each use case and pay multiple times for the same data.
- 3.8** The examples of trading data price increases we were told about varied depending on the venue and type of data, but users tend to agree that the largest price increases involved non-display data. Display data is commonly considered as data that is consumed by a human user through the support of a screen, whereas non-display data would generally refer to data directly fed into trading algorithms. Due to the creation of new trading strategies, such as algorithmic and high-frequency trading, demand has been growing particularly for non-display data in the past decade.
- 3.9** Responses stated that high data costs can represent a barrier to entry or expansion for users. Several asset managers told us that trading data costs played a role when deciding whether to open offices in new locations because some data costs are paid per location. Hedge funds argued that high data costs can put them off entering new asset classes, which could limit competition between them. There is also a risk that the high prices could mean that some firms do not purchase the data necessary to make effective decisions to aid price discovery, which could erode market efficiency.
- 3.10** The majority of respondents were happy with the quality, provision, coverage, speed and depth of real-time trading data, but argued that over the past 5 years there has been no significant improvement in trading data quality. Based on this observation, and the fact that data transfer costs (reportedly the main input cost for the provision of trading data) have been decreasing, they argued that the observed price increases are unjustified.
- ### ***Discriminatory pricing***
- 3.11** Trading venues are required to provide trading data on a non-discriminatory basis within the same category of use. As venues can define these categories themselves, we were interested in understanding whether they are able to charge competitors more than other users. The majority of trading data users said that they are not aware of such differences in prices because they don't have sight of prices paid by other firms.
- 3.12** In relation to venues' practice of charging for the same non-display data feed different prices depending on the use case (such as trading as SI or MTF or producing indices), several respondents said that they are particularly worried about having a separate usage category for SI and MTF use (sometimes even priced at a premium to other uses). Users are worried that this could limit the ability of SIs to provide alternative execution methods and deter participants from making markets on alternative venues such as MTFs and thus impact competition.

Concerns in relation to free delayed data

3.13 Trading venues and APAs should make trading data publicly available free of charge 15 minutes after publication. Several respondents said that the quality of free delayed data is poor. In particular, we heard that the format and restrictions on the data (such as exclusion of any derived use) mean that it is of no or little use, so that paid-for delayed data is the only option. We also heard that often data providers charge for delayed data in specific situations. Examples of exchanges charging for delayed data include for:

- redistribution of delayed data for a fee
- the creation and selling of indices/financial products utilising delayed data, and
- derived data usage utilising delayed data

3.14 In 2019-2020 we engaged with trading venues and APAs to bring them on path to compliance with trading data requirements. We appreciate that this might continue to be an issue and that further work may be required.

Contracts and licensing conditions

3.15 For both real-time and delayed data, most respondents argued that trading venues often have opaque and complex licencing fees and terms and conditions, which make it hard to compare providers. We also heard that these complexities require users to incur significant additional costs to understand and comply with policies (such as administrative costs, costs to hire specialist resources). They also allow trading venues to collect significant revenues and identify new licences through data usage audits.

3.16 Audits are perceived as excessively burdensome on users of trading data and, in some aspects, unfair. The main reasons are that:

- The burden of proof typically falls on the data user. If the user is not able to provide a proper audit log of all end-users permissioned to a specific application, they will be asked to pay for all potential employees having access to the application, which in some cases could be the entire staff.
- There is a limit on how far back in time data users are entitled to be compensated for overpaid trading data fees (usually 60-90 days from the time of the audit), whereas trading venues can go back several years if users underreported.
- Finally, several respondents argued that there are conflicts of interest in the audit process, as audits are often conducted by external firms who are paid a portion of the penalties they impose, which increases the pressure to find alleged transgressions and impose retrospective fees.

Effectiveness of ESMA's suggested improvements to the RCB requirement

3.17 We asked users whether they felt that the suggested improvements to the RCB requirement which ESMA put forward in 2019 would adequately constrain trading data pricing. Despite any regulatory changes introduced by ESMA after Brexit not automatically applying to us, we think they provide an important reference.

3.18 In its December 2019 report ESMA concluded that MiFID II had not delivered on its objectives to reduce the price of trading data and to make data available free of charge 15 minutes after publication. ESMA recommended targeted changes to delegated legislation to strengthen the concept that pricing should be linked to costs and the improvement of the current ('transparency plus') approach through supervisory guidance.

3.19 The final guidance (the guidelines) was published in June 2021 and includes:

- **Guidelines on real-time data:** including provisions on the cost setting methodology (which aim to clarify what costs can be allocated to the cost of production and dissemination of trading data), on audits, on the standardisation of key terminology and of publication formats for certain information (such as the explanation of the accounting methodology for setting trading data fees, including a list of all the types of costs included in the fees and the allocation keys for joint costs and considerations on why the margin charged is reasonable).
- **Guidelines on delayed data:** including provisions clarifying that delayed data should be provided in a format adapted to the users' needs and allowing for limited instances where data providers may charge for delayed data (such as where a delayed data user re-distributes the delayed data for a fee).

3.20 Respondents typically felt that MiFID's and UK MiFIR's RCB provisions are not effective. Most said that ESMA's recommendations go in the right direction, though they don't solve all the problems and further additional measures should be considered.

3.21 The suggestions shared include having National Competent Authorities (NCAs) enforcing the RCB requirements, requirements to disclose to NCAs the costs to produce and distribute trading data as well as revenues (possibly in a standardised way), creating a consolidated tape for equities and price regulation, such as a Long Run Incremental Cost + (LRIC+) approach.

Providers of trading data ***Market dynamics, quality and innovation***

3.22 Data providers have a different view and typically said the market is highly competitive. Exchanges typically noted that they compete for the joint product of data and trading services and that the competitive constraints that exchanges face in their overall trading activities therefore drive the pricing of trading data.

3.23 Exchanges also argued that they continuously invest in numerous activities and the quality of exchange trading data would be affected if data fees were set too low – as there would be fewer incentives for exchanges to further invest in high-quality trading data.

3.24 The main factors exchanges told us they compete on are:

- transaction fees and trading data fees;
- depth and liquidity of markets;
- price transparency;
- reliability and speed of trade execution and processing;
- technological capabilities and innovation;
- breadth of products and services;
- quality of service;
- distribution and ease of connectivity;
- reputation.

Price of trading data

3.25 Exchanges typically argued that trading data is a joint product with trade execution. So when assessing trading data pricing trends, it is important to consider revenues from both trading and trading data as well as the overall trading costs for users. This would

require taking into account revenues from data fees, execution fees, and liquidity (the bid-offer spread).

- 3.26** Most data providers said that trading data fee increases have been small on average or that trading data revenues have been stable over several years. One respondent highlighted that the picture for non-equity trading data is different to equity data. Because non-equity trading data is available for free after 15 minutes, which is equivalent to real-time in these markets, users usually don't pay for the non-equity real-time service unless they pay a market data vendor to aggregate it with other real-time data feeds from that vendor.
- 3.27** Exchanges also suggested that there has been an increase in consumption of trading data and changes in usage patterns, which can explain changes in trading data spend for users.
- 3.28** Almost all data providers said they do not charge for internal use of delayed data, but charge where a customer is commercialising data by redistributing it or creating new derived products. Examples of customers commercialising data include data vendors, internet providers and benchmark providers. Some said commercialisation can be direct and indirect (where the data user generates indirect revenue, for example via advertisement) and that trading data providers should be allowed in both cases to charge for delayed data. So, many respondents think that trading venues need to be able to monitor the usage of data in order to verify whether it is being redistributed/used to create value-add products and establish terms of use accordingly.

How prices are set and user needs are met

- 3.29** Most trading data providers said they consider the prices set by competitors when setting their pricing policies. Nearly half also said they set prices based on the customer's use and often based on the value the customer derives from the use case. They argued that value-based pricing - which implies charging for the same data different prices to different users depending on the value they derive from the data - is positive from a total welfare viewpoint, as more customers can be served. If every customer were to bear the same costs, irrespective of the intensity of use, low-intensity users would be discouraged from purchasing trading data as the costs would be too high relative to the benefit they derive from the data.
- 3.30** All exchanges said that to ensure that the trading data they provide meets the needs of their clients they work with and listen to the needs of their customers. They told us they consult customers and use their feedback to shape their policies. Other respondents conduct data reviews to assess the quality of the data published or have processes to ensure that only clean and accurate data is accepted, processed and made available to data consumers.

Our response

We recognise that trading data plays a very important role in financial markets and that market participants are consuming an increased amount and variety of data. It is vital for users such as asset managers to conduct their activities and we understand that, being an essential input to them, they perceive its cost as too high.

At the same time, the provision of good quality trading data that meets the evolving needs of users requires innovations by trading venues and data providers for the infrastructure necessary to provide and use the data. We appreciate trading venues' view that the pricing of trading data should be such that innovation is compensated and encouraged, and that pricing to demand can be efficient when it leads to a wider pool of users being able to afford the data.

Reflecting on the feedback received, we believe further analysis is appropriate to explore the extent to which:

- data costs are increasing charges to end users
- data costs are distorting asset manager decisions such as asset class choices and so limiting competition between asset managers
- data costs are limiting the efficiency of trading activity in a way that affects price formation
- current regulatory provisions for free delayed data are effective

We are therefore planning on conducting an information gathering and analysis exercise in Spring 2022, focused on the pricing of trade data, underlying costs, and the terms and conditions of the sale of trading data. Depending on the evidence, we could take action for example by issuing guidance where necessary. The evidence may also suggest that no intervention is needed.

Benchmarks

3.31 We asked users of benchmarks questions about the type and number of benchmarks they use, the pricing and quality of benchmarks and their evolution over time, ease of understanding and comparing pricing/licensing terms and any difficulties switching provider.

3.32 We also asked benchmark administrators how they ensure their offer meets the needs of users, how prices and service offering have evolved over time, and about the competitive landscape and vertical integration. Apart from some concerns from a small number of benchmark administrators around access to input data (see paragraph 3.49), we didn't hear concerns about vertical integration.

Feedback received

Users of benchmarks

Concentration and market dynamics

3.33 Benchmarks are used by a wide range of market participants, including investment managers, banks and clearing houses, typically:

- as a reference for index tracking funds

- to evaluate an active manager's performance (where the fund performance is measured against a selected index), or
- in structured products, in which case the pay out of the product is directly linked to the performance of the index.

3.34 Respondents typically use different types of benchmarks, including equity, fixed income, commodity, interest rate and FX benchmarks, and often use both standard and custom benchmarks. The number of benchmarks used varies across firms, but several respondents use hundreds of benchmarks. The number of benchmark administrators used also varies, from a minimum of 1 to a maximum of 28 across respondents. Benchmarks are sourced either directly via the benchmark administrator or through third-party vendors. The feedback in this section relates to the relationship users have with benchmark administrators rather than with vendors.

3.35 Users typically argued that competition in the provision of benchmarks is not working well. They usually said that in each asset class there are only a few leading benchmark administrators, most of whom may have market power. We heard that concentration is likely to be the result of high barriers to switching benchmarks – despite alternatives being often available.

3.36 Some barriers to switching are inherent to the switching process, while others are more directly linked to administrators' practices. The main inherent difficulties we heard about were:

- In each asset class there are a small number of established benchmark administrators that have brand awareness among end users. It is not realistically possible for asset managers to switch away from those and be commercially successful.
- Switching requires rebalancing the portfolio and thus incurring trading costs.
- A large effort is required, for example to get approval to switch at board meetings and communicate the decision to customers.
- Switching benchmarks regularly prevents the long-term assessment of performance against a specified benchmark.

3.37 The following two barriers to switching are instead more directly attributable to administrators' practices:

- Contracts with benchmark administrators usually include notification periods and exit fees.
- Benchmark administrators often require users to remove historic data at contract termination. If you then use the new benchmark to show history performance, this could have differences to data based on the original benchmark.

3.38 A few users also said that concentration has increased in recent years as a result of increased mergers among benchmark administrators, and this further strengthened their position and their ability to impose their terms.

Price and quality of benchmarks

3.39 Most respondents were generally happy with the quality of benchmarks. However, some asset managers would like benchmark providers to bear more risk of errors in their calculations, as currently they disclaim any liability for the accuracy or availability of their data. Asset managers also told us they have had to accept this because they don't have negotiating power against benchmark providers.

- 3.40** Most respondents said that benchmarks prices are too high and have been increasing in recent years. Typically, these respondents think that prices are not reflective of benchmark providers' costs and that price increases are not justified by improved service quality. High and increasing benchmark fees may be passed through to end investors meaning they pay too much for their investment products. We also heard from several benchmark users that high benchmark costs represent barriers to entry for new businesses and to expansion into new products for existing ones.

Contracts and licensing conditions

- 3.41** We wanted to understand what is driving the pricing dynamic. Several respondents said that complex licensing terms are driving higher charges, as benchmark providers have increased the number of licenses they charge for, and licensing increasingly depends on how the data is used. For example, multiple licensing fees may apply if the same data is used for different activities within the same business (eg product creation, tracking license, asset allocation, or active performance measurement) or in different locations or applications. Most users also said that licensing terms are restrictive with respect to client reporting and that they lack some standardisation of concepts and definitions. We also heard that the bundling of benchmarks by certain providers forces users to buy more indices than needed.

Responses from benchmark administrators

Market dynamics, quality and innovation

- 3.42** Benchmark administrators can be specialist benchmark providers, but they can also be exchanges, banks, asset managers, market data vendors, public bodies, or trade organisations. Some of them are vertically integrated firms that act as data generators, market data vendors and publication agents.
- 3.43** Most respondents said that competition between benchmark providers is fierce and there are many players in the market including standalone providers and banks and asset managers who are self-indexing (that is, that use their own in-house indices instead of indices from independent administrators). We heard the key factors typically competed on are price, quality, innovation and reliability. Some benchmark providers compete across asset classes and strategies, whereas other niche providers compete in specific asset classes.
- 3.44** Many respondents said that barriers to entry are low and that smaller providers offering comparable benchmarks have been gaining market share (especially offering ESG products). However, a couple of smaller and more recent providers noted that becoming a benchmark provider is a very expensive and time-consuming proposition. A couple of smaller disruptor benchmark administrators also said that industry consolidation had increased following mergers between existing benchmark providers and that this made it more difficult for small providers to compete and reduced choice.
- 3.45** Many benchmark administrators said that benchmarks, especially regulated data benchmarks, are easy to replicate and that switching takes place in the market. In terms of barriers to attracting users away from competitors, the same barriers brought up by users (see paragraph 3.36-3.37) were confirmed by several providers. A couple of providers also said that bundling of benchmarks or of technology with benchmarks are additional barriers.

Pricing of benchmarks

- 3.46** Benchmark administrators typically charge for their benchmarks based on the use made by the licensee (eg internal use, redistribution, creation and issuance of products). Some license types charge fixed fees, while in others the fees have both fixed and variable elements. Product licenses, which grant the right to issue financial products using the intellectual property of the indices, sometimes charge fees as a percentage of clients' assets under management.
- 3.47** Half of the benchmark administrators that responded said that the prices they charge had not changed significantly in the past 5 years or that price increases have been limited. Some respondents also argued that licensing fees fairly reflect the value customers gain from their benchmarks, and are appropriate to support a sustainable benchmark business, taking into account significant investments in innovation. To counter users' views, several respondents argued that client spend on benchmarks was increasing due to changing and increasing usage of benchmarks rather than higher fees.

How client needs are met

- 3.48** When asked how they ensure that client needs are met, most respondents said that benchmarks are typically constructed based on market demand, either responding to trends or specific client requests. Providers regularly consult with stakeholders and customers to understand their needs and to develop relevant and innovative products.

Access to input data

- 3.49** The majority of benchmark administrators said that they were not experiencing issues accessing input data which put them at a competitive disadvantage in the design and provision of benchmarks. A small number of respondents were concerned that, as exchanges increasingly have interests in downstream indices, access to input data necessary to compete with those index offerings may be at risk.

Our response

The issues raised by users of benchmarks suggest that competition may not be working well in the provision of benchmarks. We heard that benchmark prices have been increasing, that multiple barriers to switching exist, and that complexity of licensing terms and T&Cs makes it difficult to compare different providers' offers.

This indicates that competition problems may be causing users to pay prices above the competitive level, which potentially can translate into higher costs for end investors. Furthermore, there may be a lack of competitive pressure on benchmark administrators, which allows them to offer products of low quality or that do not meet users' needs, such as offering a bundle of benchmarks when the user needs only one or a few benchmarks.

We appreciate benchmark administrators' view that it is important that the pricing of benchmarks supports a sustainable benchmark business and reflects the investments providers make in innovation.

As part of our programme of work on wholesale market data, we will launch a market study on competition between benchmarks in

Summer 2022 to understand and, where appropriate, address the potential harms we have identified. The study will look at issues such as how benchmarks are priced, contractual terms and barriers to switching. When we launch the market study we will publish full details of the scope and timetable.

Market data vendors

- 3.50** Market data vendors play a key role in the distribution of trading data and other sources of market data. As part of the CFI, we wanted to hear from different types of market data vendors and their customers to understand the impact data vendors have on the value customers get from their data. We also wanted to understand whether concentration could indicate the market is not working well. Where data vendors do not face sufficient competitive pressures, they may be able to charge high prices and have little incentives to provide quality services and products.
- 3.51** Following on from the Wholesale Sector Competition Review (WSCR), we wanted to further understand the extent of and effects of bundling on users and competing providers and the impact data vendors have on overall trading data costs. We also wanted to explore whether vertical integration of vendors is causing competitive distortion at different points of the supply chain.
- 3.52** To better understand these areas mentioned above, we asked a broad set of questions to both users and providers of data vendors services. We asked market data vendor customers about the usage of different data products, the price and quality of market data and evolution over time, their understanding of contract terms, ability to buy products on a stand-alone basis, ability to switch and selection criteria behind choosing a particular vendor.
- 3.53** We asked market data vendors about the type of services offered, their relationship with trading venues, the impact of any vertical integrations, intensity of competition and how prices and service offerings have changed over recent years.

Feedback received

Users of market data vendors

- 3.54** Almost all users work with a range of market data vendors such as regulated trading venues, rating agencies, benchmark providers, research providers and terminal providers. Several users said that data provided by vendors is needed for regulatory compliance, for investment decisions, trading activity as well as post-trade custody and fund administration. Various types of data are by vendors such as market data provided by trading venues and APAs, benchmark data, credit rating data and reference/static data and instrument data.
- 3.55** We heard that users primarily choose data vendors based on whether they have the right dataset to meet business needs. Secondary considerations are price, quality and costs. Interestingly, a few respondents said that vendors at the lower cost range are competitive and innovative.

3.56 Some users told us that their use of market data has increased over the last 5 years. A wider range of datasets with expanded coverage are being used, and data is being sourced from specialist third party vendors. In particular, a few respondents noted the growth in ESG (Environment, Social and Governance) investments, and sustainable investment has led them to seek out specialist data vendors supplying ESG and alternative data. A minority felt very strongly that usage has remained the same.

Market dynamics

3.57 Typically, users suggested that there are weak competitive pressures amongst market data vendors. Users said that a few data vendors account for a high concentration of global market data revenues. The main reasons for high degrees of concentration cited by users included:

- Only a few vendors can meet user needs eg short supply of vendors able to provide high quality data or data needed for regulatory reasons.
- Low levels of substitutability of vendors because of different levels of quality, functionality and support making it difficult for users to switch to alternative providers.
- Increased mergers of trading venues and vendors in recent years increasing concentration of the market, which can in turn increase costs and lowering quality of product offerings across the wholesale value chain (both upstream and downstream services).

3.58 Most respondents told us they are not satisfied by products and services offered by market data vendors. Common complaints included: contracts being overly restrictive and not transparent, high fees, poor service and quality, bundling issues, and a lack of innovation in the market.

Price, quality, innovation of vendors' products and services

3.59 A small number of firms said they are happy with vendors in terms of price, innovation and quality of services. Others were of the view, however, that over the past 5 years, prices have been high and have increased without substantial improvements to quality and innovation of products.

3.60 Some respondents raised concerns around the quality of data provided by vendors and thought that at times standards were not being met. Customers as a result must do their own checks of data provided by vendors which can be onerous. Relatedly, a few respondents recommended the FCA to consider regulating data vendors to ensure standards are met, vendor fees are not excessively high and outsourcing restrictions are not overly restrictive.

Transparency of charges - contracts and licensing

3.61 Several users told us that complex and opaque licensing terms can lead to difficulty understanding or comparing charges across vendors. A few respondents told us that since vendors do not have to publish prices lists it is difficult to compare prices. Some told us that prices, terms and methodologies for which fees are being charged are not transparent year to year. Several firms told us they are presented with increases in costs upon renewal with no clear justification as vendors are not bound by regulations.

3.62 We heard that users can be charged multiple fees for slight variations in how the data is being used and 'use of service' terms within contracts being expanded to generate additional income. Typically, respondents said that vendors are charging different amounts or terms to different customers for similar services. Where attempts have

been made bring about greater transparency over vendor pricing, vendors have reacted with stricter confidential clauses in contracts.

- 3.63** One respondent raised concerns about the frequency of audits of market data vendors and the resource costs these imposed.

Bundling practices

- 3.64** Most users told us that bundling is a widespread practice among vendors. Respondents told us that they could not get many services or products on a standalone basis. In some cases, we heard this means that users are paying for data products that they do not use which adds to their costs. In line with the Wholesale Sector Competition Review (WSCR) we heard similar complaints about a bundling of chat instant messaging (IM) messages with other data services.

Barriers to switching

- 3.65** Users stated that switching data vendors is difficult because vendor prices are not publicly known, it takes resource and time, and there can be technical difficulties switching between systems. Also, in some cases where core services are bundled with additional data products this makes it more difficult for users to switch. We heard that complex contracts and bundling issues make it particularly difficult to switch between CRAs. While some vendors offer free trials, trial contracts can have restrictive terms making it difficult to switch mid-term. We heard that these contracts can be restrictive in terms of cancellation terms, contract length and user transfers.

Specific concerns about CRAs and affiliates

- 3.66** Several respondents thought the largest 3 CRAs collectively have market power, which is created and strengthened by certain market dynamics. A few firms have told us that regulations such as solvency II and capital regulation requirements (CRR) for banks and insurers mean that users favour the top three CRAs in the market. We heard that users are forced to buy ratings from all the big three providers because the 3 big CRAs do not cover the same products. Respondents have also said that alternative credit rating providers lack the scope and coverage to compete with the big providers making it difficult for users to switch to alternative credit rating agencies in the market.
- 3.67** Users of credit rating services thought this market power was leading to price increases ranging from 25-50% increases year on year. Although these increases can be negotiated and challenged, price reductions are set with other conditions such as multi-year agreements, percentage increases over the multi-year period or limiting usage cases. Similar to concerns raised about market data vendors more generally, we were told CRAs create additional products and services within contracts to justify price increases regardless of whether any enhancements were used in practice or not.

Providers of market data vendor services

- 3.68** The data services offered by vendors varies. Vendors can offer a combination of alternative data, closing prices data, corporate actions data, reference data, valuation, pricing, liquidity news, corporate data, asset-level data, market data and tools and charting and communication options. Start-up vendors are typically smaller and provide niche services relative to bigger players in the market and vertically integrated vendors.
- 3.69** Vendors told us that over the last 5 years demand for their services has increased, in part driven by the need to use data for regulatory compliance. A few vendors told us there is more competition in the market for alternative data for energy markets,

in response to increased demand. Vendors also tell us that their services and fees have moved from a per user model to a user case model. Our understanding is that previously users would be charged a standard price for a data product are now being charged according to their data usage.

Market dynamics

3.70 A selection of respondents told us that competition focuses on value-add services eg integration capabilities, speed, website/app functionality, excel modelling capabilities which provide a basis for distinguishing product offerings.

3.71 Vendors had mixed views about the level of competition and ease of switching between vendors. More established vendors said that there is a healthy degree of competition between the biggest vendors in the market because products are substitutable and they compete with each other as well as for clients eg trading venues.

3.72 On the other hand, start-up vendors argued that there are low levels of substitutability, sustaining the dominance of a few big players, which they considered was driven by:

- more established vendors not giving access to identifier codes needed to map across data to different providers
- clauses within contracts requiring users to delete user history upon termination of contracts
- vertically integrated vendors bundling products and services together

3.73 Start-up vendors also told us there are high barriers to entry making it difficult for new vendors to enter. Typically, they say that there are large time costs associated with building new datasets, technical costs, low financial returns, and limited commercial appetite.

Impact of vertical integration on non-vertically integrated vendors

3.74 A few respondents told us that vertically integrated vendors who operate as a trading venue and vendor have competitive advantages over non-vertically integrated vendors in terms of additional data inputs and a broader distribution network.

3.75 We heard some reports of vertically integrated vendors bundling together data services from different areas of their business (across the value chain) to the detriment of other non-vertically integrated vendors who do not provide services such as trading, regulatory reporting etc. Vertically integrated vendors, however, told us that they do not bundle any of its data services with a trading venue or a data product.

3.76 We also heard complaints from vendors saying they were not granted access to data needed for downstream products from vertically integrated vendors based on competition grounds. Some respondents speculated that there are wider 'conflicts of interest' – whereby vertically integrated vendors could potentially deny data providers access to data to distribute on reasonable commercial terms.

How data vendor products and services are sold

3.77 Generally, we have heard vendors find it difficult to negotiate with exchanges as they have limited negotiating power. Vendors told us that since trading venues have a monopoly over trading data, they can impose restrictive conditions around the redistribution of data. We were told that venues have standard contracts irrespective

of client size which may make it difficult for smaller companies that have not achieved the same scale to compete and may prevent new start-ups from entering the market.

3.78 In contrast to concerns made by users, vendors say that prices have not increased much but rather price models have become more sophisticated. They also said that higher market data prices are down to trading venues and not the actions of market data distributors as they do not set the transaction data fees. Consistent with the views from users of trading data, data vendors argued that exchanges have introduced new fees and charging models on existing products, charge multiple times for the same data and charge for delayed data when it should be provided for free despite a fall in technology costs. Some respondents told us that a lack of clarity around the interpretation of reasonable commercial basis rules drives higher fees.

Our response

Respondents have identified issues in the sale of market data which indicate that competition in the market may not be working well. Where data vendors do not face enough competitive pressures, they may be able to charge high prices and may face little incentive to provide quality services and products for clients across the wholesale value chain.

Specific concerns were raised in the CFI responses about CRAs and the sale of their data. The FCA has recently taken on supervisory responsibility for CRAs. As part of that remit, we are keen to understand further the markets in which CRAs sell their data and their pricing models.

As part of our package of work on wholesale data, we will launch a market study on competition in the sale of credit rating data by the end of 2022 to understand and, where appropriate, address the potential harms we have identified. The study will look at issues such as pricing and contractual relationships, barriers to entry and the scope for and level of innovation. When we launch the market study we will publish full details of the scope and timetable.

Data and advanced analytics

3.79 Wholesale markets participants are increasingly using data from non-traditional sources and new techniques to carry out advanced forms of analysis to make predictions and discover new insights. We asked respondents about their use of alternative data and advanced analytics to get a better understanding of potential benefits and risks to competition and broader regulatory risks.

Figure 2 - High-level definitions of alternative data and advanced analytics

<p>ALTERNATIVE DATA</p> <p>Non-traditional data generated outside issuing firms typically gathered by intermediaries such as data vendors who sell on packaged data to others including trading venues, exchanges, investment management firms. Often 'exhaust data' a by product of other business process.</p> <p>Examples: satellite imagery data, account-level data, location data, credit card transaction data, social media</p>	<p>ADVANCED ANALYTICS</p> <p>Umbrella term for high level methods such as machine learning, AI, and big data to enable you to get more insights from data.</p> <p>Examples: predictive analysis to make prediction on future trends, automated processes, sentiment analysis techniques such as natural language processing techniques</p>

3.80 In the CFI, we asked respondents how they use and envisage using alternative sources of data, impact of changes to firms' business models, barriers to using and accessing alternative data and advanced analytics.

Usage of alternative data and advanced analytics

- 3.81** Data and advanced analytics are increasingly used by a wide range of market participants including hedge funds, investment managers, banks and exchanges typically but not limited to the following activities:
- generating insights for investment opportunities, including using climate reporting for ESG investments
 - aiding risk management and governance controls
 - fulfilling regulatory activities
 - tailoring services to end users
- 3.82** The analytical techniques market participants are experimenting with include machine learning and artificial intelligence, big data, predictive analytics and new data processing techniques.
- 3.83** Most respondents said that alternative data and advanced analytics can help investment decisions, improve investment performance, risk management and build better client offerings and value for end-clients. Some respondents suggested that new types of data and analytics can generate additional insights to help increase returns for clients. For example, credit card spending data may help firms identify shifts in consumer behaviour to respond to. Geo-location data can help real estate investors get better insights into building locations.
- 3.84** Alternative datasets can also allow participants to gain a fuller picture of the investments and associated risks, such as the strength of company's investment in R&D and culture not picked up by traditional types of data. A few respondents said that in some cases alternative data is essential for some managers to understand complex investments such as ESG investments.

Impact on firms' business models

3.85 Asset managers, banks, trading venues and benchmark administrators told us recent changes to their business models have in part been driven by new analytical techniques. Investment firms say their investment strategies are becoming increasingly data driven across asset classes. Investment firms and banks told us that newer methods and usage of data can bring about efficiency in the form of automated processes, tailored tools/services, reduced investment costs, rapid entry and development of services. Trading venues said that developments in the use and value of regulatory data has created new sources of data for commercialisation.

3.86 As well changes in business models, there appears to be wider efficiencies associated with the use of alternative data and advanced analytics. Some exchanges have said that new datasets have the potential to make electronic price discovery on public markets more efficient in turn increasing liquidity for securities.

The provision of alternative data and advanced analytics

3.87 While respondents characterised the data vendor market and trading venues as being highly concentrated, the provision of alternative data and advanced analytics appears to be less concentrated and more competitive for the following reasons:

- Data analytics and the supply of alternative data is a high growth area which has experienced an increase in new entrants in recent years.
- Market data vendors provide services to each other as well as trading venues and exchanges.
- Technology such as the cloud computing lowers barriers to entry by providing firms with a 'pay as you go' model and makes it easier for vendors to partner up with other vendors in the market.
- The growth of new vendors supplying alternative data and advanced analytics suggests that firms are able to identify, develop and bring to market new data or approaches.
- Firms told us that those supplying alternative data and data analytics are not always part of a wider group so are incentivised to provide data to a wide client base, helping to ensure access to their services, unlike those supplying traditional financial data.

3.88 Overall, there appear to be examples of competition between firms supplying data and advanced analytics. Some of these newer datasets and techniques appear to be much more open for wider usage than traditional data. The entry of new providers suggests there are opportunities for further development in these markets.

Current and potential barriers to accessing and using data and advanced analytics

3.89 Most respondents including benchmark providers, investment firms, trading venues identified costs as the biggest barrier to using alternative data. This includes the costs associated with hiring data scientists and skilled personnel and adopting new technology. A few respondents said that high degrees of market power of data vendors supplying new datasets allows them to charge a high price.

3.90 Other barriers to using new datasets include resources needed to ensure data standards such as GDPR are met as data vendors are not currently regulated.

3.91 A few respondents said that while competition issues might not currently be present, they could materialise in the future because:

- if alternative data is only available to a few market participants who can afford it this might give rise to competitive advantages and unfair advantages over those able to access traditional data only
- restrictions in the form of exclusivity agreements or additional technical hurdles associated accessing data (not necessarily monetary)
- further consolidation in the market over the provision of alternative data and advanced analytics

Broader regulatory risks associated with the increased usage of technology

3.92 There were a varied set of responses on the main challenges and risks associated with increased use of technology by wholesale market participants, these include:

- herding risks whereby multiple algorithms follow the same market signal which can lead to flash crashes or the formation of bubbles in financial assets
- operational failures in trading systems and electronic platforms eg code bugs or failures of system components
- market integrity and confidence risks eg few participants trading on alternative data that is not widely available
- market abuse risks where algorithms behave in an unforeseen way that inadvertently causes market abuse
- pricing risks whereby algorithms start reacting to one another, this can present a mispricing risk
- lack of regulatory oversight where technology is increasingly being used

3.93 Some respondents recommended we put in place a regulatory framework which fits into the wider principle of "same risk, same activity, same regulation". They explained that focusing on regulating a technology or specific algorithm may not always address the underlying behaviours or practices within certain activities.

Broader regulatory risks associated with the use of alternative data and advanced analytics

3.94 We heard mixed views about the quality of control and governance of wholesale data. Some firms suggested that data vendors being outside the regulatory framework makes it incumbent on firms to do due diligence of data. Others suggested control and governance issues might arise if data cannot be transferred between participants in a controlled way, there is low levels of contractual compliance and a lack of transparency and replicability of data.

3.95 Most respondents are aware of the ethical considerations surrounding the usage and sharing of data. Newer data could give rise to new types of ethical risks. Image recognition and user location information could, for example, raise privacy concerns. Some firms noted that as wholesale markets do not require the data-sharing of individual's data there are different ethical considerations than retail markets. There may be ethical concerns in relation to the way in which advanced analytics is designed and used. Where data is not representative of a sufficient sample size advanced analytics may produce results that are unfair, inaccurate or incorrect results. Ethical

questions could also be raised in the process in which advanced analytics is designed, eg unethical methods to move a market in a particular way.

- 3.96** Ethical risks may increase in the future as a result of greater volume of data and the demand for advanced analytics increases. Typically, respondents mentioned concerns around data provenance. They also mentioned the greater complexity of techniques with the increased usage of machine learning techniques and the difficulty in explaining these techniques.
- 3.97** Most respondents said they have compliance teams and committees who understand and govern risks and ethics over the use of data and advanced analytics. To mitigate against risks surrounding algorithms, a few firms told us they have safety controls in place to override any algorithms if needed eg to safeguard investor assets. Other measures include a review process of how algorithms models work, governance controls, training teams to mitigate against biases when designing AI applications and putting in place supplier code of conducts to ensure that data standards are met by data vendors.
- 3.98** A few respondents noted how regulation such as MiFiD II has created issues for them. For example, benefits to impose requirements on trading venues to produce RTS27 reports on trade execution have not been fully realised because of poor functionality meaning that firms have to navigate reports themselves for a fee. We were also warned that inconsistencies around current MiFiD II rules creates uncertainty. Where there are inconsistencies in international approaches, this could lead to fragmentation and potential venue shopping by data providers wanting to escape disproportionate regulation to seek a competitive advantage.

Our response

There have been positive developments in the provision of alternative data and use of advanced analytics. However, there are potential competition harms and regulatory risks that we will need to monitor as the alternative data and advanced analytics market becomes more developed.

We received fewer responses to this section of the CFI. We plan to keep market developments under review. We have commissioned research to give us additional information on the nature and scale of alternative data usage and data analytics to get a better understanding of both the competition and broader regulatory risks and benefits that could emerge.

4 Our actions and next steps

- 4.1** Respondents have highlighted several areas where competition may not be working as effectively as it should do in these markets. We have considered these views and the need for us to take further work on the back of those responses.

Competition law considerations

- 4.2** Respondents told us about practices that in some circumstances could restrict competition. For example, some expressed views about the extent to which – or the price and terms on which – vertically integrated vendors provide access to data. Others told us of instances where purchasers had to buy certain data or services together with specified other services, rather than being able to buy the relevant data or services individually.
- 4.3** Very high pricing by a dominant firm can in certain circumstances amount to an abuse of a dominant position in breach of competition law. Equally, if carried out by a dominant firm, tying the sale of one product to the purchase of another product – or selling a bundle of products with a lower effective price than if each product is purchased individually – can in some circumstances amount to a competition law breach.
- 4.4** We will be further considering what we have been told about these kinds of practices and will follow up with individual firms where appropriate. More generally, we would remind firms that they should be aware of their obligations under competition law and ensure they regularly review their competition law risks.

Future work

- 4.5** In determining our next steps, we acknowledge the concerns raised by respondents in each area considered by the CFI.
- 4.6** Our package of work includes:
- **Trading data:** To better understand the extent to which high data costs and complex licensing terms and T&Cs create harm to users, we will conduct an information gathering and analysis exercise in Spring 2022, focused on the pricing of trading data, underlying costs, and the terms and conditions of the sale of trading data. Depending on the evidence, we could consider whether further guidance is needed to address the concerns identified, or if other policy options would be more appropriate. The evidence may also suggest that no further action by the FCA is needed. We will publish our findings later in the year.
 - **Benchmarks:** We will undertake a market study looking at how competition is working between benchmarks. The study will look at issues such as how benchmarks are priced, contractual terms and barriers to switching. We plan to launch the market study in Summer 2022 and will publish more details of the scope and timetable at that time.

- **Credit Rating Agencies:** We will undertake a market study looking at competition in the sale of credit rating data. The study will look at issues such as pricing and contractual relationships, barriers to entry and the scope for and level of innovation. We plan to launch the market study by the end of 2022 and will publish more details of the scope and timetable at that time.
- **Alternative data and advanced analytics:** We have commissioned research to provide us with additional information on the nature and scale of alternative data usage.

Annex 1

Call for Input Questions

Trading Data

Questions for users of trading data

- Q3.1** What type of trading data do you use/obtain directly from trading venues and APAs, and how do you use trading data?
- Q3.2:** Are you content with the price, quality, provision, coverage, speed and depth of trading data (or other data sold by trading venues or APAs)? If you are not satisfied with any of these elements, please explain why not and the impact this has on your business.
- Q3.3:** Do you consider any trading venues or APAs set of trading data a 'must have' for your business purposes? If so, please explain why. For example, is it linked to a liquidity threshold in the relevant financial instrument and/or to best execution requirements considerations?
- Q3.4:** For each data set you use, how have the trading fees, trading data costs and quality evolved over the last 5 years? What impact has this had on your business and your clients?
- Q3.5:** How easy are trading data pricing/licensing terms to understand and comply with? What, if any, do you find to be complex or restrictive and what impact does this have on your business?
- Q3.6:** Are you aware of trading venues or APAs charging different amounts to different customers for similar services? Please give specific examples and explain how these practices affect your ability to compete in the markets you operate in.
- Q3.7:** Please explain when you are charged for the use of delayed data.
- Q3.8:** To what extent do you think ESMA's suggested improvements to the RCB requirement will adequately constrain trading data pricing (see 3.23)? Are there other ways to ensure trading data prices are competitive?

Questions for providers of trading data (including trading venues and APAs)

- Q3.9:** Please explain the trading data you offer and how you ensure that the quality, speed, coverage and depth of trading data provided meets the needs of your users.
- Q3.10:** For each trading venue you operate, how have overall trading fees and trading data price levels, pricing policies and your service offering evolved over the last 5 years? Please explain reasons for changes in prices and other relevant dimensions.
- Q3.11:** Please describe your policy for charging for the use of delayed data, providing specific examples.
- Q3.12:** What factors do you take into account when setting your pricing policy? Do you face any constraints when doing so? Please provide reasons for changes in prices and detail how you ensure compliance with MiFID/MiFIR RCB requirements.
- Q3.13:** Please explain how you categorise types of user and the reasons for any price differentiation based on the categorisation of the user.

Benchmarks

Questions for users of benchmarks

- Q3.14:** Which type of benchmarks do you use in your business? How many benchmarks do you use, and how many administrators have you had agreements with, over the last 5 years?
- Q3.15:** Are you content with the price and quality of the benchmarks you use? If you are not satisfied with any of these elements, please explain why not and the impact this has on your business.
- Q3.16:** Do you consider any benchmarks a 'must have' for your business purposes? What factors do you consider in this assessment?
- Q3.17:** How have prices and quality evolved over the last 5 years across the types of benchmarks you use? What impact has this had on your use of benchmarks, on your business and your clients?
- Q3.18:** Are benchmark administrators' pricing/licensing terms established by benchmark administrators easy to understand and comply with? What terms, if any, do you find to be overly complex or restrictive and what impact does this have on your business?
- Q3.19:** Are you aware of benchmark administrators charging different amounts or imposing different contract terms, to different customers for similar services? Please give specific examples and explain the impact on your ability to compete in the markets you operate in.

- Q3.20:** How easy is it to compare and switch between benchmark providers? Please provide details on the benchmarks considered when choosing and possible hurdles affecting your ability to compare, choose and switch.

Questions for benchmark administrators

- Q3.21:** Please explain the benchmarks you offer and how you ensure that they meet the needs of your clients.
- Q3.22:** How have your prices and charging structures, volume and value of sales of services and innovation in your offerings evolved over the last 5 years? Please explain reasons for changes in prices and other relevant dimensions.
- Q3.23:** For your main benchmarks/indices, who are your key competitors, and to what extent are their products reasonably good substitutes for yours? How have competitive pressures affecting your business evolved over the last 5 years, including entry/exit of competitors?
- Q3.24:** What are the main barriers to attracting users away from your competitors? Please provide specific examples in your response.
- Q3.25:** Are you aware of input data providers charging different amounts or imposing different contract terms to different benchmark administrators for similar services? Please provide specific examples where possible.
- Q3.26:** Are there markets downstream from benchmark administration where you compete with customers of the benchmark(s) you supply?
- Q3.27:** What, if any, barriers to accessing input data put you at a competitive disadvantage in the design and provision of benchmarks? Please provide specific examples where this happens or may happen.

Market data vendor services

Questions for users of market data vendor services

- Q3.28:** Which market data vendor services do you use in your business and how has this evolved over the last 5 years?
- Q3.29:** Are you satisfied with the price, quality and level of innovation of market data vendors' offerings? If you are not satisfied with any of these elements, please explain why not and the impact this has on your business.

- Q3.30:** How have prices and quality evolved over the last 5 years across the types of market data vendor services you use? What impact has this had on your use of data, on your business and your clients?
- Q3.31:** Are you aware of market data vendors charging different amounts or imposing different contract terms on different customers for similar services? As a user are you, or have you been, at a competitive disadvantage as a result?
- Q3.32:** Are there any products and/or services that you needed/ tried to purchase from market data vendors on a standalone basis, but were not able to? What impact does purchasing a bundle have on your business?
- Q3.33:** How do you choose market data vendors? Do you use more than one, and if so why? How easy is it to compare the content and price of alternative packages before choosing which data package to use? How easy is it to switch providers?

Questions for market data vendors

- Q3.34:** Please explain the market data services you offer and how you ensure that they meet the needs of your clients.
- Q3.35:** How would you characterise the market data related market(s) in which you are active and what approximate share do you believe you hold in each market?
- Q3.36:** How have your prices and service offering for data packages, trading data and other data/analytical services evolved over the last 5 years? Please explain reasons for changes in prices and other relevant dimensions.
- Q3.37:** Who are your key competitors, and to what extent are their products reasonably good substitutes for yours? How have competitive pressures affecting your business evolved over the last 5 years, including entry/exit of competitors?
- Q3.38:** What is your contractual relationship and ability to negotiate with trading venues in relation to the pricing and provision of trading data?
- Q3.39:** To what extent is your firm vertically integrated? How does vertical integration affect your pricing and sales practices? Are there instances in which you are at a competitive disadvantage when you compete with providers offering bundled products or that are operating in different parts of the value chain. For example, a market data vendor running also an MTF or administering a benchmark?

Wider uses of data and advanced analytics in wholesale markets

Business models and opportunities

- Q4.1:** How are firms operating in wholesale markets using alternative data and advanced analytics, and for which particular activities or markets? How might this change in the future?
- Q4.2:** How much has your firm allocated to investments in data and advanced analytics over the next three years?
- Q4.3:** What are the potential benefits for firms and investors of the development of data and advanced analytics, now and in the future, and for which particular activities or markets? Please provide examples and where possible explain how the benefits are passed on to investors. How do you assess these benefits against the potential risks associated with the use of data and advanced analytics?
- Q4.4:** How have business models changed in light of developments in the use and value of data, and how might they change in the future? What affect might this in turn have on different financial markets?

Access to data and advanced analytics

- Q4.5:** What barriers make it difficult for firms to access data or access the technology necessary for analysing data, and how might this change in the future?
- Q4.6:** With reference to paragraph 4.25, do you agree there are situations where the use of data could lead to unfair advantages in wholesale markets which could:
- pose potential barriers to competition well; or
 - harm market integrity.
- Q4.7:** What factors do you consider are relevant in assessing whether the use of data may create unfair advantages in wholesale markets? For example, if the data are only available to one or a handful of firms or if some market participants are not able to secure sufficient financing to access data.

Impact of concentrated markets

- Q4.8:** How concentrated is the supply of data, or technology required to analyse data, to wholesale market participants? Please explain how this differs by data type and technology type and the impact on your business.

Information sharing, collusion and biases

Q4.9: Do you consider that the wider use of algorithmic solutions in wholesale markets could give risk to new types of market abuse or collusive behaviour? If you currently use these solutions, do you have any processes in place to manage these potential risks?

Data governance, controls and ethics

Q4.10: Are there any potential control or governance issues associated with these data that you currently use or think will be used in the future? Please provide examples and explain your reasoning.

Q4.11: For wholesale market participants that make use of advanced analytics, how does senior management ensure that it has sufficient understanding of how these algorithms, as an example of one tool, work in order to ensure that they are complying with their regulatory and competition law obligations?

In relation to ethical considerations

Q4.12a: Are there any potential ethical implications as a result of the use of new forms of data and advanced analytics in wholesale markets? Please give specific examples.

Q4.12b: What steps do you take to make sure that the data you use have been sourced legally and ethically?

Market stability

Q4.13: What challenges or risks (for example, in relation to market stability) are associated with the increased use of technology by wholesale market participants? For example, could this lead to the increased risk of herding like behaviours or excessive risk taking?

The role of regulation

Q4.14: What specific aspects of the regulatory regime unduly limit the way firms can use data and advanced analytics? How do these limit the benefits of data being realised by firms or consumers?

Annex 2

Abbreviations used in this paper

Abbreviation	Description
AMMS	Asset Management Market Study
APA	Approved Publication Arrangement
BMR	Benchmarks Regulation
CFI	Call for Input
CRA	Credit Rating Agency
CRR	Capital Regulation Requirements
CTP	Consolidated Tape Provider
ESG	Environmental, Social and Governance
ESMA	European Securities and Markets Authority
EU	European Union
FS	Feedback Statement
LRIC	Long Run Incremental Costs
MiFID	Markets in Financial Instruments Directive
MiFIR	Markets in Financial Instruments Regulation
OTC	Over the Counter
RCB	Reasonable Commercial Basis
SI	Systemic Internaliser
T&Cs	Terms and Conditions
WSCR	Wholesale Sector Competition Review

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