State Street Corporation

20 Churchill Place
Canary Wharf
London E14 5HJ

T +44 20 3395 2500
F +44 20 3395 6350

www.statestreet.com

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Via electronic submission to the Joint Committee
of the European Supervisory Authorities

Dear Sir/Madam,

Joint Committee Discussion Paper on the Use of Big Data by Financial Institutions

State Street Corporation appreciates the opportunity to comment on the Joint Committee Discussion Paper on the use of Big Data by financial institutions.

State Street Corporation (NYSE: STT) is one of the world's leading providers of financial services to institutional investors, including investment servicing, investment management and investment research and trading. With $29 trillion in assets under custody and administration and $2.47 trillion[1] in assets under management as of December 31, 2016, State Street operates in more than 100 geographic markets worldwide, including the US, Canada, Europe, the Middle East and Asia. For more information, visit State Street's website at www.statestreet.com.

As an active industry participant in the data and analytics environment we make use of Big Data sources to help our clients utilize and benefit from their data. Based on our experience we believe there are two areas of particular concerns that the Joint Committee should bear in mind when considering developing any regulatory framework for Big Data.

Firstly, we believe there is a need for greater consistency in the application of rules relating to data governance and management. Specifically, we believe there is scope for regulators and industry participants to better promote standards, frameworks and methodologies that enable firms to apply a consistent approach to determining the sensitivity of combining more varied and complex data and information which is typical of many Big Data implementations. Such an approach will give firms the necessary confidence in the regulatory framework in which they operate as well as to ensure industry participants are operating on a level playing field.

Secondly, there are significantly differing levels of regulatory protection afforded to participants operating in the B2B environment when compared to the B2C environment. Specifically, we believe systemically-important industry data providers should not be allowed to create an uneven playing field by charging external clients for data that they give to affiliated businesses for free or at a substantial discount, since this puts other industry participants at a significant competitive disadvantage.

[1] *AUM reflects approx. $30.62 billion (as of December 31, 2016) with respect to which State Street Global Markets, LLC (SSGM) serves as marketing agent; SSGM and State Street Global Advisors are affiliated.*

Questions

1. Do you agree with the above description of the Big Data phenomenon? If not, please explain why. Please also mention whether you consider that other characteristics are relevant to understanding the use of Big Data.

It is important to recognise that the use of the three "V's" to describe the Big Data phenomenon is a very broad definition and whilst it is a useful tool to help shape the discussion around Big Data we do not believe it should serve as a basis upon which to develop any regulatory outcomes. Any regulatory framework for Big Data, if it is indeed needed, should be based on much tighter definitions to avoid the prospect of overly prescriptive regulation and given that the term 'Big Data' itself is interpreted differently by different people.

In relation to the scope of a possible regulatory framework, we believe the European Supervisory Authorities (ESAs) need to address both B2C and B2B uses of Big Data. Whilst the protection of consumer interests should of course be a priority for the supervisory authorities, the differing levels of regulatory protection afforded to participants in the B2B environment, when compared to the B2C environment, are so significant that operating in the B2B environment is a far more challenging space than B2C, and we would like to see this addressed by the European Supervisory Authorities.

Further to this we would question whether it is possible to limit discussion of the regulatory framework to solely Big Data rather than about data standards, management and governance more generally since Big Data is essentially only heightening some of the benefits and risks that already in exist in the use of data.

3. Do you offer/are you considering using Big Data tools as part of your business model? If so, please briefly describe: i) what type of entity you are, e.g., long established, start-up, a product provider, an intermediary; ii) the service you provide; iii) the nature of your clients; iv) your business model; v) whether the Big Data tools/strategy were developed by an external company or internally and whether you have related agreements with other entities (including non-financial entities)23; vi) what are the types of data used (personal, anonymised, user data, statistical data etc.) sources of data; and vii) the size of your Big Data related activity and/or forecast activity (e.g. to what extent are business decisions already taken on the basis of Big Data analysis; what other business actions could be based on Big Data in the future)?

State Street formed a data and analytics unit called Global Exchange (GX) in 2013. GX's purpose is to help State Street's clients harness their data to improve investment performance, manage risk and compliance, attract assets and reduce costs. Some of GX's products leverage Big Data type sources such as web scraping of online price information or news articles. Most of these Big Data products are provided by partners, some small/start-up in nature and others more established, with GX providing distribution of these products to State Street's client base or using these products in derived products developed by GX.

5. Do you consider there are (non-regulatory) barriers preventing you (or which could prevent you in the future) from collecting and processing data? Are there barriers preventing you from offering/ developing Big Data tools in the banking, insurance and securities sectors? If so, which barriers?

There are a number of non-regulatory barriers that can impede firms from making innovative use of Big Data.

Firstly, we believe there is a need for greater consumer education in relation to the benefits Big Data can offer when developed alongside the appropriate product governance standards. Big

Data is often portrayed negatively in the media with little attention being given to the significant benefits it can offer to consumers and we would like to see policy makers address this. We believe part of the solution is increasing the understanding and importance of the fundamentals of data ownership as well as data ethics.

Secondly, we believe policy makers need to encourage the take-up of digital skills in the work force to ensure firms have adequate access to the digital skill base needed to harness the benefits Big Data has to offer.

7. Do you consider any of these regulatory requirements as unjustified barriers preventing you from using Big Data technologies? If so, please explain why. Please also explain whether you consider that further regulation (including soft law/guidance, etc. and insofar as it falls within the scope/remit of the ESAs) should be introduced to facilitate the use of Big Data technologies.

As highlighted above, whilst the protection of consumer interests should be a priority for the supervisory authorities, we believe there are currently discrepancies in the levels in the regulatory protection afforded to B2B and B2C uses that make operating in the B2B environment a more challenging space than B2C.

Specifically, we believe systemically-important industry data providers should not be allowed to create an uneven playing field by charging external clients for data that they give to affiliated businesses for free or at a substantial discount. Such practices lead to significant competitive advantages for systemically-important market data providers at the detriment of other industry participants.

In relation to cyber security, though we appreciate this may not strictly fall within the legislative powers of the ESAs, we believe the regulatory environment should be based on a level playing field for all parties with breach penalties proportionate to the size of the breach, the sensitivity of the data, and the overall security posture of the organization.

Furthermore, in relation to model validation/model risk management we believe regulatory requirements should be imposed equally on all parties, and not just banks, with respect to the offering of investment signals and investment advice.

On a broader note, we urge the ESAs, as well as other policy makers, to recognise that firms who make innovative use of Big Data incur high costs to do so. Whilst, as highlighted in our response, we believe there is the need for some targeted changes to the current regulatory framework, firms need confidence that the regulatory environment will be largely stable so as to give them the confidence to justify the high level of investment needed to deploy new technologies in the market place. We therefore urge the ESAs to be mindful of this when looking at developing any Big Data focussed regulatory framework.

Lastly, we believe it is important that regulators, when devising rules that are likely to impact on the use of Big Data, avoid overly prescriptive rules that would hinder the development of innovative practices. This approach is particularly important in relation to data protection legislation with the principles of transparency and innovation being weighed against the need to develop Big Data technology in a way that protects the interest of consumers.

10. Is the regulatory framework adequately addressing the risks mentioned above?

One area in which we believe the current regulatory framework could stop firms and consumers from benefitting from the opportunities Big Data has to offer is the lack of clarity around the ownership of data. One example we would like to highlight is the uncertainty of data ownership when management firms (whether it is a traditional asset manager, hedge fund or private equity firm) send clients information on their funds such as fund performance data. Specifically, we

believe there is a need for clarity as to whether the client can redistribute the data given that they are paying for the investment management service or whether the data is owned by the investment management company.

One additional area where we believe the current regulatory framework is lacking, is the need for regulators to be compelled to carry out formal consultations before selling industry data or making it publicly available. Otherwise, regulators risk potentially taking away value from the industry and stopping it from innovating for the benefit of consumers.

Furthermore, the regulatory framework needs to make clear whether anonymized and aggregated data belongs to the firm that anonymized/aggregated it or the firms whose individual data makes up the anonymized/aggregated data. Different approaches to this issue by regulators and policy makers is creating an unlevel playing field between firms.

Lastly, we believe there is a need for the regulatory framework to distinguish between using data for research purposes and using it for commercial purposes with an appropriate regulatory environment being set accordingly.

13. Do you agree that Big Data increases the exposure of financial institutions to cyber risks? If yes, what type of measures has your institution adopted or is going to adopt to prevent such risks? What could supervisory/regulatory authorities do in this area?

Whilst Big Data does increase the exposure of financial institutions to cyber risks, this is no different to the increased exposure brought about by existing large data warehouses and other large repositories of data and information. The application of a risk-based approach would still apply as per ISO 27001 and NIST security standards and best practice. Improved data standards and governance (see answer to 14) that enables better understanding of the data and information is critical to better protecting data and information assets as it enables the more systematic classification and risk assessment of the threats.

We therefore believe there is scope for regulators and industry participants to better promote standards, frameworks and methodologies that enable firms to apply a consistent approach to determining the sensitivity of combining more varied and complex data and information which is typical of many Big Data implementations. As an example, it would be useful for the industry to adopt a more systematic approach to determining the extent to which a firm should utilise more sophisticated anonymisation, masking, blurring and other state of the art techniques to prevent 'reverse engineering' of the underlying data, better safeguard the data and information assets, and therefore reduce cyber security risks.

14. Would you see merit in prohibiting the use of Big Data for certain types of financial products and or services, or certain types of customers, or in any other circumstances?

We do not believe there is any specific reason to prohibit any specific types of financial products or services.

Rather, we believe that regulators and the private sector should focus on the development of "information standards" which are lacking across the financial services sector as well as more broadly. Better information standards (including but not limited to rich metadata) would help to ensure there is better understanding and documentation of the meaning of the underlying data and information which are essential to ultimately help determining whether any Big Data products or services (or data and information usage more generally) are compliant with the host of regulatory, contractual, ethical, intellectual property and personal data related constraints that apply to the data and information in question.

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16. How do you believe that Big Data could impact the provision of advice to consumers of financial products? Please explain your response.

Big data, including advanced analytics, can have a positive impact on the advice given to consumers of financial products although there is a prerequisite that the consumers have provided sufficient and relevant information that enables confidence in the predictive analytics models and/or Big Data insights, since there are serious risks with the provision of advice when it is based on inadequate or incomplete information.

It is important for financial services firms to adopt an appropriate risk based methodology when using Big Data for the provision of advice, and we believe that regulatory guidance on techniques and methodologies would be welcome by the industry.

18. How do you believe Big Data tools will impact know-your-customer processes? Please explain your response.

We believe that Big Data tools are already impacting know-your-customer processes especially in relation to the on-boarding stage, ongoing fraud detection and AML (Anti Money Laundering). Monitoring unstructured news and market events is also becoming common practice in the financial services sector in order to raise early warning signs of negative news items relating to a security holding, corporate client or retail customers. Many of these processes are designed to provide an alerting mechanism with an operational human process to validate and confirm the alerts (aka validating in case of false positives).

Big Data tools also provide powerful capabilities to better understand the sometimes complex relationships between clients. For example, the ability to identify and track directors who have multiple roles within many firms, including their relationships to other directors, helps to reduce risk exposure to the financial institution when one or more of these firms (who may or may not have been already onboarded) have been engaged in undesirable activities.

20. What are the greatest future challenges in the development and implementation of Big Data strategies?

We believe that data governance, in particular data security, data sensitivity and data privacy, will be the greatest future challenges. We do not believe that technology as such will be a challenge given advances such as increased processing capacity, cloud computing capabilities and the ever decreasing costs of storage.

Thank you once again for the opportunity to comment on the important matters raised within this Discussion Paper. Please feel free to contact us should you wish to discuss State Street's submission in greater detail.

Sincerely,

James (J.R.) Lowry, Head of EMEA for State Street Global Exchange

Hany Choueiri, Head of Data Governance and Strategy (CDO) EMEA