Mr Jay Clayton
Chair
Securities Exchange Commission
10 F Street, NE
DC 20549, Washington
USA

9 October 2019

Dear Mr Clayton,

Re: Discussions about Market Data

We write to you with regards to the ongoing discussion on market data provision and pricing.

The World Federation of Exchanges (WFE) is the global trade association for regulated exchanges and clearing houses. We represent over 250 market infrastructure offerings, spread across the Asia-Pacific region (~37%), EMEA (~43%) and the Americas (~21%). The three US stock exchange groups we represent operate 12 national stock exchanges, which represent 97% of daily trading volumes. With extensive experience of developing and enforcing high standards of conduct, WFE members support an orderly, secure, fair and transparent environment for investors and for companies that raise capital. We seek outcomes that support market transparency, consumer confidence and economic growth.

The WFE follows global and local discussions concerning market structure and business issues relevant to exchange groups, including the debates concerning the pricing and the provision of stock market data. We noted with concern some of the arguments that consumers of market data made during the October 2018 SEC roundtable on Market Data and Market Access, which we regard to be obscuring the true role of exchanges in producing market data. In light of this, and the coordinated interventions by these same stakeholders in other jurisdictions, we have produced a position paper setting out the value-enhancing activities that stock exchanges undertake as part of their mission and which create commercially valuable market data. It is appended here.

We welcome a debate about these issues that is appropriately balanced and accounts for the specific market structures and competitive environments in which our members operate. We note, for example, that the US market is highly fragmented and competitive, with 13 national securities exchanges and over 30 alternative trading system platforms.[1]

US retail investors generally have access to SIP market data through their brokerage accounts or other digital platforms and, for mutual fund investors, exchange fees may represent as little as one-tenth of one basis point.[2] Part of these costs go towards incentivising market participants to provide liquidity to the market, leading to tighter spreads and a lower overall cost of investment on US equity markets. US investors have furthermore readily adopted innovations such as low-cost ETFs—products traded on exchanges, powered by the price formation that occurs on-exchange.

The WFE and its members stand ready to work with US authorities to facilitate a balanced, coherent and fact-based dialogue about these issues, and remain at your disposal if we can be helpful to the SEC as it seeks to do this.

Thank you for your consideration of this.

Yours sincerely,

Nandini Sukumar

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Chief Executive Officer

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[1] James J. Angel, Retail investors get a sweet deal: The cost of a SIP of stock market data, Georgetown University, October 2018.

[2] Phil Mackintosh, The Big Picture on the Data Debate, Nasdaq, August 2019.

Market Data Pricing – a WFE update

July 2019

Introduction

What should the neutral observer make of the market for information on stock prices? In particular, what are the public-policy questions, now that regulators in the US and EU are considering the role such data plays in effective securities markets? The World Federation of Exchanges (WFE) believes that the key lies in the nature and role of the data; and of the stock exchanges that create it, successfully supporting $70 trillion of listed businesses in the process[1].

This note builds on a position set out by the WFE earlier this year: that stock-market data exists only because exchanges create it; and has value because of the use that market participants can make of it and because of the care that exchanges take in creating it, consistent with their role in society as well as the economy and the financial markets that serve it[2]. We stand by that position and, in this note, expand on it, in the interests of a more informed public debate about which types of stock-exchange data have most value and why. And we discuss the unique combination of activities that exchanges carry out – things such as market supervision and ensuring cyber resilience – which ensure the integrity of the data and enhance the crucial function of bringing together otherwise fragmented trading.

We believe policy makers should resist the more confusing and self-interested arguments about data that currently crowd the airwaves; and we welcome the more structured, complete and proportionate analysis that regulators and their international bodies will in principle bring. Our objective here is to encourage an open, honest and public debate, partly because there is also a wider issue at stake: expanding participation in capital markets, and recognising the role exchanges play and the benefits that this unique form of enterprise has for society.

Stock market data consists of information on the price at which shares are trading; or have recently traded; or appear likely to trade in the near future. In all cases, it is data that comes into existence only because the exchange performs a highly specialised and crucial role, adhering in the process to even higher standards than the rest of the financial system. By acting in this way as a trusted, independent and efficient organiser of market activity, the exchange becomes the producer of a fair, accurate and reliable price for shares. And, not being a party itself to share transactions, the exchange is free from the conflicts that exist in the rest of the industry (and which necessitate laws on issues such as best execution and market abuse). In this note, we expand on the combination of things that exchanges do to ensure that their markets function effectively, such that the data is accurate and reliable and therefore of commercial value, especially to financial-services companies.

Before addressing that, however, it is important to recognise that some forms of stock-market data that are commercially particularly valuable – and that businesses consumers choose how much of it to consume, depending on their business model. But there is also a balancing act going on. Exchanges universally recognise the public good[3] that they provide in ensuring price discovery and support the provision of free data to the general public.

So, as things stand, anyone can see the most basic, fundamental information, either immediately or after a short delay. Want to check what some interesting shares are worth at the end of the day? It's about as difficult (and, unless intermediaries impose a charge, as costly) as checking the weather forecast or the status of the public transport system. For a long-term retail investor, such free and easily accessible information will the typically be more than sufficient.

On the other hand, the price of higher-value, more granular information – up-to-the micro-second share prices, for example, or 'depth-of-book' indications of future appetite – can be set by demand from market professionals. In other words, the exchange creates all the data and then sells only those types for which there is a commercial appetite. And – unsurprisingly – that commercial appetite only exists because there are market participants who can use the information contained in the data to further their business interests and make money. The fact that there is now more information to exploit (because share prices can now update at approaching one million times a second) simply means the potential gains are correspondingly greater. The more such data points you have, the greater value you can extract, by having a more continuous, multi-dimensional and granular picture.

By selling data to those who wish to use it in their trading business, the exchange facilitates 'informed' market-making and trading, thereby oiling the wheels of share transactions more broadly. But at the same time, the exchange is pricing a rare good at its value, ie, its value to those commercial users of it. No deviation from this market-value principle should ever be undertaken, so as to avoid unnecessary distortions or inefficiency within the rest of the financial services business. What justification can there be for handing a commercial advantage to a category of intermediaries, to the detriment of the neutral exchanges that safeguard the interests of the wider share-market eco-system?

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[2] January 2019 WFE statement **–** also included as an Annex to this document – clarifying the nature of stock market data.

[3] Public good refers to the wider social purpose that stock exchanges have and, as this paper makes clear, does not mean valuable goods and services are provided for free.

Given what we have outlined about who values which form of data and why, a bigger question then emerges, concerning the *total*, all-in cost of investing as borne by some end-users accessing exchanges via intermediaries. Exchanges do their part to keep this down, by staying efficient. But in any market, there are other parts of the chain where charges can creep in, resulting in a social cost as well as a financial one.

Meanwhile, pricing data correctly has a practical benefit, in that it provides a degree of stability and predictability to the exchange's own finances, promoting continuity and sustainability in its (economically and socially important) business. And note that charging a 'going rate' for data supports the totality of what the stock exchange does – notably free basic data but also price discovery and everything that goes into ensuring its integrity.

The message is clear. Not only is there no conflict between selling data and delivering a safe and efficient market: the two are in fact mutually reinforcing. (Economists actually characterise data and trade execution as 'joint products', rather than one being the primary product and one secondary. Stock-market data, in other words, is as integral to what an exchange is and does as the ability to buy or sell shares.) Trading firms consume stock exchanges' data precisely because of the exceptionally high standards involved in its production and the way that maximises participation in price 'discovery'. (Also consuming the data are secondary-market trading venues that compete with exchanges for transaction volume – a sure sign that the exchange data is even more valuable than ever.) Share-trading data, in some forms at least, is a premium product.

Recent regulatory interest rightly reiterates the importance of equality of access to stock market data, as well as notions of reasonableness. For example, a May 2019 SEC staff guidance paper includes a condition that access be non-discriminatory. Given the potential power afforded to market participants by such data, it is especially important that it not be *under*-priced.

In relation to this SEC paper, we also note that it does not rewrite economics text books or for that matter statute. SEC Chairman Clayton clarified[4] that the paper "has no legal force or effect: as it states, it does not alter or amend applicable law, and it creates no new or additional obligations for SROs or the Commission".

As regards the key public policy questions that do exist, the WFE suggests the following constitute a good start. It will itself be looking more closely at them over the coming months and believes that it is incumbent on all stakeholders to do so:

- Who is using which stock-market data and for what purpose(s)?
- If data is priced at less than its market value, what distortions and inefficiencies will this create in the rest of the financial services industry?
- Are regulatory interventions related to market-data pricing beneficial to the market?
- Should exchanges subsidise the profit margins of other parts of the securities industry?
- How much does intermediation affect the price paid by companies for stock-market data?
- What is the total cost of accessing financial investment services?
- Is there equal opportunity of access to data?
- Does more information provide more opportunity for intermediaries to profit?
- Who has the best interests of the market at heart and the most credible record in terms of combined integrity and efficiency?

In the rest of this note, we focus on the combination of measures, processes and activities that exchanges undertake to ensure the efficient and reliable price formation that makes stock-market data commercially valuable.

[4] Statement clarifying the nature and status of recent SEC staff guidance.

Market Data and Its Value

Pre- and post-trade data licensed by stock exchanges is highly valuable because it is of unrivalled quality. So, various parties base their own valuable businesses on it. What ensures the quality of the data and therefore its commercial value?

Stock exchange data is the result of the mechanisms exchanges develop, implement and operate and which ensure an efficient and orderly market. Exchanges create an environment of addressable interaction of supply and demand under defined rules and market surveillance, enabling reliable outcomes on transactions and transparency alike. The price formation process, which is enabled by the trading environment developed by each exchange (including liquidity incentivization) results in joint products: trade execution and data. The fully rules-based environment in which trading happens contains many elements which support effective trading and provides control mechanisms to ensure the activity operates fairly and has appropriate oversight to discourage conflicted and abusive behaviours. This environment ultimately supports economic development through the raising and allocating of capital to businesses large and small alike.

The data licensed by stock exchanges is used by commercial companies to make profits. Moreover, as exchanges license data on a non-discriminatory basis, competing (non-exchange) venues are able to use the information generated by exchanges to fuel their own trading-venue business (based on the price formation that takes place on exchange). Data vendors add analytics to exchange data to enable investors to evaluate the performance of their portfolios. Amongst the entities building businesses based on exchange data are brokers, inter-dealer brokers, institutional investors, index providers and data vendors.

The production and dissemination of market data is inextricably linked to the wider exchange and its valuable functions for investors and the economy.

The Stock Exchange and its Functions

Stock exchange data is a joint product of trading, created by the price formation process on exchanges. This note summarises key features of this crucial, rules-based infrastructure. In other words, it highlights the multi-faceted and coherent system of standards that allow investors, issuers and dealers to have confidence in the ‘price formation’ that a stock exchange undertakes.[5]

Exchanges are all subject to multiple forms of authorisation and legislation which mandate how the venue should operate to ensure an orderly market and provide for investor protection and the relevant level of transparency. This can take a number of forms, from direct oversight by a statutory authority, to supervision by a self-regulatory organisation (SRO), with clearly defined powers and responsibilities. The framework around listing requirements is one example of how jurisdictions vary in this regard. Whether this function is undertaken by the exchanges itself or by the regulator does not alter the fact that a standard exists, thereby reducing the assessment burden on all individual participants, as well as contributing to investor protection.

Regulators grant exchanges authority to operate their markets based on transparency and integrity.

- **Transparency** also includes information provided to investors on the products traded – and initial and on-going disclosure obligations in the case of issuers.

- **Integrity** entails a reliable process that leads to a trade and to an official price. Standardised and clear trading processes and equal opportunity of trade with all participants are amongst the conditions necessary for an undisputable traded price. There are commitments and obligations on the exchanges to maintain and report on a regular basis based on these standards.

An important facet of the rules under which an exchange operates is that they themselves cannot be changed without following a prescribed process, including any external regulatory scrutiny that may be required. This means that the environment for trading is not only sound but predictable and consistent over time.

A given exchange may be the principal location for listings in its own country which may equally hold true for secondary-market activity. However, it is often the case that competing venues also operate in secondary market activity and, furthermore, exchanges must often in practice compete not only for this secondary market activity, but also for initial public offerings (IPOs) on a global basis. Such competition results in market discipline that acts as a complement to regulation.

The headline aspects of the rules-based environment are as follows:

1. Legal organisation, governance

[5] These standards are also a major component of the criteria that exchanges must satisfy in order to qualify for membership of the WFE. In other words, they constitute a consistent, global threshold of efficiency and integrity.

2. Regulatory framework
3. Equal treatment for market access
4. Listing & admission to trading
5. Trading
6. Technical infrastructure, including security and cyber resilience
7. Supervision, surveillance & enforcement
8. Dispute resolution & complaint handling

As alluded to above, while each item is important in its own right — and requiring of significant, continuous attention — what is even more important is the combined effect, ultimately meaning that the matching of buyers and sellers leads to a reliable and valuable stream of data information.

1. **Legal organisation, governance**. This is a necessary, threshold condition, even if other factors (e.g., those set out below) are what principally distinguish an exchange from other forms of financial service. The governance arrangements must be tailored to the specifics of the exchange business. The organisation is recognised by the statutory supervisor as an exchange. Market participants / stakeholders are in effect part of the governance, as they are usually consulted before trading and listing rules are submitted to regulators for approval.

2. **Regulatory framework.** The rules and related supervision in a jurisdiction will cover not just the operation of the exchange, but the functioning of the securities and related markets more broadly, including any derivatives (whether listed or OTC). Listing and trading on an exchange involve the most structured and intensive form of obligations to operate to high standards and provide transparency, which is often not fully replicated in other types of trading models.

3. **Equal treatment for market access.** Membership in an exchange comes with responsibilities as well as rights and the membership criteria set these out. The rules ensure defined, non-discriminatory access provisions, as well as expected standards of behaviour and operation on the part of participants. Among other things, members must have appropriate systems and controls, relating to their own actions as well as their customers' to ensure they comply with the exchange rules. Becoming a member of an exchange is by definition an open and objective process; it is rules-based and any participant fulfilling the criteria will become a member of the market and able to enjoy the benefits as well as the obligations attached to it. This entity will then be able to trade in a secure environment with fair price determination for the listed products.

4. **Listing & admission to trading**. Irrespective of which entity acts as gatekeeper, the key point is that there are criteria to be met, initially as a pre-condition for listing and subsequently in the form of ongoing disclosure obligations. Thus, companies must keep the market updated on material developments. This ensures that the instruments available to the investing public meet the highest standards of transparency. The exchange may, of course, also support the calculation of indices or benchmarks, which can provide an important point of triangulation vis-à-vis individual shares, as well as supporting complementary products that lead to what economists refer to as a more 'complete' market. Furthermore, as regulation tries to catch up with the development of digital assets and regulation, the role of a trusted party in determining what products to make available to the investing public is arguably even more important. The prices formed for shares are reputable; that is one of the key reasons why they are so widely used by the ecosystem beyond the exchange, e.g. for valuation purposes, for OTC trading or even for evaluating similar but less traded assets.

5. **Trading**. While IT is important to how trading is undertaken, the key issue is a transparent rulebook that delivers an effective and orderly market structure facilitating the matching of buyer and seller. The exact mechanism(s), or 'market microstructure' (auctions, continuous trading and so on), may vary by exchange. But the same principle applies consistently, in that there are strict rules as to which orders will get dealt with when, taking into account the nature of the order (for instance, whether or not it is contingent on a specified price move). Where relevant, an exchange will also apply mechanisms to maintain orderly trading, addressing instances of excessive price volatility. At all times, the exchange will ensure an appropriate degree of pre- and post-trade price transparency, including the provision of free information after a short delay. And for those clients that find exchange market data valuable, exchanges license that data on a non-discriminatory basis and in a variety of different formats to meet their needs.

6. **Technical infrastructure**. This in practice refers mainly to the IT systems that enable an exchange to function, both hardware and software. That notably includes any trade-matching engine – the functionality that determines which seller is matched with which buyer and in which sequence for any given trade. (Some of this trading activity has been occurring at increasing speed, with the aid of powerful technology, and which exchanges have accommodated, thereby maximising diversity in terms of style and type of participation.) Also relevant are communications links between the exchange and its customers. Whatever the level of sophistication of the IT (which will be a function of the market the exchange serves), all the above must be operationally robust and secure, with cyber resilience being a critical component of the modern exchange's defences, along with 'redundant' or back-up technology. (Market infrastructure carries huge symbolic value as well as day-to-day business importance, making it a major target for attack. At the same time, physical security remains important, not least of the technical environment.) Surveillance of market activity is also dependent on effective IT, which may include artificial intelligence applications. Exchanges police access to the trading environment to prevent misleading signals from entering the exchange and ensure the security of messaging and encryption.

7. **Supervision, surveillance & enforcement**. Trading by market participants on exchanges is subject to particularly close scrutiny, as is their compliance with the rules of the venue, which is backed by powers to sanction anything which threatens the integrity of trading. Those threats may include deliberate actions, such as market abuse, and errors, such as ‘fat-finger’ trades.

8. **Dispute resolution & complaint handling**. The exchange acts as (or will ensure the participation of) a neutral arbiter in cases of disagreement, thereby contributing to a more orderly and fair market, which all parties can trust and rely on.

Conclusion

All of these aspects contribute to creation of the two, inextricably linked ‘joint’ products of the stock exchange: trading and market data. Exchanges significantly and continuously improve their technological infrastructure, to maintain a secure and trustworthy environment for the safe execution of transactions, resulting in high quality market data (which in turn prompts further transactions, creating a ‘virtuous circle’). That unique environment includes a well maintained order-matching engine that supports price formation (bringing together what would otherwise be fragmented bids and asks, in a well defined and ordered fashion). Exchanges also enhance liquidity, by offering a judicious balance of incentives for market participants. And exchanges retain qualified and trustworthy people to develop and police the markets. Because of these activities, not just individually but collectively and in aggregate, exchanges perform an economically vital role while create products of great commercial value.

Annex: January 2019 WFE Statement clarifying the nature of stock-market data.

The WFE has noted that the topic of stock market data – information on the price at which shares are trading – periodically attracts commentary. The key facts do not change over time but are not always kept in mind in such commentary. This statement highlights the most significant of these:

- It is stock exchanges that create information ('data products') about the price at which shares are trading. This information would not exist but for the role played by exchanges.
- Exchanges create this information as an integral part of the process of bringing together buyers and sellers. (This is why it is termed a 'joint product'.)
- Exchanges also perform a number of other crucial functions in support of this process, such as market surveillance and the development and operation of information technology, thereby ensuring the integrity of the information.
- The quality of the information that exchanges create means it has an economic value. The price at which information is licensed is accordingly a commercial matter for each individual consumer and exchange.
- Free information is typically available to consumers who are willing to wait a short time for it.

The WFE stands ready to assist any regulators who are concerned about the role and nature of market data.

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This note builds on a position set out by the WFE earlier this year: that stock-market data exists only because exchanges create it; and has value because of the use that market participants can make of it and because of the care that exchanges take in creating it, consistent with their role in society as well as the economy and the financial markets that serve it[2]. We stand by that position and, in this note, expand on it, in the interests of a more informed public debate about which types of stock-exchange data have most value and why. And we discuss the unique combination of activities that exchanges carry out – things such as market supervision and ensuring cyber resilience – which ensure the integrity of the data and enhance the crucial function of bringing together otherwise fragmented trading.

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The production and dissemination of market data is inextricably linked to the wider exchange and its valuable functions for investors and the economy.

The Stock Exchange and its Functions

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Exchanges are all subject to multiple forms of authorisation and legislation which mandate how the venue should operate to ensure an orderly market and provide for investor protection and the relevant level of transparency. This can take a number of forms, from direct oversight by a statutory authority, to supervision by a self-regulatory organisation (SRO), with clearly defined powers and responsibilities. The framework around listing requirements is one example of how jurisdictions vary in this regard. Whether this function is undertaken by the exchanges itself or by the regulator does not alter the fact that a standard exists, thereby reducing the assessment burden on all individual participants, as well as contributing to investor protection.

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An important facet of the rules under which an exchange operates is that they themselves cannot be changed without following a prescribed process, including any external regulatory scrutiny that may be required. This means that the environment for trading is not only sound but predictable and consistent over time.

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The headline aspects of the rules-based environment are as follows:

1. Legal organisation, governance

[5] These standards are also a major component of the criteria that exchanges must satisfy in order to qualify for membership of the WFE. In other words, they constitute a consistent, global threshold of efficiency and integrity.

2. Regulatory framework
3. Equal treatment for market access
4. Listing & admission to trading
5. Trading
6. Technical infrastructure, including security and cyber resilience
7. Supervision, surveillance & enforcement
8. Dispute resolution & complaint handling

As alluded to above, while each item is important in its own right — and requiring of significant, continuous attention — what is even more important is the combined effect, ultimately meaning that the matching of buyers and sellers leads to a reliable and valuable stream of data information.

1. **Legal organisation, governance**. This is a necessary, threshold condition, even if other factors (e.g., those set out below) are what principally distinguish an exchange from other forms of financial service. The governance arrangements must be tailored to the specifics of the exchange business. The organisation is recognised by the statutory supervisor as an exchange. Market participants / stakeholders are in effect part of the governance, as they are usually consulted before trading and listing rules are submitted to regulators for approval.

2. **Regulatory framework.** The rules and related supervision in a jurisdiction will cover not just the operation of the exchange, but the functioning of the securities and related markets more broadly, including any derivatives (whether listed or OTC). Listing and trading on an exchange involve the most structured and intensive form of obligations to operate to high standards and provide transparency, which is often not fully replicated in other types of trading models.

3. **Equal treatment for market access.** Membership in an exchange comes with responsibilities as well as rights and the membership criteria set these out. The rules ensure defined, non-discriminatory access provisions, as well as expected standards of behaviour and operation on the part of participants. Among other things, members must have appropriate systems and controls, relating to their own actions as well as their customers' to ensure they comply with the exchange rules. Becoming a member of an exchange is by definition an open and objective process; it is rules-based and any participant fulfilling the criteria will become a member of the market and able to enjoy the benefits as well as the obligations attached to it. This entity will then be able to trade in a secure environment with fair price determination for the listed products.

4. **Listing & admission to trading**. Irrespective of which entity acts as gatekeeper, the key point is that there are criteria to be met, initially as a pre-condition for listing and subsequently in the form of ongoing disclosure obligations. Thus, companies must keep the market updated on material developments. This ensures that the instruments available to the investing public meet the highest standards of transparency. The exchange may, of course, also support the calculation of indices or benchmarks, which can provide an important point of triangulation vis-à-vis individual shares, as well as supporting complementary products that lead to what economists refer to as a more 'complete' market. Furthermore, as regulation tries to catch up with the development of digital assets and regulation, the role of a trusted party in determining what products to make available to the investing public is arguably even more important. The prices formed for shares are reputable; that is one of the key reasons why they are so widely used by the ecosystem beyond the exchange, e.g. for valuation purposes, for OTC trading or even for evaluating similar but less traded assets.

5. **Trading**. While IT is important to how trading is undertaken, the key issue is a transparent rulebook that delivers an effective and orderly market structure facilitating the matching of buyer and seller. The exact mechanism(s), or 'market microstructure' (auctions, continuous trading and so on), may vary by exchange. But the same principle applies consistently, in that there are strict rules as to which orders will get dealt with when, taking into account the nature of the order (for instance, whether or not it is contingent on a specified price move). Where relevant, an exchange will also apply mechanisms to maintain orderly trading, addressing instances of excessive price volatility. At all times, the exchange will ensure an appropriate degree of pre- and post-trade price transparency, including the provision of free information after a short delay. And for those clients that find exchange market data valuable, exchanges license that data on a non-discriminatory basis and in a variety of different formats to meet their needs.

6. **Technical infrastructure**. This in practice refers mainly to the IT systems that enable an exchange to function, both hardware and software. That notably includes any trade-matching engine – the functionality that determines which seller is matched with which buyer and in which sequence for any given trade. (Some of this trading activity has been occurring at increasing speed, with the aid of powerful technology, and which exchanges have accommodated, thereby maximising diversity in terms of style and type of participation.) Also relevant are communications links between the exchange and its customers. Whatever the level of sophistication of the IT (which will be a function of the market the exchange serves), all the above must be operationally robust and secure, with cyber resilience being a critical component of the modern exchange's defences, along with 'redundant' or back-up technology. (Market infrastructure carries huge symbolic value as well as day-to-day business importance, making it a major target for attack. At the same time, physical security remains important, not least of the technical environment.) Surveillance of market activity is also dependent on effective IT, which may include artificial intelligence applications. Exchanges police access to the trading environment to prevent misleading signals from entering the exchange and ensure the security of messaging and encryption.

7. **Supervision, surveillance & enforcement**. Trading by market participants on exchanges is subject to particularly close scrutiny, as is their compliance with the rules of the venue, which is backed by powers to sanction anything which threatens the integrity of trading. Those threats may include deliberate actions, such as market abuse, and errors, such as 'fat-finger' trades.

8. **Dispute resolution & complaint handling**. The exchange acts as (or will ensure the participation of) a neutral arbiter in cases of disagreement, thereby contributing to a more orderly and fair market, which all parties can trust and rely on.

Conclusion

All of these aspects contribute to creation of the two, inextricably linked 'joint' products of the stock exchange: trading and market data. Exchanges significantly and continuously improve their technological infrastructure, to maintain a secure and trustworthy environment for the safe execution of transactions, resulting in high quality market data (which in turn prompts further transactions, creating a 'virtuous circle'). That unique environment includes a well maintained order-matching engine that supports price formation (bringing together what would otherwise be fragmented bids and asks, in a well defined and ordered fashion). Exchanges also enhance liquidity, by offering a judicious balance of incentives for market participants. And exchanges retain qualified and trustworthy people to develop and police the markets. Because of these activities, not just individually but collectively and in aggregate, exchanges perform an economically vital role while create products of great commercial value.

Annex: January 2019 WFE Statement clarifying the nature of stock-market data.

The WFE has noted that the topic of stock market data – information on the price at which shares are trading – periodically attracts commentary. The key facts do not change over time but are not always kept in mind in such commentary. This statement highlights the most significant of these:

- It is stock exchanges that create information (‘data products’) about the price at which shares are trading. This information would not exist but for the role played by exchanges.
- Exchanges create this information as an integral part of the process of bringing together buyers and sellers. (This is why it is termed a ‘joint product’.)
- Exchanges also perform a number of other crucial functions in support of this process, such as market surveillance and the development and operation of information technology, thereby ensuring the integrity of the information.
- The quality of the information that exchanges create means it has an economic value. The price at which information is licensed is accordingly a commercial matter for each individual consumer and exchange.
- Free information is typically available to consumers who are willing to wait a short time for it.

The WFE stands ready to assist any regulators who are concerned about the role and nature of market data.