JOINT COMMITTEE OF THE EUROPEAN SUPERVISORY AUTHORITIES

Report

on automation in financial advice

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Abbreviations

AML-CFT	Anti-Money Laundering and Combating the Financing of Terrorism
CAs	Competent Authorities
CESR	Committee of European Securities Regulators
CRS	Common Reporting Standards
DP	Discussion Paper
EBA	European Banking Authority
EIOPA	European Insurance and Occupational Pensions Authority
EMD	Electronic Money Directive
ESAs	European Supervisory Authorities
ESIS	European Standardised Information Sheet
ESMA	European Securities and Markets Authority
FATCA	Foreign Tax Compliance Act
FinTech	Financial Services Technology
IBIP	Insurance-Based Investment Product
IDD	Insurance Distribution Directive
IPID	Insurance Product Information Document
MCD	Mortgage Credit Directive
MiFID	Markets in Financial Instruments Directive
MS	EU Member States
NIS	Directive on Security of Network and Information Systems
PAD	Payment Accounts Directive
PRIIPs	Packaged Retail and Insurance-based Investment Products Regulation
PSD	Payment Services Directive

Executive summary

On 4 December 2015, the three European Supervisory Authorities (EBA, ESMA and EIOPA) published a Discussion Paper (DP) on *Automation in Financial Advice* (JC 2015 080), which describes the phenomenon whereby advice is provided to consumers without, or with very little, human intervention and providers rely instead on computer-based algorithms and/or decision/trees.

The DP was aimed at assessing what, if any, regulatory and/or supervisory action is required in response to this phenomenon. To that end, the DP presented the risks and potential benefits of this innovation to consumers and financial institutions, sketched the potential evolution of this innovation, and asked respondents for their views on the accuracy of this preliminary assessment.

Risks to consumers included the risk that consumers make unsuitable decisions as a result of lack of information or reduced opportunities to fill the gaps or seek clarifications when they interact with automated tools; or because of errors and/or functional limitations in the tool. On the other hand, the benefits arising from automated tools to consumers included reduced costs when they obtain advice through automated tools and consumers having access to a wider range of products and services. Risks to financial institutions included a greater exposure to litigation and subsequent reputational risk due to faulty automation and legal disputes due to unclear allocation of liability between different providers; while benefits to financial institutions included lower costs to deliver financial advice and having access to a wider range of consumers.

The ESAs received 68 submissions in response to the DP, including 14 confidential responses, from a wide variety of stakeholders, including trade associations, individual firms, consumer associations, and other interested parties. Having assessed these responses, as well as other sources of information, the three ESAs have arrived at seven preliminary conclusions:

A. The benefits that the ESAs had identified resonated well with many respondents, although many suggested that the benefits were overstated or were subject to additional caveats that the DP had not identified. In particular, respondents challenged the potential benefit that automated tools could provide wider access to advice, as well as the extent to which automated tools could facilitate cross-border transactions or to meet the needs of certain clients, such as those with more complex needs.

B. The risks that the ESAs had identified were also largely confirmed by respondents, although the responses suggested that the extent to which advice is automated differs between different business models, which may then also impact the likelihood of certain risks materialising.

C. Several existing EU Directives and/or other regulatory requirements already apply to automated advice, even if they do not make an explicit reference, and might, to an extent, mitigate some of the risks that were identified in the DP. Such is the case, for example, for the

Markets in Financial Instruments Directive (MiFID I) and MiFID II (which enters into application in 2018); the Mortgage Credit Directive (MCD); the Insurance Distribution Directive (IDD); the Payment Services Directive (PSD) and the Packaged Retail and Insurance-based Investment Products (PRIIPs) Regulation. In addition, as the proliferation of automated advice is still at an early stage, it is less likely at the present time for some of the risks to materialise in a way that creates widespread detriment to consumers or undermines the confidence of market participants as a whole. For these reasons, the ESAs have concluded for the time being not to develop additional joint cross-sectoral requirements specific to this particular innovation.

D. Where respondents provided additional examples of automated advice, the examples appear to confirm the ESAs' preliminary assessment that the innovation may occur in all three sectors of securities, banking and insurance, but that at present it appears to be most prevalent in the securities sector. Respondents did not provide any additional relevant examples from the pensions sector. Also, respondents have confirmed the ESAs' preliminary assumptions that the phenomenon is not equally widespread across the EU.

E. However, given that the majority of respondents confirmed the potential for growth of this innovation, the three ESAs will continue to monitor the evolution of the market, including by identifying issues related to financial institutions' compliance with applicable EU laws and regulations and by considering the consequences of the phenomenon and its cross-border characteristics to national supervisory frameworks and initiatives. They will do so separately in their three respective sectors, on account of the different developments across the sectors.

F. Although the risks and benefits presented in the DP focussed on fully automated advice models, many respondents noted that 'hybrid' models are currently more common, (i.e. tools that combine automated advice with an element of human advice). While some of the risks presented in the DP may therefore be less likely to materialise to the same extent in the case of hybrid advice models, the ESAs arrived at the view that the risks do exist notwithstanding. The ESAs will therefore monitor automation in financial advice across the spectrum of this innovation, including the different types of automated tools.

G. One of the main barriers to the development of automated advice, as identified by some financial institutions that responded to the Discussion Paper, was the divergent definitions of 'advice' across the banking, securities and insurance sectors. Some respondents also raised questions about the applicability of relevant EU law and regulations to the different possible emerging business models used to offer automated advice. The ESAs will take this feedback into account and will consider the possible barriers to the development of automated advice and the application of existing definitions to evolutions observed in the market place, as part of the planned ongoing monitoring activity. In the meantime, however, financial institutions should carefully assess the applicability of the above mentioned laws and regulations to the innovation they are developing.

The ESAs will continue to monitor the market in order to check that their preliminary conclusions above remain applicable to the future evolution of the phenomenon, will assess any views that may emerge on the topic by non-EU authorities and intergovernmental organisations, and will update their observations as and when required.

Background

1. On 4 December 2015, the ESAs (EBA, ESMA and EIOPA) published a Discussion Paper (DP) on automation in financial advice aimed at assessing what, if any, regulatory and supervisory action is required to allow market participants to harness the potential benefits of this innovation while at the same time mitigating its risks.

2. In the fulfilment of their task to monitor financial innovation, the ESAs had seen a growing number of financial institutions offering automated tools when providing advice or recommendations to consumers, often referred to as 'robo-advisors', which can potentially change the way consumers and financial institutions interact when buying or selling financial products.

3. The Discussion Paper explained the concept of automation in financial advice, whereby a financial institution provides advice or recommendations to consumers without, or with very little, human intervention and relies instead on computer-based algorithms and/or decision trees, and highlighted potential benefits and risks associated with this particular innovation. It also sketched how the ESAs currently see the evolution of the market in the future.

4. The Discussion Paper was available on the websites of the three ESAs with a deadline for responses of 4 March 2016. The ESAs received 68 responses to the DP, of which 14 were confidential. 29 responses were received from trade associations; 26 from individual firms; 3 from consumer associations; 3 from the stakeholder groups of the ESAs; and 7 from other categories of respondents.

5. Having assessed these responses, the ESAs have arrived at seven preliminary conclusions in respect of: the validity of the potential benefits that the ESAs had identified in the DP; the confirmation of the risks previously identified in the DP; the extent to which automation in advice has been occurring across the three sectors of banking, insurance and securities; the question whether any additional regulatory requirements are needed; what monitoring the ESAs will carry out; in respect of the implications for 'hybrid' forms of automation; and in respect of the possible barriers to the development of automated advice. In what follows below, this report explains each of these conclusions in detail.

6. The ESAs will continue to monitor the market in order to check that their preliminary conclusions above remain applicable to the evolution of the phenomenon, will assess any views that may emerge on the topic by non-EU authorities and intergovernmental organisations, and will update their observations as and when required.

Preliminary conclusions of the ESAs

A. The benefits of automated advice that had been identified by the ESAs are accurate but might in some cases be overstated or subject to additional caveats

7. In the DP, the ESAs identified benefits of automated advice to consumers and financial institutions in respect of:

   - reduced costs for both consumers and financial institutions;
   - easy access to more products and services to a wider range of consumers and wider client base for financial institutions; and
   - improved quality of the service provided.

8. With regard to reduced costs, the DP argued that automation in financial advice could decrease the costs of providing advice, and that this might make advice more affordable for consumers. In relation to easy access to more products and services, in turn, the DP suggested that a wider range of consumers might be able to access financial advice through automated tools, which in turn would allow consumers to be able to access a wider range of products and services. Conversely, financial institutions would have access to a wider range of consumers, especially on a cross-border basis, given that the tools are accessible online.

9. Lastly, the DP argued that automated advice could improve the quality of the service provided as consumers could receive advice that is more consistent than human advice, is based on the most up-to-date market information; can be recorded more readily; and is therefore easier to audit, thus reducing auditing costs.

10. Most respondents agreed with the benefits identified in the DP. For example, in relation to reduced costs, several respondents were of the view that a high initial investment is required from financial institutions, but that, once the cost of system development has been met, the marginal cost of each new transaction may be relatively low, enabling financial institutions to benefit from economies of scale. However, several respondents also introduced a significant caveat, in that the client base would have to be sufficiently large for such economies of scale to materialise.

11. Other respondents emphasised the significant costs that in their views arise from the continuous testing, maintenance and marketing of automated tools; and that the main benefits would accrue, not as a result of cost reduction but of additional revenue streams. Others still cautioned against too high expectations regarding the price reductions experienced by consumers and that a low price for advice should not always be seen as the soundest criterion for obtaining good advice.

12. In relation to easier access, several respondents suggested a distinction to clarify that wider access to information does not necessarily imply wider access to advice; that automated tools are less useful for clients with complicated financial needs; and that cross border provision of automated advice is not as easy as the DP suggested, due to national differences (e.g. differences in markets or national legislation).

13. In relation to improved quality of service, while generally agreeing, respondents emphasised the importance of the human element; that most automated advice models currently in the marketplace are 'hybrid' models with some form of human interaction; and that therefore a comparison between human and automated advice is too simplistic. More specifically, several respondents stated that whether or not automated advice is more consistent and accurate depends on both the underlying logic of the algorithm and the quality and completeness of the information inputted.

14. Several respondents also proposed a number of measures that financial institutions and other providers of automated tools have in place to ensure that an algorithm delivering financial advice is well calibrated and the necessary checks have been performed before it enters the production phase, including taking samples and comparing them against the advice that a human advisor would have suggested; and having human advisors closely involved in the design and oversight of automated advice tools, to ensure that the algorithm delivers the expected outcome.

15. Given the above responses, the ESAs conclude that the benefits of automated advice that had been identified in the DP are accurate but might currently not yet be fully realized or be subject to additional caveats, due to the early stages of the development of the phenomenon.

B. The identified risks are also deemed accurate, but the likelihood and impact of the materialisation of these risks might vary

16. In the DP, the ESAs identified risks of automated advice to consumers and financial institutions in respect of:

    - consumers having limited access to information and/or limited ability to process that information;
    - flaws in the functioning of the tool due to errors, hacking or manipulation of the algorithm;
    - legal disputes arising due to unclear allocation of liability; and
    - the widespread use of automated tools.

17. With regard to the risk of consumers having limited access to information, the ESAs had acknowledged in the DP that it could be difficult for some consumers to understand all the information that is provided about how the data they have inputted is used by the tool, and

that the likelihood of this risk materialising would be dependent not only on financial literacy levels, but also on what information is presented to the consumer and how that information is presented.

18. Also, the ESAs had identified the risk of consumers receiving unsuitable advice as a result of biases in the tool that they are not aware of. This risk would be made worse if consumers are unable to ask clarifying questions so as to better understand the conditions under which advice is provided by the tool.

19. These risks were identified in the DP based on the assumption that the advice provided to consumers was done so on a fully automated basis (i.e. without human intervention). As a majority of business models described in the responses to the DP are not based on fully automated financial advice proposition, several respondents noted that the majority of the risks to consumers related to consumers having limited access to information and/or limited ability to process that information are less likely to materialise if some form of human interaction is available (i.e. if consumers are able to ask questions to a person).

20. The DP also identified risks to consumers related to flaws in the functioning of the tool, such as consumers making unsuitable decisions because of limitations or assumptions within the tool; because of errors in the tool; or because the underlying algorithm is manipulated, e.g. due to hacking. These risks would in turn affect financial institutions because they would be more exposed to litigation and subsequent reputational risk due to faulty automation.

21. Respondents highlighted the importance of controls and testing during the development and maintenance of automated advice tools, such as pre-testing of algorithms, and the involvement of appropriately knowledgeable and qualified staff including advisors and control functions such as risk, compliance and internal audit.

22. In the view of respondents, cybersecurity is a key risk for consumers and also for financial institutions, and they recognise the need to pursue the enhancement of tools aimed at preventing frauds and ensuring cybersecurity. In any case, the exposure of consumers to risks stemming from the use of flawed automated advice tools was seen by respondents to be offset by the current prevalence of hybrid models, which also rely on human interaction.

23. While the risk is not exclusive to automation, the scale of the effects of faulty automation depends on how many users have received the faulty feedback provided by the tool, for example if it has been hacked. The impact could potentially be more significant compared to face-to-face provision of advice.

24. On risks related to legal disputes arising due to unclear allocation of liability, they were based on the assumption that it may be more likely that different financial institutions can be responsible for different parts of the service offered to consumers online in a disintermediated environment. Where there are no specific legal agreements between the different actors to stipulate liability on an ongoing basis, and if there are not appropriate controls in place over any outsourcing arrangements, it could happen that financial

institutions inappropriately delegate their regulatory and contractual responsibilities to the end provider.

25. Respondents noted that dispute-related costs and future liability could be a barrier to automated advice for some institutions. Some respondents expressed concern over the allocation of liability when consumers receive advice via an automated tool, particularly, whether the liability can be attributed to consumers, providers or third parties. The outsourcing of functions to specialist providers such as entities in the FinTech industry was also raised by some respondents in relation to this risk.

26. Risks related to the widespread use of automated tools, were based on the assumption that automation in financial advice may become widespread and, if so, consumers may no longer be given the opportunity to engage in human advice should they want to; or may lose out as a result of automated tools being based on similar algorithms, resulting in many consumers taking the same actions in relation to the same products/services.

27. Due to the fact that automation in advice is not widespread yet, respondents deemed the pro-cyclicality or 'herding risk' unlikely to occur. Also, the majority of respondents did not agree with the risk that consumers may no longer be given the opportunity to access any human financial advice because, at the present time, fully automated advice does not appear to be widespread.

C. Several EU laws and regulations already apply to automated advice and can address the risks identified

28. In relation to the risks identified in the DP about consumers having limited access to information and/or limited ability to process that information, and also the risks related to consumers not understanding the limitations of the tools, the ESAs note that a number of regulatory requirements already exist or will apply in the near future that specify the information that should be provided to clients.

29. For example, in the securities sector, the regulatory framework provided by the Markets in Financial Instruments Directive (MiFID)[1] specifies the information that should be provided to clients, including in respect of the financial institution; the services offered; the financial instrument(s); the risks involved; as well as the overarching obligation that all information provided to clients and potential clients should be fair, clear and not misleading. MiFID II will strengthen these requirements, including in relation to information provided to clients about the scope of advice provided. MiFID also requires all investment firms to ensure that investment advice is suitable for the client or potential client.

[1] Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments, at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02004L0039-20110104&from=EN (consolidated version).

30. In the insurance sector, in turn, the Insurance Distribution Directive (IDD)[2] introduces a pre-contractual product information document, which is aimed at providing standardised information about non-life insurance products (IPID), ultimately enhancing transparency and comparability of products. Also, IDD requires that prior to the conclusion of an insurance contract, the insurance distributor specifies, on the basis of information obtained from the customer, the demands and needs of that customer. In order to allow the customer to make an informed decision, the insurance distributor shall provide the customer with objective information about the insurance product in a comprehensible form. The IDD introduces additional requirements for insurance-based investment contracts (IBIPs), providing that distributors shall assess the suitability or the appropriateness of the product to the customer before recommending it. All information provision under IDD, similar to information provision under MiFID, shall be fair, clear and not misleading.

31. Finally, in the banking sector, Mortgage Credit Directive (MCD)[3] states that creditors, and where applicable credit intermediaries or appointed representatives, shall provide adequate explanations to consumers on the proposed credit agreements and ancillary services, in order to place consumers in a position enabling them to assess whether the proposed credit agreements and ancillary services are adapted to their needs and financial situation. The MCD includes information requirements related to advisory services provided by financial institutions, through provisions that are subject to maximum harmonisation in relation to the provision of pre-contractual information through the European Standardised Information Sheet (ESIS). Also, MCD provides that creditors shall make a thorough assessment of the consumer's creditworthiness before concluding a credit agreement. This obligation allows verifying that the consumer will be able to meet his obligations under the credit agreement. In addition, even if not referring specifically to 'advice' or 'advisory services', the Payment Accounts Directive (PAD)[4], the revised Payment Services Directive (PSD2)[5] and the Consumer Credit Directive (CCD)[6] require information to be presented to consumers in relation to other banking products.

32. The Regulation on key information documents for packaged retail and insurance-based investment products (PRIIPs)[7] is also expected to enhance transparency for retail customers

[2] Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution (recast), at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016L0097&from=en.

[3] Directive 2014/17/EU of the European Parliament and of the Council of 4 February 2014 on credit agreements for consumers relating to residential immovable property, at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0017&from=EN.

[4] Directive 2014/92/EU of the European Parliament and of the Council of 23 July 2014 on the comparability of fees related to payment accounts, payment account switching and access to payment accounts with basic features, at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0092&from=en.

[5] Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015L2366&from=EN.

[6] Directive 2008/48/EC of the European Parliament and of the Council of 23 April 2008 on credit agreements for consumers, at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:133:0066:0092:EN:PDF.

[7] Regulation (EU) No 1286/2014 of the European Parliament and of the Council of 26 November 2014 on key information documents for packaged retail and insurance-based investment products (PRIIPs), at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R1286&from=EN.

when buying PRIIPs. From the date of its application, the PRIIPs Regulation will introduce a key information document (KID) that provides key facts to investors in a clear and understandable manner covering not only collective investment schemes but also other 'packaged' investment products offered by banks, investment firms, or insurance companies.

33. In relation to the risk identified in the DP about possible biases in automated tools, the ESAs agree with respondents that noted that the risk of conflicts of interest exists whether advice is provided on automated basis or via a human advisor. The DP noted that, in the securities sector, MiFID does not permit an inducement that results in any bias in the advice given and that all advice should be suitable for the client or potential client. Any other conflicts of interest should be identified and prevented or managed. Furthermore, under MiFID II, inducements are expressly prohibited in the case of independent advice.

34. Similarly to MiFID, the IDD requires distributors to act honestly, fairly and professionally in accordance with the best interests of their customers and, especially for IBIPs, conflicts of interest to be identified, prevented and managed. If this is not possible, then conflicts of interest, including conflicts related to inducements for advisory services, need to be disclosed. In the banking sector, MCD provides for the clarity of any remuneration arrangements concerning the provision of advice and for the information that should be provided to the consumer in relation to the range of products offered, so that the consumer can understand the basis on which the recommendation is made.

35. Concerning the risks to consumers related to flaws in the functioning of the tool (e.g. errors in the tool or because the underlying algorithm is manipulated) and the risks to financial institutions due to faulty automation, it has to be noted that MiFID and IDD establish the requirement to assess suitability when providing advice, while MCD points out that it has to be ensured that consumers are presented with products suitable for their needs and circumstances. MiFID and Solvency II[8] also state that undertakings should take reasonable steps to ensure continuity and regularity in the performance of their activities. In the banking sector, the Capital Requirements Directive and Regulation (CRD IV/CRR)[9] requires adequate internal control mechanisms that are consistent with and promote sound and effective risk management.

36. Further, on the risks identified in the DP related to cyber-security, the ESAs acknowledge that steps are being taken at European level to tackle such risks within the framework of the EU Cybersecurity Strategy (e.g. adoption of the Directive on security of network and information

[8] Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II) (recast), at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02009L0138-20150331&from=EN.

[9] Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013L0036&from=EN; and Regulation (EU) no 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:321:0006:0342:EN:PDF.

systems [the NIS Directive] by the European Parliament on 6 July 2016).[10] The ESAs will continue to monitor the development and implementation of this strategy.

37. The ESAs acknowledge that increasing fragmentation in the advice process can make it difficult to trace the 'customer journey' and allocate the responsibilities along the distribution chain. However, the ESAs also note that financial institutions under MiFID, the IDD and the MCD cannot delegate the responsibility for the assessment of the suitability of the advice provided, even when outsourcing specific technological aspects to external providers such as FinTech firms. The ESAs also expect that the implementation of the Guidelines on product oversight and governance arrangements for retail products in each of the three sectors will address some of the risks related to firms correctly determining the target market for products and services and efficiently developing product testing and monitoring.

38. Given the above considerations, existing EU legislation might, to an extent, mitigate some of the risks identified in the DP, which is why the ESAs have come to the view that, at the present time, and given the current evolution of the phenomenon across the three sectors and across Europe, no additional joint cross-sectoral requirements specific to this particular innovation need to be developed.

D. While the phenomenon of automated advice may occur across the banking, insurance and securities sectors, it appears that it is most prevalent in the securities sector and not equally widespread across the EU

39. The DP presented the preliminary view of the ESAs that, although the phenomenon of automation in financial advice is currently not equally widespread across the three sectors or across all EU jurisdictions, it is an innovation with growth potential that requires the attention of regulators to better understand and harness its potential benefits, but also to identify risks before they materialise, so as to ensure that consumers are protected and that market participants can therefore have confidence in the innovation. In the DP, the ESAs put forward some examples of their observations of automation in financial advice in the three sectors.

40. The respondents to the DP did not provide any additional evidence that would have suggested that automated advice is more widespread across the EU or across all three sectors. Nonetheless, some respondents did caution that the demand and supply of automated advice tools will increase dramatically in the near future.

41. In the securities sector, for example, respondents highlighted the different types of automation that they experienced or developed, such as: i) automation in the collection of

[10] Directive (EU) 2016/1148 of the European Parliament and of the Council of 6 July 2016 concerning measures for a high common level of security of network and information systems across the Union, at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016L1148&from=EN.

information from consumers; ii) automation in the generation of recommendations (e.g. based on an asset allocation strategy for the election of particular instruments); iii) automated execution of the recommendations provided; and iv) automation of ongoing monitoring of investments selected.

42. As MiFID defines certain information that has to be collected for the assessment of suitability, which is required when offering investment advice, an automated tool in the securities sector will typically ask a series of questions covering personal information about the client that covers these areas (i.e. the investor's knowledge and experience, financial situation and investment objectives); and information relating to the investor's life and situation (for example, the investors' tax situation, marital or relationship status, career and retirement plans, other investments and assets held, financial resources and commitments, and the plans for their family in the short and longer term).

43. In the insurance sector, in turn, the set of questions asked by the tools has been reported by respondents to be much more inquisitive and demanding a whole range of personal data, even for simpler insurances, such as car insurance. This is probably relevant to the actuarial calculations that determine the premium to be paid.

44. In the banking sector, which covers mortgages, consumer credit, payment services, electronic money and deposits, respondents did not provide substantial additional evidence. Some savings and retail banks have reported to have implemented some tools, either fully or semi-automated, on consumer credit, and some banks have reported to have developed automated tools to provide advice on mortgage credit, while also allowing consumers to obtain credit approval.

45. The ESAs acknowledge that respondents have confirmed the views expressed in the DP that the phenomenon of automated advice exists across the banking, insurance and securities sectors, but that the scale and intensity differs between the three sectors and appears to be currently more present in the securities sector.

46. Also, respondents confirmed the ESAs' preliminary views that the phenomenon is not equally widespread in the EU, thus suggesting that it is unlikely that the identified risks will have a widespread detrimental effect on consumers and/or on financial institutions across the EU.

E. Given the potential for growth of this innovation, the ESAs will continue to monitor the evolution of the market

47. With regard to the future evolution of the market that was sketched in the DP, the majority of respondents identified a growth potential in the market for automated financial tools and expects that consumers will interact increasingly with automated distribution services. As a result, some respondents expect that financial institutions might try to operate in this market by hiring qualified staff and gaining insights of FinTech players via different means, for example merger & acquisition activity.

48. Some respondents identified other relevant topics not expressly mentioned in the DP, such as the use of machine learning, artificial intelligence, blockchain technology, and/or cognitive computing as a way to further improve automated advice tools. Respondents also noted that new players in the market, such as FinTech firms could have a significant impact on the direction of the financial sector in the future. Overall, respondents stated that there will be a more diversified offer of products and services that will be more easily accessible for consumers.

49. A few respondents noted that different markets in the European Union move at different speeds with regard to realising the potentials of automation in financial advice, but acknowledge that IT-related and web-based automation is transforming the provision of financial services. Various aspects of automation have been reported in various moments of the relationship between consumers and their financial service provider: when obtaining recommendations about products; when concluding a contract; when receiving information about a contract; and when terminating a contract.

50. Based on the responses to the DP, financial institutions are aiming to improve consumer experience when providing their services, while also reducing their costs by automating resource-consuming processes.

51. While acknowledging that automation specifically in the provision of advice is apparently evolving at a different pace across different jurisdictions in the EU and within different sectors of the market, the ESAs also note the potential for the phenomenon to grow by increasing market share where already present, and entering new sectors and/or geographical markets.

52. The ESAs will therefore continue to monitor the phenomenon of automation in financial advice, namely by identifying issues related to financial institutions' compliance with applicable law and regulations, and by considering the consequences of the phenomenon and its cross-border characteristics to national supervisory frameworks and initiatives, as stated above. They will do so separately in their three respective sectors, on account of the different developments across the sectors.

F. The ESAs will monitor automation of advice across the spectrum of this innovation, including 'hybrid' advice tools

53. For the purposes of the DP, one of the main stated characteristics of automation in financial advice was that consumers obtained financial advice directly from the automated tool they used, with no (or very limited) interaction with a human advisor. The DP therefore focussed on those cases where human intervention for the purposes of advice is completely replaced by an automated process (i.e. an algorithm or decision tree) that the consumer accesses directly. Such automated financial advice tools are sometimes referred to as automated advisors, robots or robo-advisors, highlighting their lack of human attributes such as

emotional response, bias, judgment, and the ability to assess the need to probe where further clarification or information might be required from the consumer.

54. However, the majority of respondents to the DP that indicated that they currently offer financial automated advice actually use 'hybrid' business models, under which the use of automated advice tools is combined with an element of human advice. In particular in the securities sector, respondents indicated that the main two types of tools:

    - "Fully automated tools": These are completely automated tools, driven by an algorithm or decision trees, with no or very limited human interaction involved in the advisory process. In response to the input of certain information from a consumer, recommendations are automatically generated in relation to particular financial instruments and are presented as suitable in light of the inputted information.
    - "Hybrid advisory tools": These tools combine an automated tool (algorithm or decision tree) with the ability to interact with a human advisor. Certain business models always involve a human advisor, typically to provide an additional customer service element and/or to provide an additional qualitative overlay to the recommendations presented by the automated tool. Respondents to the DP also noted that, in some business models, a human advisor would be engaged when it is deemed that the consumer has more complex needs than those that the automated tool can accommodate.

55. In the 'hybrid' advisory tools the element of human advice can occur in various stages of the advisory process:

    - while consumers use the tool: the possibility to ask clarification questions via telephone, instant messaging or Skype, for instance;
    - during the provision of advice: some business models are built in a way that offer an automated front-end, where the consumer effectively inputs the information required, and then speaks to a human advisor (e.g. on the phone or via Skype) for the provision of the advice. This could be simply to deliver to the client a recommendation based on the output of an automated tool, or to provide a recommendation based on the human advisor's assessment of the information input;
    - as part of the follow-up on the advice given: through a combination of e-mails, secure messages and phone conversations.

56. While the majority of respondents stated that digital transformation in general offers benefits for consumers and financial institutions, and that financial innovation is seen as a key driver of economic growth, they also expect that human advisors will co-exist and/or complement automated tools.

57. A number of respondents expected that the benefits of automated tools can only be utilised to a certain extent, as hybrid models will require the availability of human advisors. A majority of respondents expressed their expectation that the market as a whole will not move to fully automated tools, but rather have face-to-face advice as a parallel option available to consumers.

58. Against this background, the future monitoring work of the ESAs will consider, not only fully automated advice models but also other models of automation in financial advice, i.e. 'hybrid' business models. Particular business models will be considered against existing sectoral legislation and different automated advice models will be considered, especially in this early period as the phenomenon evolves.

59. The ESAs acknowledge that, as a result of the majority of business models evidenced in the DP responses involving some human element, some of the risks identified in the DP may be less likely to materialise, or likely to have less impact once they have materialised. Still, the ESAs will investigate the likelihood of those risks occurring in all types of automated business models identified.

G. The ESAs will continue to monitor the possible barriers to the development of automated advice

60. In order to be able to understand the development and usage of automated advice tools, in general, as well as in each of the three sectors, the DP asked an open question on any perceived barriers that may prevent the development and widespread usage of automated financial advice tools in the three sectors. The following main barriers were mentioned:

- *Costs*: In addition to the technical costs required to develop new technologies, respondents mentioned other costs that could constitute an obstacle, such as integration costs, security costs and regulatory and dispute-related costs. In particular, respondents noted that some algorithms to be created are intricate and upfront costs associated with the systems are high, which could be a barrier to entry. Costs appeared to be of concern particularly for respondents from the insurance sector.

- *Legal barriers*: The main concern expressed in the responses relates to legislation impeding the provision of automated advice across borders, in particular in relation to legal requirements related to data protection, anti-money laundering and combating the financing of terrorism (AML-CFT), and foreign tax compliance Act (FATCA)/Common Reporting Standards (CRS), which respondents indicated can differ under national implementations.

- *Regulatory barriers:* Respondents also expressed some uncertainty about the impact of recent regulatory reforms and how they should apply to automated advice business models, including in IDD and MIFID.

- *The definition of advice*: Respondents stated that the definition of advice varies across the different sectors and that differing definitions can create uncertainty or be a barrier to the provision of holistic financial advice across banking, insurance and pensions and securities products. They also noted that the provision of information should be clearly distinguished from the provision of advice to avoid uncertainty.

- *Lack of consumer awareness:* A number of respondents were concerned about lack of consumer awareness, cultural barriers or behavioural biases, which may mean that consumers are not comfortable receiving advice from an automated tool, particularly in some jurisdictions or amongst some groups of consumers.

- *Un-level playing field:* Some respondents expressed concern that there may be different barriers for different entities offering very similar services, depending on the sector of the market or on the regulated status of the entity. For example, some respondents perceived that new entrants (such as so-called FinTech firms) may be able to enter the market with relative ease as the entry barriers are low and the technology is easily accessible. Whilst, for traditional financial institutions, obstacles can be created as they have to observe stricter regulation (e.g. Basel requirements).

61. Some of these barriers relate to legislation outside the direct remit of the ESAs, such as national tax laws, or to cultural biases that would be difficult for financial regulators to address. In respect of the perceived lack of consumer awareness and financial literacy, in turn, the ESAs believe that at this stage such promotional activities are best placed, not with public authorities, but with the private sector providers developing the innovations that consumers are apparently unaware of.

62. The view of some respondents that different legislative and/or regulatory requirements apply to new entrants compared to incumbents is not shared by the ESAs because the relevant obligations are determined on the basis of the activities performed by the institution, regardless of whether the institution is an incumbent or a new entrant, and that in the case of outsourcing of a technology to an unregulated technology provider, the financial institution remains liable.

63. On the barrier related to the definition of 'advice', when drafting the DP, the ESAs stated that the phenomenon of automation in financial advice had emerged against a background of a lack of clarity in the existing legislative framework and inconsistent regulatory treatment across the three sectors, because the notion of 'automation' in the context of financial services is not defined in any relevant sectoral legislation. The DP also acknowledged that the concept of 'advice' is defined differently in the three sectors:

- In the banking sector, (i.e. loans, mortgages, deposits, payment accounts, payment services, and electronic money), the MCD defines 'advisory services'.

This definition, however, is only applicable to products and services within the scope of this specific Directive and is not, therefore, common and valid for all banking products.[11]

- In the securities sector, MiFID) [12] provides a definition of 'investment advice', which is further defined in the MiFID Implementing Directive[13], and has been left unchanged under MiFID II (which will apply from January 2018).[14]

- In the insurance sector, the Insurance Distribution Directive provides a definition of 'advice' that follows the definition of investment advice in MiFID.[15]

64. While acknowledging that the existing framework of applicable European and national legislation might, to an extent, mitigate some of the risks arising as a result of the phenomenon of automation in financial advice, the ESAs chose to adopt a wide interpretation of the meaning of automated advice, to capture all variants of the phenomenon that may require attention and to capture the meaning of advice from the consumer's point of view, given that the consumer's understanding of what constitutes advice is broad and not confined to sectoral definitions.

65. Therefore, for the purposes of the DP, 'advice' was used in the common meaning of the word, as an opinion or recommendation as to the appropriate choice of action. This was seen as a right course of action given the objective: to prompt a high number of responses on the various issues that may arise from automation in financial advice, focusing on the automation issue, and not so much on the discussion of sectoral legal definitions.

66. From the responses received, the definition set out in the DP and explained above seems to have created some confusion among respondents and led to a perception that, in some cases, sectoral legislation may not apply to automation in financial advice in the same way it applies to traditional or 'human' advice. The main issue stemming from the responses to the DP was the broad definition of advice used by the ESAs.

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[11] MCD defines 'advisory services' in Article 4(21) as 'the provision of personal recommendations to a consumer in respect of one or more transactions relating to credit agreements and constitutes a separate activity from the granting of a credit and from the credit intermediation activities set out in point 5'. And it then sets out what it calls 'standards for advisory services' under in Article 22.

[12] Article(4)(1)(4) of MiFID states: "'Investment advice' means the provision of personal recommendations to a client, either upon its request or at the initiative of the investment firm, in respect of one or more transactions relating to financial instruments."

[13] Commission Directive 2006/73/EC of 10 August 2006 implementing Directive 2004/39/EC of the European Parliament and of the Council as regards organisational requirements and operating conditions for investment firms and defined terms for the purposes of that Directive, at:

http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:241:0026:0058:EN:PDF.

[14] Directive 2014/65/EU of the European Parliament and of the Council, of 15 May 2014, at the following website: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0065&qid=1410176634538&from=EN.

[15] IDD defines 'advice' as 'the provision of a personal recommendation to a customer, either upon their request or at the initiative of the insurance distributor, in respect of one or more insurance contracts' (Article 2(1)(15)).

67. Thus, a number of respondents stated that, in order to have a level playing field and the ability to compare automated financial advice tools and more traditional means of providing advice (i.e. face-to-face), there must be a common definition or terminology of advice for both channels, and the same level of consumer protection and providers' liability. In particular, some respondents requested a clarification that the concept of 'automation in financial advice' used by the ESAs is aligned with the existing legal definitions of advice contained in the relevant sectoral legislation (i.e. IDD, MiFID/MiFID II, MCD).

68. However, the ESAs would like to clarify that they did not intend to override, or add to, the existing sectoral definitions of advice. Instead, the ESAs are hereby reiterating that existing legislation, including the legal definitions of 'advice' or of 'advisory services' of Level 1 texts such as IDD, MiFID/MiFID II, and MCD, apply to all entities providing regulated advice, whether it is provided face-to-face or via an automated tool.

69. Given the above, the ESAs will not develop additional joint cross-sectoral requirements specific to this particular innovation at this stage. The ESAs will nevertheless consider the possible barriers to the development of automated advice and the application of existing definitions to evolutions observed in the market place, as part of the planned ongoing monitoring activity. In the meantime financial institutions should carefully assess the applicability of the above mentioned laws and regulations to the innovation they are developing.