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Task Force on Financial Consumer Protection

FINANCIAL CONSUMER PROTECTION RISK DRIVERS: A FRAMEWORK FOR IDENTIFICATION AND MITIGATION IN LINE WITH THE HIGH-LEVEL PRINCIPLES ON FINANCIAL CONSUMER PROTECTION

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Introduction

1. Since the global financial crisis, emphasis has been placed on how to restore consumer trust and confidence in financial markets. While steps have been taken at the international and domestic levels to improve frameworks that enhance financial consumer protection, additional work may be required to understand the key drivers of consumer risk and to identify the risk factors that cause consumer detriment.

2. The Task Force is in a unique position as an international forum of policy makers and regulators to undertake market surveillance and monitor key retail financial market consumer risk drivers, associated trends and emerging policy issues. This aim is consistent with the Task Force mandate and the Programme of Work for 2017-2018 [DAF/CMF/FCP/RD(2016)11/REV1], which specifies continued work on market vulnerabilities and consumer risks.

3. This report aims to provide a basis on which to establish a framework for risk assessment in line with the G20/OECD High-Level Principles on Financial Consumer Protection. The report builds upon the discussion note [DAF/CMF/FCP/RD(2016)10], which presented a draft categorisation of the various types of current and emerging consumer risks, as well as the discussion and input of Members.

4. Having a framework in place for the management of risks to financial consumer protection can facilitate their identification and subsequent mitigation. This report first focuses on the identification of risk, and presents a revised categorisation of risk drivers, identifying the factors that these drivers can influence and the resulting consumer detriment which can result. It also makes a first attempt at proposing indicators which may be used to identify and/or monitor the levels of risk. The report then aligns these risks with the High-Level Principles, highlighting how they could be applied to mitigate consumer risks, though measures which can be implemented will also depend on the scope of the mandate of financial consumer protection agencies.

5. Next steps for the work on risk drivers include the development of a high-level dashboard of possible indicators to monitor these risks and the collection, compilation and analysis of those risks and related effective mitigation strategies that have been implemented by Members, on a regular basis (eg every two years) in a financial consumer protection risk outlook.

Categorisation of risk drivers

6. The identification of the source of risk is essential in order to subsequently be able to implement policy and regulatory interventions to not only to help consumers who have been harmed, but to prevent harm in the first place. For example, the high indebtedness of consumers can certainly cause consumer detriment, but resolving the problem of indebtedness and preventing high indebtedness from occurring require very different policy interventions. Further, the driver of high indebtedness needs to be understood in order to prevent it. The risk driver could be the low interest rate environment which encourages users to take on too much debt, or it could be the lending practices of suppliers which make the acquisition of debt too easy or understanding complex contractual terms too difficult. Again, different drivers may require different policy interventions to prevent or reduce over-indebtedness and protect consumers, hence the importance of identifying the specific risk driver leading to consumer detriment.

7. However, the identification of consumer risk drivers is challenging as it requires inputs and the collection of potential indicators from a wide-range of sources. Sources may include market research and consumer data, complaints data, media reports, discussions with stakeholders as well as analysis of international developments. Furthermore, understanding the drivers of consumer detriment can require insights from several different fields, including economics, sociology, and psychology and technology. Even once a potential risk has been identified, identifying the specific drivers and factors contributing to consumer detriment can require working backwards (e.g. the reason for the high use of payday loans) or projecting forward (e.g. the risks presented by technological innovation) in order to be able to decide upon an effective mitigation strategy or be proactive in addressing emerging risks.

8. As a first step in the identification of key risk drivers to financial consumer protection, the discussion note [DAF/CMF/FCP/RD(2016)10] provided an initial overview of the main consumer risks broadly grouped into the categories of external, supply-side and demand-side risk drivers. The categorisation presented here further refines this initial grouping in order to better identify the sources of potential consumer detriment, that is the key risk drivers, and the various factors that these drivers can influence which can lead to poor consumer outcomes.

9. The risk categorisation discussed in section 1, and detailed in a table in Annex A, identifies five main risk areas, or contexts, in which risk drivers operate: the economic, demographic, political, business, and innovation contexts. Each of these contexts can give rise to specific risk drivers, which in turn can influence several supply-side and demand-side risk factors that can lead to outcomes which cause consumer detriment.

10. Depending on the circumstances in each jurisdiction, financial consumer protection regulators may have little or no direct control or influence over some risks occurring, eg economic or demographic risks. In this case, they will probably need to focus any mitigation efforts by way of influencing business or consumer behaviour on preventing consumer detriment as far as is possible taking the risk factor as given and/or using related data as an early warning of problems that may arise later.

11. For other risks, e.g. the business and innovation context regulators are more likely to have the means to exercise control over the risk, or to prevent it from arising in the first place. I Interventions may therefore focus on preventing and/or mitigating risks.

12. Additional contributing factors, namely financial literacy, informational asymmetry and behavioural biases, can serve to increase the influence of the risk factors and exacerbate negative outcomes for consumers. These factors can also be targeted to reduce the probability of consumers' detriment given that a risk factor exists.

13. It should be noted that economies worldwide are at very different stages of development, and consumer protection frameworks differ accordingly. In particular, there may be differences in way that risks occur, and the level of control or influence that regulators have over them, in developing as compared to developed economies.

14. Overall, the categorisation of risks developed in this report should assist regulators and supervisors in identifying the relevant risk factors by providing a starting point at either side of the spectrum, that is the problem observed (the outcome leading to consumer detriment) or the potential areas in which risks may emerge (the context and risk drivers). Through the identification of risk drivers and risk factors, risks can be better monitored and effective policy and regulatory interventions can then be implemented to prevent harm, to mitigate risks to financial consumer protection and/or warn other competent authorities, which may be better placed to address the underlying risk driver.

15. The risk categorisation set out in a table at Annex A is intended to form the basis for further work to develop a template risk dashboard, as noted as a next step in paragraph 5 above. Such a template risk dashboard will be aimed at providing guidance to jurisdictions as to the types of drivers of risk to consumers, including the potential indicators of those risks, and therefore allow jurisdictions to monitor those risks and identify emerging ones.

1. Framework on financial consumer protection risk drivers

1.1. Economic context

16. Economic risk drivers include GDP, interest rates, inflation, currency exchange risk and rates of unemployment.

17. In the current economic environment, a key economic risk driver relevant to most developed economies globally is the prolonged situation of low interest rates (although this does not directly affect most emerging economies). Low interest rates have an influence on the cost of borrowing, thereby contributing to the problem of high indebtedness. They can also lead to lower investment returns, potentially influencing the investment preferences of consumers and leading to a search for yield.

Low interest rates can lead to a lower cost of borrowing

18. Low interest rates, especially over a prolonged period, imply a lower cost of borrowing for consumers. This may encourage consumers to take on more debt as loans become more affordable. This could be exacerbated by the tendency for consumers to focus on their monthly payments only rather than the total loan amount and by the tendency for consumers to have a bias towards present-day consumption.

19. Increased borrowing could lead to unsustainable debt levels, where consumers are left with little disposable income to cover unexpected events or changes in personal circumstances, potentially leading to an increased reliance on high-cost revolving credit and payday loans. This would increase the risk of financial arrears, as well as make it more difficult for consumers to ever get out of debt. Consumers may also be less protected to the extent that these types of credit providers are less regulated.

20. The low interest rate environment could also present an increased risk of consumer detriment from taking on more variable interest loans, for which payments could become unaffordable if interest rates rise. (This risk is increased particularly where consumers do not fully understand the terms of their contract and the potential for payments to increase in the future, which is likely for consumers with low levels of financial literacy. Product disclosure statements which lack clarity or transparency further increase the risk that consumers will not understand the terms of their loan.)

Low interest rates can lead to lower returns on investment

21. Low interest rates also imply that savers will receive lower overall returns on their investment. A search for higher yields could lead consumers to invest more in products offering higher potential returns, but also higher risk. Additionally, these products could also present increased complexity, and consumers may not fully understand the risks that they are taking with the investment. Higher yielding products may also be less regulated or offer lower levels of protection, for example from compensation schemes. Consumer investment in higher yielding products and the underestimation of the risks that this

presents could be exacerbated by the tendency towards overconfidence, the extrapolation of high past returns into the future and consumers investing without professional advice.

22. The search for higher yields may also make consumers more vulnerable to misleading promotions and mis-selling, and investment in fraudulent products such as Ponzi schemes, as well as the risk of portfolio concentration in high complex/risky products.

1.2. Demographic context

23. The main demographic risk drivers that impact the consumer base for financial products are the increases in life expectancy, the growth in the global middle class, and the rise of tech-savvy younger generations while certain groups may become more vulnerable. The ageing of the population, driven primarily by increases in life expectancy, has put financial pressure on pension schemes and has led to a greater responsibility for financing retirement being placed on individuals, leaving them more susceptible to inappropriate financial advice or products. The growth in the global middle class means greater need for appropriate financial products and services to facilitate inclusive growth. The high technological literacy of younger generations creates a generational divide in terms of access to financial products and the risks that the increasing reliance on technology presents. Vulnerable populations face reduced access to financial services and education, and may face reduced cognitive capacity to make financial decisions as a consequence of their vulnerable situation.

Increased life expectancy may lead to reduced financial security in retirement

24. Increases in life expectancies in many developed countries have led to longer expected times spent in retirement (noting that there remain differences between developed and developing countries). [1] This has presented a challenge for the financial sustainability of public pension systems and defined benefit pensions, as pension payments need to be made for a longer period of time than had been expected. As a result of the underestimation of longevity, defined benefit schemes face an increased risk of insolvency, increasing the risk that consumers will lose their pension. Furthermore, the responsibility of financing retirement has shifted more towards the individual as public benefits have been cut and defined benefit plans closed. Consumers in defined contribution schemes must therefore take more financial decisions relating to saving for retirement and drawing down their savings during retirement.

25. The increase in life expectancy has contributed to low funding levels for many defined benefit pension schemes. This increases the risk that pension funds will not have sufficient assets to meet their payment obligations, and that they will either need to cut pension benefits to reduce their liabilities or become insolvent. This could result in many pensioners having lower levels of income in retirement than anticipated.

26. Increased responsibility for financing retirement, coupled with low levels of financial literacy, imply a potentially larger need for financial advice.[2] Higher reliance on financial advice leaves consumers more exposed to the risk of being recommended

1 *World Health Statistics 2016: Monitoring health for the Sustainable Development Goals,* World Health Organisation 2016

2 See for example *International Survey of Adult Financial Literacy Competencies*, OECD 2016

unsuitable products, with the resulting financial detriment having the potential to be very significant. Furthermore, elderly consumers may be less able to understand and assess the risks of the financial products that they are recommended, and may place increased trust in the advice they are provided compared to younger consumers leaving them more exposed to mis-selling.[3]

27. Consumers not seeking advice are more likely to make uninformed financial decisions, or simply rely on the advice of family or friends, increasing the likelihood that they will purchase unsuitable financial products which could significantly impact their well-being in retirement.[4]

28. Elderly consumers deciding what to do with their retirement savings may also be more susceptible to aggressive and/or misleading marketing or even fraud, which could result in the loss of their retirement savings.

Growth in global middle class

29. The "global middle class" is predicted to grow from 3.2bn in 2016 to 4.2bn in 2022 and 5.2bn in 2028, with most of the increase coming from Asia. This increase serves as a major force for economic growth through increased consumption and demand for goods and services.[5] This will include greater need and demand for financial products and services, many of which will be experienced by people for the first time. This creates both great opportunities and risks. Notably, at the same time, the "middle class" in many developed economies is shrinking.

Generational divide in technological literacy poses risks of protection gaps and exclusion

30. Younger generations who have grown up with technology and computing are likely to have much higher levels of technological literacy than older generations who have been less exposed to technology. This generational divide presents, on one hand, an increased exposure for younger generations to the risks from the use of potentially less regulated digital financial service providers. As the reliance on such services becomes the social norm, consumers may increasingly underestimate the potential risks, for example risks arising from freely providing personal data. On the other hand, this divide presents a potential for the financial exclusion of elderly individuals as financial services that rely increasingly on digital platforms continue to be used by a growing proportion of the population. Elderly consumers may struggle to adapt to these changes and to acquire the necessary skills to access digital platforms. This generational divide in technological literacy poses risks of protection gaps and exclusion.[6]

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[3] *Planning Tomorrow Today*, International Longevity Centre (2015) UK

[4] For example, the LV= State of Retirement Report 2016 reported that 6 in 10 pensioners took advice from non-professional sources.

[5] *The unprecedented expansion of the global middle class*, Global Economy & Development Paper 100, Brookings Institution, 2017

[6] *Ensuring financial education and consumer protection for all in the digital age*, G20/OECD INFE Report, OECD 2017

Vulnerability can lead to reduced access to financial services and poor financial decision-making

31. Vulnerable populations may face reduced or no access to financial services and/or education, resulting in financial exclusion and/or low levels of financial literacy, increasing the risk of making poor financial decisions. Furthermore, vulnerable populations are also likely to have high levels of daily preoccupations which leave little additional cognitive capacity to manage their finances properly, contributing to poor financial decisions such as retaining high levels of expensive debt.[7]

32. There are many factors, including social, economic and geographic, which may mean that a person or population group may be more vulnerable to disadvantage or financial exclusion warranting a greater level of consumer protection.[8]

1.3. Political context

Political uncertainty may increase the level of risk for consumers and businesses

33. Political uncertainty can impact on levels of consumer, as well as business confidence. The level and nature of such uncertainty can vary widely depending on the situation in any individual jurisdiction, and can include corruption problems, political interference in decisions carried out by financial sector providers or by financial sector authorities (e.g. state-owned financial institutions not being adequately supervised from a consumer protection perspective).

34. Uncertainty regarding political changes and the resulting economic and policy changes also presents an increased risk to consumers with respect to cross-border transactions. Policy changes implemented could potentially introduce opportunities for regulatory arbitrage which could result in protection gaps for consumers engaging in cross-border transactions.

1.4. Business context

35. The main risk drivers in the context of doing business are the business culture and the competitive environment. Business culture and the extent to which it aims to serve consumer interests can influence many factors which present risks for financial consumer protection, namely through product design, product pricing, sales practices, how financial intermediaries are remunerated and the reputation of financial products and service providers. This can be exacerbated by a greater reliance on third parties in the offering of financial services to consumers, because it can be more difficult for providers to monitor the actions of those third parties. The competitive environment can also influence product design and the pricing structures of products offered to consumers.

Poor culture can lead to inappropriate product design

36. The lack of a business culture which puts consumer interests first could lead to products being developed in the sole interest of maximising short-term profits, resulting in

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7 *Scarcity: Why Having Too Little Means So Much*, Mullainathan & Shafir (2013)

8 For example, the Global Partnership for Financial Inclusion recognises “underserved” groups including the poor, women, youth and people living in remote areas and “vulnerable” groups as including the elderly, migrants and forcibly displaced persons, see: *2017 Financial Inclusion Action Plan*, GPFI 2017

products which are not suitable for the target market or which are overly complex or risky. This exposes consumers to increased risk of mis-selling, particularly with complex products which are difficult to understand and where information asymmetries exist. Low levels of financial literacy, including the impact of behavioural biases, can also amplify the disadvantages of inappropriately designed products.

Poor culture can lead to non-transparent pricing structures

37. Business culture can also lead to pricing structures which are not transparent to consumers, making it difficult for consumers to understand the full cost of the product and choose the best value product for their needs. Consumer behavioural biases, for example the tendency for consumers to focus on headline prices, coupled with ineffective disclosure can also leave them more vulnerable to paying for additional products or features which they may not need.

Poor culture can lead to poor sales and lending practices

38. Poor sales practices can also result from a lack culture which does not aim to serve consumer interests. First, the advertising of the product could be misleading or even aggressive, putting pressure on consumers to purchase products that do not meet their needs or that they do not understand. The cross-selling of products could also put pressure on consumers to purchase products that they may not necessarily need, particularly where the consumer views the salesperson as an expert or otherwise trusts their suggestions. Consumers' susceptibility to add-on pricing, where the additional cost seems insignificant relative to the initial price, may also make them more susceptible to cross-selling. Failure to take adequate steps to determine or monitor suitability for clients could also result in the purchase of inappropriate products, and inaccurate, unclear or misleading product information could result in consumers purchasing products that they do not completely understand.

39. Poor lending practices could contribute to the high indebtedness of consumers, particularly where contract terms are not clear and given the tendency for consumers to focus only on the amount of the initial payment. High indebtedness can cause significant financial problems for consumers by leading to the use of revolving credit and/or falling into financial arrears. This detriment could be compounded through poor and/or aggressive debt-collection practices, which could increase the vulnerability of consumers in difficult financial situations.

Poor culture can lead to remuneration structures which present conflicts of interest

40. Remuneration structures which reward profit over customer service can present conflicts of interest with respect to the product which is recommended or sold, potentially resulting in the mis-selling of products or higher costs to consumers. Such structures can arise by rewarding or punishing staff (in financial or non-financial terms) solely or heavily based on whether they meet sales targets, Commission-based structures, for example, could encourage the sale of more expensive products or product churning, encouraging consumers to switch products even when it is not in their interest to do so.

Poor culture can lead to a negative reputation and lack of consumer confidence and trust

41. If prevalent, poor culture can affect not only the reputation of the provider in question but also the reputation of the product or financial service being provided. This could result in a lack of consumer trust in the financial system, reducing consumer willingness to purchase financial products and services and take part in the financial system.

The competitive environment can lead to inappropriate product design

42. In addition to culture, the competitive environment can have significant impacts on product design and pricing. A lack of competitive pressure could lead to a lack of market efficiency and product innovation, resulting in products which do not meet the demonstrated needs of consumers.

43. Alternatively, high competitive pressure could result in overly complex products that consumers do not fully understand as providers attempt to endlessly tweak their offer to differentiate themselves from competitors. This could also lead to too much optionality with respect to product features, overwhelming the consumer with choice and leading them to choose a sub-optimal product. Complex product features and combinations ("bundling") can also make it harder for consumers to assess the value of each component part, as well as to underestimate or pay limited attention to terms and conditions which may apply to those specific parts.

Lack of competition can lead to over-priced products and services

44. A lack of competitive pressure can also clearly lead to high costs for consumers, as providers are not incentivised to reduce the costs of their products and services to gain market share. The tendency of consumers to stay with their current providers and not shop-around could contribute to a lack of competition among providers.[9]

1.5. The context of innovation

45. Technological innovation brings many opportunities for consumers to benefit, but is also a key driver of risks to financial consumer protection as financial services become increasingly digitalised. The increased accessibility of financial services and products presents new challenges from a consumer behaviour perspective, while new business models and the speed of innovation present challenges in ensuring that the regulation in place is adequate. The increased use of algorithms and big data introduce new risks to financial services, while the increased risk of cyber-attacks goes hand in hand with the increased reliance on technology.

Technological innovation has increased the accessibility of financial services[10]

46. The ease with which consumers can now access and purchase financial products has increased dramatically with the use of technology due not only to more user-friendly platforms but also the increased speed with which transactions can be decided upon and

9 *Ensuring suitable products for Consumers in Life Annuity Products and their Guarantees*, OECD 2016

10 *Ensuring financial education and consumer protection for all in the digital age*, G20/OECD INFE Report, OECD 2017

executed. The reduced barriers to transacting could potentially lead consumers to do so more often than is in their best interest, either investing in unsuitable products or incurring excessive fees from frequent switching. The ease with which consumer credit can be accessed could add to the existing problem of high-indebtedness, as consumers face fewer barriers to immediate consumption. Furthermore, the rapidity of transactions can lead to an increase in uninformed financial decisions, as consumers now only have to press a button to skip over relevant disclosures and purchase financial services and products. This lack of attention also presents risks that consumers will become more flippant about sharing personal data, especially as the use of digital platforms becomes the norm which could provide a false sense of security. This could increase risks of identity theft and fraud. The use of technology also facilitates cross-border transactions, complicating ability of a given jurisdiction to protect its consumers in a consistent manner.

Technological innovation has led to new business models for delivering financial services

47. The development of new business models has also presented a challenge for existing regulation to remain relevant and effective in protecting consumers. New business models may not fit neatly into a particular financial sector, presenting challenges for jurisdictions with a more sectoral approach to regulation and supervision. New business models may also create a lack of transparency with respect to the business operations and how profits are made, potentially making the identification of risks more difficult or reducing the gains in cost efficiency that are passed to consumers. Where multiple players are involved in the supply chain, consumers may find it difficult to identify who is liable in the event of a complaint unless addressed by regulation, particularly in the case of cross-border transactions.

48. The new products and services being offered challenge traditionally held views and definitions and therefore how existing regulation should be applied. Robo-advisors for example, which provide automated investment recommendations based on a variety of consumer inputs, challenge the definition of what constitutes financial advice and therefore the protections to which consumers are entitled. Crowdfunding and peer-to-peer lending challenge the traditional definition of what constitutes a credit counterparty and what obligations each counterparty is obliged to meet. New distribution and delivery channels may not be covered under the existing definitions for regulation, and the increased globalisation of financial services presents a challenge for regulating by jurisdiction. Finally, many of these new business models have yet to be tried and tested in the long-term, presenting an increased risk of the unsustainability of these models and that consumers will not be adequately protected in the event that the business fails.

The speed of technological innovation presents challenges for ensuring appropriate regulation and protection

49. The high speed of technological innovation presents a huge challenge for regulators and supervisors to adapt regulations to the innovation and insure that not only is the regulation in place adequate to protect consumers, but also that it does not present a barrier to innovative solutions which consumer could benefit from. It also presents the risk of knowledge gaps, both with respect to the technological literacy of consumers using the technology, but also the expertise of regulators and supervisors to be able to identify and mitigate the risks that the technology presents. Thus the rapid pace of innovation presents

significant risks of protection gaps for consumers and the potential financial exclusion of those who are less comfortable with technology, particularly the elderly.

Technological innovation has led to an increased reliance on algorithms

50. Algorithms underlie the digital platforms which are providing financial tools and services, and will therefore drive many of the consumer outcomes resulting from the use of these services. While the consistency that algorithms can provide in the services offered to different consumers can be positive, there are risks to the extent that human error was made or biases introduced in the development of such algorithms and leads to the malfunction or detrimental functioning of the service or product. An introduced bias could also reflect commercial drivers or arrangements, which have an impact on the independence and quality of recommendations generated.

51. Furthermore, as algorithms rely on inputs, there could be a risk of the oversimplification of the inputs used, resulting in inappropriate recommendations or products for consumers. For example, investment advice provided by a robo-advisor based only on the input of the age of the consumer may not be appropriate for the financial goal that the consumer is investing for or given their overall financial situation. Alternatively, algorithms could also become overly complex, resulting in a black box, “herding” in terms of outcomes, and making supervision even more difficult.

Technological innovation has led to the increased use of big data

52. Technology has increased the amount of data that can be collected about individuals, and the ability for financial providers to aggregate and analyse these large amounts of data for underlying trends to inform their product offers and pricing structures. While this can lead to products which are better tailored to their specific market, risk profiling could potentially exclude certain populations from the market. This is a particular risk for insurance, as higher risk populations could be priced out of the market (or denied access altogether) rather than be subsidised by a broader pooling of risk. The use of big data could also result in unjustified discrimination to the extent that the underlying trends in the data reflect the subjective biases of humans, undermining algorithms' potential for objectivity.

53. Big data can also be used to develop personalised marketing strategies which target a consumer’s consumption tendencies or their vulnerabilities, increasing the risk of mis-selling.

54. The use of big data also presents risks relating to privacy, as who owns the personal data being mined is not always clear and individuals are not necessarily informed for the use of their data.

Technological innovation has led an increased risk of cyber-threats

55. The increased reliance on technology in financial services and the increased amount of personal data stored though digital devices leads to an increased threat of cyber-attacks, which can cause system disruptions, loss of data leading to significant financial losses and frauds. The potential theft of personal data increases the risk of identity theft for consumers. This increased risk could undermine consumer trust in digital platforms, particularly following significant breaches widely reported in the media. This could make consumers reluctant to use digital financial services and benefit from the potential cost efficiencies that they can offer.

2. Aligning financial consumer protection risks with the High-Level Principles on Financial Consumer Protection

56. A framework for the management of risks to financial consumer protection must involve the identification, monitoring, and mitigation of risks. The risk categorisation presented in the previous section can be seen as a guide for the identification of risk. This section aligns these risks with the High-Level Principles, proposing potential indicators for risk monitoring and highlighting how the Principles can be applied to mitigate these risks.

57. The High-Level Principles can be applied to address different aspects presented in the framework above, whether a common risk driver, factor, or consumer outcome. The aim of the potential intervention to manage the risk, however, may differ and will largely be dependent on the scope of the mandate of the financial consumer protection agencies. In this respect, interventions can be designed 1) to target the source of risk to prevent harm from occurring (e.g. the specific risk driver or factor); 2) to target the factors contributing to the negative effects of the risk factor to mitigate the risk and reduce the likelihood of harm (e.g. behavioural biases, information asymmetry, financial education); and/or 3) to target the resulting harm caused and reverse the detriment (e.g. redress). Certain principles tend to lend themselves more to specific aims. For example, Principles 4 and 5 target primarily the contributing factors of information asymmetry and low financial literacy which relate to preventive and mitigation measures, whereas Principle 9 aims primarily to provide a means to correct any consumer determent caused.

58. The following sub-sections aligns the risks identified in the previous section with the High-Level Principles, highlighting the Principle's importance in the mitigation of consumer risks and the relevant effective approaches with which to do so. The mitigation strategies, however, remain general and are meant to provide only an indication of the type of intervention which could be made to address the risks in question. More specific and detailed risk indicators and mitigation strategies could be developed in future work based on country practices.

2.1. Legal, Regulatory and Supervisory Framework

59. Having a risk management framework in place is fully aligned with Principle 1 to have a legal, regulatory and supervisory framework in place which reflects the ongoing developments within the financial sector, and in particular to have a process in place to monitor risks and identify emerging risks at both a macro and micro level.

60. Risk assessment is also needed to support proportionate risk-based approaches which prioritise supervisory effort according to the nature and scale of the risks presented.

61. A risk management framework is essential for regulation to be able to adapt to the changing financial environment and to ensure that regulation remains effective in protecting consumers from fraud, abuse and errors. The involvement of a wide range of stakeholders in risk identification needs to be facilitated and integrated into the process in order to be

comprehensive and incorporate a wide range of views and expertise in the identification of emerging risks and their drivers.

2.2. Role of Oversight Bodies

62. The oversight bodies responsible for financial consumer protection should have a risk management framework in place and ensure the effective application of risk identification, mitigation and monitoring. The co-operation of these bodies with other authorities, both across sectors and across jurisdictions, is essential to be able to identify emerging g risks and to address the risks which could result in protection gaps or the reduced effectiveness of regulation or supervision. These bodies also need to have adequate resources and capabilities to address emerging risks which may require additional knowledge or expertise and to be able to support enforcement action.

63. Ensuring that there are no regulatory gaps for financial consumer protection is particularly relevant for the risk factors of new business models and the speed of innovation driven by advances in technology. Younger generations relying heavily on digital platforms to access financial services may also be more vulnerable to any existing regulatory gaps. Mapping exercises and the monitoring of new unregistered businesses could help to provide an indication of where risks may arise.

64. International co-operation can help to mitigate the risk that political changes and the resulting impact on policy will not result in a misalignment of policies that could result in protection gaps for consumers. Jurisdictions where entities engage in frequent cross-border transactions could provide an indication of where there could be potential regulatory arbitrage.

65. Oversight bodies should have the necessary expertise to effectively address the risks presented by the use of new technologies and that they keep this knowledge up-to-date in order to keep up with the speed of innovation occurring.

66. Oversight bodies also need to have sufficient resources to support enforcement action. Enforcement is an important tool for preventing potential fraud aimed at consumers who may be targeted, such as those baited by the potential to earn higher returns or elderly consumers deciding how to invest their retirement savings. Enforcement can act as a deterrent and ensures that the responsible entities are held accountable for their actions. Such enforcement can also help to uphold the reputation of financial services and maintain consumer trust and confidence in the financial system. Consumer surveys may provide an indication of the extent to which trust in the financial system may be a concern.

2.3. Equitable and Fair Treatment of Consumers

67. One of the main objectives of consumer protection policies is to provide fair and equitable access to financial products and services, ensuring a high level of disclosure and transparency of the terms and conditions, as well as fair business relations. Such policies are therefore central to preventing false, misleading or self-interested sales practices as well as discrimination and financial exclusion.

68. First, policies to prevent communications or advertising which misrepresent probable outcomes are important to protect consumers against fraud and the exploitation of consumers especially those who may be in more vulnerable situations, such as the elderly investing for their retirement. Consumers should also be protected from overly aggressive marketing or high-pressure sales, which can be mitigated, for example, through no-call lists

or allowing for a cooling-off period for consumers to change their minds. Consumer complaints, data from consumer redress mechanisms and reports of fraud are key indicators to monitor such risks.

69. Treating consumers fairly also requires accommodating their individual situations including developing appropriate products and services for particular target groups as well as universal products which are simple to access so as not to exclude vulnerable groups. This could include ensuring that older generations who are less tech-savvy can still access financial services and advice via traditional channels. The closure of physical bank branches could provide an indication of areas where this may become a problem. Practices, such as those for debt collection, need to be fair so as to not aggravate vulnerable situations for consumers.

70. New challenges to ensuring equitable treatment present themselves with the use of big data, which can lead to risk profiling, exclusion or discrimination. Policy makers will need to reflect on how far risk profiling can go in order to maintain consumer access to insurance markets in particular, and will need to ensure that providers have procedures in place to identify when the use of big data leads to unjustified discrimination so that it can be corrected. However, while benchmarking prices could potentially provide an indication of unfair treatment, detecting discrimination as a result of the use of big data will be a challenge.

2.4. Disclosure and Transparency

71. Policies on disclosure and transparency are essential to assist consumers to understand the financial products they purchase, as far as possible, and what features and services they are paying for. Disclosure also helps to address the information asymmetry that can heighten the risk to consumers from other risk drivers, thereby mitigating their potential negative impact. However, the design of disclosure, and the expectation of what it can achieve, needs to also account for behavioural biases of consumers to effectively mitigate risk.

72. Disclosure requirements are a common way to ensure that a consumer has accurate and complete information about a financial product or service and prevent them from ending up with a product that is unsuitable. However, in order to be effective given the prevalence of low levels of engagement, varying levels of financial literacy and to mitigate the potential negative influence of behavioural biases, product disclosures may need to highlight the most important product information and facilitate consumer comprehension. This is particularly true to help ensure that consumers understand the risk that they may lose money or that payments could increase. Risk warnings may also be implemented to this effect.

73. Standardised disclosures and price comparisons can also facilitate consumers to choose the best value product for their needs. Highlighting the costs of products can be particularly important to make consumers aware of the high interest payments on revolving credit and payday loans, for example. Furthermore, disclosures which facilitate price comparisons can help to maintain pressure on providers to offer competitive rates. Transparency in costs is also important to make sure consumers know what they are paying for even with the changing business models driven by technological innovation.

74. Any conflicts of interest that the financial intermediary faces should also be disclosed to consumers, for example conflicted remuneration that financial advisors may receive from commission payments including for the provision of tied products.

Notwithstanding that disclosure has often been shown to be ineffective at improving consumers’ decision making with respect to conflicts of interest, evidence shows that disclosure can still be valuable in helping to mitigate the conflicts of the advisor.

75. New distribution channels driven by technological innovation mean that disclosures will need to be made more effective, i.e. simple and limited to the salient information, to counter the potential impulsiveness of consumers in light of the increased accessibility of financial products. Disclosures of these channels will need to find ways to engage consumers to understand the information being disclosed, perhaps with formats such as video.

76. Regardless of the objective of disclosure, the format used should be tested with consumers in order to determine its effectiveness in achieving the desired outcome.

2.5. Financial Education and Awareness

77. Low financial literacy is a contributing factor to many of the risks described in this report, particularly those driven by factors in the economic, demographic and business contexts, but has relevance for all contexts. As such, supporting the financial literacy of the population could mitigate consumer risks by assisting consumers to make more informed financial decisions in their own best interest, leaving them less susceptible to risks leading to over-indebtedness or to the purchase of an unsuitable product. In addition, enhancing the awareness of risks and actions that consumers can take can also help to reverse negative outcomes caused by consumer risks.

78. Financial education can play a role in addressing each aspect of risks to financial consumer protection, from preventing consumer detriment, reducing the influence of risks which can lead to consumer detriment and helping consumers to reverse any detriment that they have suffered. Teaching financial education at a young age in schools can help to reduce the risk exposure of consumers by making them better able to make financial decisions later in life which are in their best interests. In order to be effective in the new digital environment, financial education strategies should be innovative and well-designed, with clearly identified goals, specific targets identifies and flexible to ensure the safe use of digital financial services. Levels of financial literacy can be monitored to determine the effectiveness of financial education initiatives.

2.6. Responsible Business Conduct of Financial Services Providers and Authorised Agents

79. The principle of responsible business conduct targets directly the culture of the financial intermediary, aiming for the culture to serve consumer interests. This principle therefore aims directly to prevent risks relating to a poor culture, namely through product design, sales and lending practices, the conflicts of interest faced by financial advisors, and the reputational risks that poor culture can generate. This principle is also applicable with respect to the mitigation of consumer detriment relating to governance issues regarding the reliance on algorithms as well as the use of big data.

80. First, responsible business conduct implies designing and advising on financial products that are appropriate for consumers. To further this aim, duty of care standards that require intermediaries to determine the suitability of products for their clients are also often used to protect consumers from mis-selling or otherwise purchasing products which are unsuitable. Advisors must also have the appropriate knowledge to provide suitable advice.

Product providers may also be required to ensure that products being developed are generally suitable for their target market, which could involve the imposition of minimum or maximum limits on product features, for example limits on loan terms or loan-to-value ratios to mitigate the risk of consumers becoming overly indebted. The interplay between such approaches and other policies, e.g. macro prudential objectives should also be considered.

81. To further mitigate conflicts of interest that financial advisors may face in light of their remuneration structures, certain limits may also be placed on the type of remuneration they can receive, for example imposing caps or bans on certain types of compensation such as commissions or kickbacks. It should also be made clear what costs can be recovered by the consumer in case of early repayment of a loan or early termination of the contract (upfront/recurring fees).

82. Industry and professional standards could help to make serving consumer interests the norm, mitigating the risk of a negative reputation for the financial sector and enhancing consumer trust and confidence.

83. Technological innovation presents new challenges with respect to making sure that consumer interests are served, as the design of algorithms and use of big data could result in financial products which are not suitable or are poor value to the consumer. Financial providers should ultimately be responsible for any arrangement and input concerning product design, including standards for algorithms developed by third parties, while developers of algorithms should be subject to relevant qualification standards so they may appropriately judge if the inputs used result in suitable and beneficial financial outcomes for consumers. The development process should also be subject to strict controls and governance. Providers must also ensure that their product offerings resulting from their use of big data remain suitable for clients and that the price remains fair in light of the product's goals (e.g. insurance via the pooling of risk).

84. For all risks relating to business conduct and the extent to which businesses are acting to serve consumer interest, consumer complaints data (internal to companies as well as external) are a key source of information to monitor these risks and identify areas where there may be potential problems.

2.7. Protection of Consumer Assets against Fraud and Misuse

85. Measures to protect consumers' assets against fraud and misuse are necessary to prevent fraud from occurring. Measures are also needed to protect consumers against fraud and against any detriment in the event that the financial service provider becomes insolvent or otherwise needs to wind up its business.

86. The economic context of low interest rates could lead to an increased risk of fraud as suppliers as well as consumers seek ways to earn higher returns on assets. The demographic context also presents an increased risk of fraud as elderly consumers look to invest their retirement savings and pension funds seek ways to meet their liabilities. Appropriate prudential oversight needs to be in place to protect consumers and prevent them from being taken advantage of and/or losing a significant portion of their assets for retirement.

87. Technological innovation also gives rise to the increased risk that consumers' assets could be misused or lost due to the new business models that are emerging, particularly those with opaque structures where hidden risks could lie. These digital platforms should be

subject to similar requirements as their more traditional counterparts to join compensation schemes to protect consumers' assets in the event that these business models fail.

88. Increased reliance on technology also presents an increased risk of cyber-attacks which could lead to financial loss for consumers and the misuse of their data to perpetuate fraud. Such risks require increased vigilance and expertise to counter and to uphold consumer trust in using digital financial services. To this end, appropriate measures also need to be taken to ensure that consumers are compensated for losses resulting from cyber-attacks.

89. Reports of fraud, cyber-crime and consumer complaints can be monitored to identify areas for which consumer protections may not be sufficient to prevent such problems from occurring.

2.8. Protection of Consumer Data and Privacy

90. Technological innovation is the main driver of increased risks to the protection of consumer data and privacy. The potential for individuals to more easily give out personal data as a result of the increased ease of accessing financial services and products will require ensuring that consumers remain informed of the implications of sharing their data and that measures are in place to adequately protect data. Data sharing laws may also need to be reviewed in light of the rapid innovations occurring to ensure that they still remain relevant and that they do not present impediments to certain beneficial developments such as RegTech, or technological solutions to facilitate regulatory compliance. The increased use of big data may also require a review of privacy rules, as the use of big data may push the boundaries of the laws in place and present a challenge given the blurred lines of data ownership and the consent for its use. Consumer surveys regarding their comfort and willingness to share their personal information could potential inform where the line should be drawn with respect to the use of this data.

91. Cyber-threats, in particular, present a challenge to ensuring that consumer data remains protected. New approaches to cyber security will be required, and both financial institutions and regulators will need to rapidly evolve to stay on top of these risks and make use of the latest technology and solutions to protect consumer data. Processes will also need to be in place to rapidly contain and mitigate the risk in the event that a cyber-attack occurs. The frequency and type of cyber-attacks reported will need to be monitored and studied to stay on top of this risk.

2.9. Complaints Handling and Redress

92. Having complaints handling and redress mechanisms in place is key to mitigating the risk of mis-selling, regardless of the driver of this outcome. Such mechanisms serve to reverse consumer detriment in the case that they are knowingly provided with an unsuitable product. Furthermore, they can be a rich source of information to aid in the identification and monitoring of risks to financial consumer protection and prioritising regulatory/supervisory efforts.

93. Complaints handling and redress requirements need to be equally applicable to digital financial services, however. In addition to protecting consumers from the risk of loss due to being mis-sold a financial product, these mechanisms can also compensate consumers who suffered detriment due to errors in the services provided. This could be an important aspect with the increased reliance on algorithms to provide redress to consumers

suffering loss due to errors in the coding of the algorithms underlying the digital financial services being provided.

94. Having such mechanisms in place can also serve to mitigate the risk of a loss of consumer confidence and trust, as consumers will know that they have access to a fair procedure in the case of unfair or incompetent treatment.

2.10. Competition

95. Fostering a competitive environment helps to ensure consumers have access to appropriate products at fair prices. This is most relevant to prevent consumer risks relating to product design and pricing which are driven by the competitive environment itself, but also relevant to potential disruption from technological innovations and the use of big data.

96. Healthy competitive environments in financial services will help to promote the development of innovative products which efficiently meet the needs of the market at fair prices to consumers. In addition, facilitating the comparison of different types of products and their features, particularly complex products, can help consumers choose the best product for their needs and mitigate the negative risks from product design in a competitive environment. Benchmarking and international studies could help to provide an indication of whether markets are in-line with expected prices and international trends in the types of products and services available to consumers.

97. Inappropriate regulation as a result of new business models and the speed at which technology is changing the way financial services and products are provided could impede competition from new entrants, preventing more efficient approaches to financial services from being provided. Policy makers need to ensure that regulation allows for more efficient and competitive models to be developed. Regulatory sandboxes are an innovative approach to making sure that regulatory requirements are appropriate for companies with new business ideas that have the potential to provide real consumer benefit.

98. The use of big data could lead to increased price competition, as pricing and product design becomes more individualised. In order to ensure that products remain accessible and that consumers maintain the ability to easily change products, such individualisation in product design and pricing may need to be monitored and potentially limited to some extent.

Annex A. CATEGORISATION OF RISKS TO FINANCIAL CONSUMER PROTECTION

Economic context

Risk driver	Risk factor	Outcome	Detriment	Contributing factors	Potential indicators	Mitigating actions	Risk Target	Relevant HLP
Low interest rates	Lower cost of borrowing	High indebtedness	Revolving credit use, e.g. payday loans with high interest rates	Present bias, focus on payment rather than total amount; low financial literacy; information asymmetry	Levels of consumer debt;	Effective disclosures highlighting high costs	Prevent/Mitigate	4,5
			Remaining in debt	Consumer vulnerability; Low financial literacy	Debt-to-income ratio over time	Work with providers to restructure loans for vulnerable groups	Prevent/Mitigate	5
			Risk of higher future payments with interest rate changes	Present bias, focus on payment rather than total amount; low financial literacy; information asymmetry	Foreclosures by type of loan	Clear disclosure of contract terms and risk of the increase of payments, floors, rate substitution clauses etc.; product features eg minimum repayment structures, fixed rate loans	Prevent/Mitigate	4,5
	Lower returns on investment	Search for yield	Sale/marketing of overly complex or risky products; hidden costs	Low financial literacy; information asymmetry; overconfidence, reliance on past returns	Increased availability of high yield products; Consumer complaints	Limit certain complex products available for retail investment; effective disclosure; requirement to conduct assessment of the consumer's risk profile;	Prevent/Mitigate	4,5

Risk driver	Risk factor	Outcome	Detriment	Contributing factors	Potential indicators	Mitigating actions	Risk Target	Relevant HLP
			Less regulated products with less protection; not covered by compensation schemes	Information asymmetry; overconfidence, reliance on past returns	Consumer complaints	Limit certain complex products available for retail investment; effective disclosure; requirement to conduct assessment of the consumer's risk profile	Prevent/Mitigate	4,7
			Fraud, Ponzi schemes	Overconfidence, reliance on past returns	Reported fraud; consumer complaints	Accountability and enforcement	Prevent	2,3,7

Demographic Context

Risk driver	Risk factor	Outcome	Detriment	Contributing factors	Potential indicators	Mitigating actions	Risk Target	Relevant HLP
Increases in life expectancy	Solvency of pension funds	Reduction or loss of pensions	Insufficient income to finance retirement		Supervision; Risk-based funding levels		Prevent	2,7
	Insufficient savings for retirement;	Longer work life; Poverty in old age; pressure on state; reliance on friends and family	Insufficient income to finance retirement	Behavioural biases; low financial literacy; inadequate retirement savings infrastructure/incentives	People working longer; consumer complaints	Encourage retirement saving from an early age; product design; incentives to encourage saving; financial literacy	Prevent/Mitigate	3, 5, 6
	Increasing responsibility for retirement financing	Reliance on financial advice	Unsuitable products, mis-selling; inappropriate financial advice	Behavioural biases; Low financial literacy; decreased cognitive ability/increased trust of older people; reliance on friends and family	Consumer complaints; mystery shopping results; supervision of market participants	Duty of care; qualification requirements	Mitigate/Reverse	5,6,9

Risk driver	Risk factor	Outcome	Detriment	Contributing factors	Potential indicators	Mitigating actions	Risk Target	Relevant HLP
		Uninformed financial decisions	Unsuitable products	Low financial literacy; decreased cognitive ability of older people; reliance on friends and family	Consumer surveys; consumer complaints; mystery shopping results	Effective disclosure requirements; targeted educational initiatives	Prevent/Mitigate	4,5
		Fraud; misleading or aggressive sales practices	Loss of retirement savings, mis-selling	decreased cognitive ability/increased trust of older people; information asymmetry	Reported fraud; consumer complaints; supervision of market participants	Accountability and enforcement; duty of care	Prevent/Mitigate/Reverse	2,3,7,9
Technological literacy	Uneven technological literacy	Younger population fully into tech	Protection gaps	Social norms	Unregistered/unlicensed providers	Sandboxes, innovation hubs	Prevent	2,7
		Less-tech savvy population eg due to age or other factors	financial exclusion	Cognitive decline, lack of access to technology, people living with a disability	Physical branch closures; penetration of digital financial services; technological literacy measures	Educational initiatives; young-old mentoring	Prevent/Mitigate	3
Vulnerability	Reduced access to financial services	Financial exclusion	Financial exclusion	Low financial literacy	Unbanked	Improve access; support greater financial literacy	Prevent/Mitigate	3, 5
	Reduced access to education	Low financial literacy	High indebtedness; unsuitable products		Financial literacy measures	Financial education initiatives; apps and gamification to improve knowledge	Prevent/Mitigate	3,5
	Reduced mental bandwidth	Poor financial decisions, e.g. over-indebtedness; vulnerable to exploitative conduct	Revolving credit use, remaining in debt. Unsuitable products		Demographic studies on revolving credit use	Simplify processes and documentation; process assistance	Prevent/Mitigate	3

Risk driver	Risk factor	Outcome	Detriment	Contributing factors	Potential indicators	Mitigating actions	Risk Target	Relevant HLP
	Low income	Inappropriate or expensive financial products and services; unable to save for future	High cost products and services; revolving credit use	Lack of appropriate financial products and services (e.g. credit products, risk insurance, retirement savings) Payday loan use	Payday loan use	Appropriate and accessible products and services	Prevent/Mitigate	3

Political context

Risk driver	Risk factor	Outcome	Detriment	Contributing factors	Potential indicators	Mitigating actions	Risk Target	Relevant HLP
Political uncertainty	Policy changes	Misaligned policies	Protection gaps		Cross-border transactions by jurisdiction	Cross-border cooperation	Prevent/Mitigate	2

Business context

Risk driver	Risk factor	Outcome	Detriment	Contributing factors	Potential indicators	Mitigating actions	Risk Target	Relevant HLP
Culture (serving consumer best interests)	Unsuitable Product design	Overly complex or risky products	Unsuitable products, mis-selling	Low financial literacy, information asymmetry; marketing	Supervision; Consumer complaints	Limits on certain complex products; requiring that products are suitable for target market	Prevent/Mitigate	4,5,6,9
	Pricing structures	Lack of transparency of fees	Paying for unwanted features	Information asymmetry; focus on headline cost	Supervision; Consumer complaints; benchmarking	Effective disclosure requirements; standardised product comparisons	Prevent/Mitigate	4

Risk driver	Risk factor	Outcome	Detriment	Contributing factors	Potential indicators	Mitigating actions	Risk Target	Relevant HLP
	Sales/lending practices	Misleading or aggressive marketing and promotions; direct calls	Unsuitable products	Information asymmetry; cognitive limitations when faced with high pressure sales	Supervision; Consumer complaints	Limit certain products from retail markets; no-call lists; cooling-off period	Prevent/Mitigate	3,6
		Cross-selling	Unsuitable products; higher costs	Information asymmetry; reference bias; consumer trust	Supervision; Consumer complaints	Effective disclosure requirements; cooling-off period	Prevent/Mitigate	4,6
		Failure to take adequate steps to determine and monitor suitability	Unsuitable products	Lack of awareness of duty of advisor/sales person; low financial literacy, present bias, consumer trust, cognitive limitations	Supervision; Consumer complaints	Duty of care, qualification requirements	Prevent/Mitigate	3,5,6
		Inaccurate, misleading, or unclear pre-contractual information	Unsuitable products	Information asymmetry	Supervision; Consumer complaints	Effective disclosure requirements	Prevent/Mitigate	3,4
		High-indebtedness	Financial arrears; revolving debt; use of payday loans	Lack of awareness of duty of advisor/sales person; low financial literacy, present bias, consumer trust, cognitive limitations; focus on monthly payment	Supervision; Indebtedness levels; consumer complaints	Limits on loan terms; limits on loan-to-value ratios; duty of care; effective disclosure	Prevent/Mitigate	4,5,6
		Poor debt collection practices	Increased vulnerability	Low financial literacy	Supervision; Consumer complaints	Work with providers to restructure loans for vulnerable groups and provide access to forbearance	Prevent/Mitigate	3,5
	Remuneration and conflicts of interest	Conflicted sales and advice	Unsuitable products; higher costs; mis-selling	Information asymmetry; lack of awareness of duty of advisor; consumer trust; low financial literacy	Supervision; Sales of high-cost products; consumer complaints	Duty of care standards, effective disclosure, remuneration limits	Prevent/Mitigate/Reverse	4,5,6,9

Risk driver	Risk factor	Outcome	Detriment	Contributing factors	Potential indicators	Mitigating actions	Risk Target	Relevant HLP
Competitive environment	Reputation	Lack of consumer trust and confidence	Undermined financial system	Availability bias; poor selling practices/misspelling	Consumer surveys; consumer complaints	Industry and professional standards; accountability and enforcement	Prevent/Mitigate/Reverse	2,6,9
	Product design	Lack of market efficiency, innovation	Unsuitable products	Low financial literacy, information asymmetry, choice overload	Supervision; Benchmarking; International studies	Product comparisons; standardised disclosures	Prevent/Mitigate	4,5,6,10
		Complex or risky products	Unsuitable products, mis-selling	Low financial literacy, information asymmetry	Consumer complaints	Simplified and standardised disclosures	Prevent/Mitigate	4,5,6,10
	Pricing structures	High costs	Expensive products and services	Information asymmetry; choice overload; inertia	Benchmarking	Product comparisons; standardised and/or more salient disclosures	Prevent/Mitigate	4,5,10

Innovation context

Risk driver	Risk factor	Outcome	Detriment	Contributing factors	Potential indicators	Mitigating actions	Risk Target	Relevant HLP
Technological Innovation	Increased ease of accessibility of financial services and products	Overconsumption	Unsuitable products; high costs	Information asymmetry; impulsiveness	Frequency of transacting	Delays to execute transactions for certain products; suitability/concentration risk assessment	Mitigate	4,5
		High indebtedness	Financial arrears; revolving debt	Cognitive limits, low financial literacy, impulsiveness	Debt-to-income ratios	Effective disclosures; targeted educational initiatives	Prevent/Mitigate	4,5

Risk driver	Risk factor	Outcome	Detriment	Contributing factors	Potential indicators	Mitigating actions	Risk Target	Relevant HLP
		Uninformed financial decisions	Unsuitable products	Reliance on friends and family	Consumer surveys	Effective disclosures, targeted educational initiatives	Prevent/Mitigate	4,5
		Lack of attention or disengagement, e.g. easily give out personal data	Misuse of personal data	Lack of information and knowledge of rights and responsibilities of use of digital platforms; social norms; cognitive limits	Consumer surveys	Effective disclosure; data protection rules	Prevent/Mitigate	4,5,8
		Increased cross-border transactions	Protection gaps		Cross-border digital transactions	International cooperation to avoid regulatory arbitrage and support enforcement efforts	Prevent	2
	New business models	Inappropriate regulation of entities	Protection gaps	Information asymmetry	Industry consultation/surveys	Sandboxes, innovation hubs	Prevent	2,10
		Cross-sectoral entities	Protection gaps		Industry consultation/surveys	Regulatory cooperation and consistency	Prevent	2
		Opaque business operations	Hidden risks	Information asymmetry	Industry consultation/surveys	Effective disclosure	Prevent/Mitigate	4,7
		New profit sources	Cost-savings do not flow through to consumers	Information asymmetry	Benchmarking	Effective disclosure	Prevent	4
		New products and services (e.g. robo-advice, crowdfunding, peer-to-peer lending)	Protection gaps		Mapping exercises; surveys	Sandboxes, innovation hubs; new product risk assessment and approval	Prevent	2
		Cross-border transactions	Protection gaps		Cross-border digital transactions	International cooperation to avoid regulatory arbitrage and support enforcement efforts	Prevent	2

Risk driver	Risk factor	Outcome	Detriment	Contributing factors	Potential indicators	Mitigating actions	Risk Target	Relevant HLP
		Business failure	Loss of financial assets		Profits	Compensation schemes	Prevent	7
	Speed of innovation	Inappropriate regulation of entities	Protection gaps	Information asymmetry	Industry consultation/surveys	Sandboxes, innovation hubs	Prevent	2,8,10
		Lack of technological literacy	Financial exclusion	Low financial literacy	Technological literacy measures	Targeted educational initiatives	Prevent/Mitigate	3,5
		Lack of regulatory/supervisory expertise	Inadequate supervision; protection gaps		Tests of staff knowledge	Education and training initiatives	Prevent	2
	Reliance on algorithms	Coding error	Product/service malfunction leading to loss of money		Benchmarking	Stress testing, governance and controls processes, qualification standards	Prevent/Reverse	6,9
		Over-simplification/complexity; reduced personalisation of service provision	Unsuitable products or advice (e.g. robo-advice)		Benchmarking	Governance and controls processes, qualification standards	Prevent/Reverse	6
	Use of big data	Risk profiling	Financial exclusion, e.g. uninsurability		Consumer complaints	Governance and controls processes, qualification standards	Prevent	3,6,10
			Higher costs for vulnerable populations		Consumer complaints		Prevent	3,6,10
		Targeting individuals with personal offers	Unsuitable products	Representative bias	Consumer complaints	Governance and controls processes, qualification standards	Prevent/Mitigate	3,5,10
		Learned bias	Discrimination		Benchmarking	Governance and controls processes, qualification standards	Prevent	3,6

Risk driver	Risk factor	Outcome	Detriment	Contributing factors	Potential indicators	Mitigating actions	Risk Target	Relevant HLP
		Unclear ownership of personal data and informed consent	Reduced consumer privacy			Effective disclosure	Prevent	8
	Cyber-threats	System disruption	Financial loss; inaccessibility of service		Cyber-attacks	Robust system controls and testing protocols	Prevent	7
		Data theft, manipulation, destruction	Financial loss		Cyber-attacks	Robust system controls and testing protocols	Prevent	7,8
		Mistrust of digital finance		Availability bias	Consumer surveys	Robust system controls and testing protocols	Prevent	7