European financial Inclusion Network – EFIN – www.fininc.eu

Summary

The use of big data analytics is set to profoundly affect the value chain of all financial products and activities. As firms invest heavily in digital technology, the amount of consumer data flowing through the economy increases at unprecedented speed.

Across sectors (banking, insurance & asset management), we expect increasing personalisation of offers, tailored marketing and a proliferation of new types of services and products. In particular, we expect sweeping changes in underwriting and claims handling in the non-life insurance area, in creditworthiness assessments and in the payment modalities.

While this evolution comes with some potential benefits for consumers, it also triggers important questions about privacy, fairness, and exclusion.

Therefore, it is crucial that regulators assess what big data analytics can and should do for the benefit of consumers in finance, but also seriously consider associated risks. Potential policy approaches include prohibiting the use of certain parameters in big data analytics which are highly likely to cause detriment to consumers...

We advocate a clear and simple regulatory approach to combating financial exclusion

Financial exclusion is about people with no access to affordable , essential products , and is about ensuring products are convenient, transparent in design, and do not generate new difficulties by their use (arrears, extra costs,...).

Policy makers should build through administrative data collection, an objective set of indicators, to measure access and difficulties encountered by the credit users. They should also determine indicators of market dysfunction showing where there is a need for regulatory intervention. For example, for access to car insurance, policy makers should monitor exclusion indicators such as accidents involving uninsured drivers, and require the insurance industry to develop effective solutions or to cover the costs to society of this phenomenon.

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

The big data phenomenon is captured well in the description.

In point 7, though, from a Financial Inclusion perspective, suggesting that there is an active demand from consumer for new types of services involving the use of big data in financial services should be nuanced to note that while there are for sure customers experiencing undue exclusion related to "old-school" credit scoring model (among

others), the major issue is access for all to basic, user friendly financial services that really are designed to fit their needs

Accordingly, we share with BEUC the " another critical note, we challenge the notion made in point 15 that "barriers" to data access for firms could lead to higher prices for consumers, poorer quality of products etc. This suggest a built-in bias towards the use of more data, while one could equally argue that those same "barriers" protect consumers from detriment such as price discrimination".

If indicators are essential to assess the risk and pricing of a service, they shouldn't be used to ban a significant part of the population. Moreover some of these indicators are often determined on a dogmatic basis, and are disproportionally used, leading to a destructive, e.g.: unpaid insurance bill who cancels all your others contracts and forces you to subscribe excessively expensive mandatory insurances.

2. Which financial products/activities are (likely to be) the most impacted by the use of Big Data and which type of entities (e.g. large, small, traditional financial institutions, fintechs, etc.) are making more use of Big Data technologies? In light of ESAs objective to contribute to the stability and effectiveness of the financial system, to prevent regulatory arbitrage, do you consider that there is a level playing field between financial institutions using big data processes and those not using them (e.g. because they do not have access to data or the IT resources to implement big data processes) or between financial institutions or potential new entrants (e.g. Fintechs) using big data processes? Please, explain.

The use of big data analytics is set to profoundly affect the value chain of all financial products and activities. While firms invest heavily in digital technology, the amount of consumer data flowing through the economy increases at unprecedented speed.

Across sectors (banking & insurance) we expect increasing personalisation of offers, tailored marketing and the proliferation of new types of services (e.g. peer-to-peer lending, telematics based insurance) which reinforce a growing trend towards market segmentation. In particular, we expect sweeping changes in creditworthiness assessments, and in payment modalities.

The foremost question ESAs will need to address is what types of data are genuinely needed (and not only useful), if they are proportionate and, in short, are really necessary to lead to an efficient decision. While industry might be looking for efficiency and cost free data, the regulator should challenge where appropriate by proposing alternatives which better safeguard privacy and proportionality... The basic principle should be "sobriety" similar to the principle of "subsidiarity" There should be no use of data relating private life, unless it can be shown to be in direct relation to the purpose. So for example, creditworthiness assessment should be based on expenditure and income data , on the capacity to manage a balanced budget, and credit history and not on data derived from social media such as patterns of behaviour, or, for example, sex, ethnicity or locality

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

CRESUS, ONG fighting overindebtness uses big data tools for KYC/KPI/Impact measurement matters. We also use these tool to work with our partners to prevent overindebtness and improve creditworthiness. We use personal data for the coaching and the following up of our users. Most of our actions are based data analysis.

4. If you are a consumer or consumer organization, do you witness any of the uses of big data? In what fields?

The most concrete examples of truly new services are found in the insurance & credit areas.

"Pay as you drive" (telematics) car insurances and, to a lesser extent, "pay as you live" health insurances (where consumer's behaviour is tracked and rewarded through wearable devices) are promoted and sold increasingly

Some uses of big data in lending practices, especially assessing creditworthiness could be seen as disproportionate, even illegal within the meaning of the EU Directive on mortgage credit, since access to social media data is not equivalent and as proportionate as access to an "analytical report on the management of the client's bank accounts" even though the wider approach might also be seen as an efficient tool to assess "credit risk"..

Firms selling consumer data (e.g. banks selling payment data[1]) is another, questionable, practice and reminder of how big data could be monetised without tangible consumer benefits.

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

/Do you agree with the above short description, non-exhaustive, presentation of some of the main applicable requirements? If not, please explain why. Please also mention

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[1] https://www.bloomberg.com/news/articles/2014-03-10/ing-plan-to-share-customer-payment-data-spurs-privacy-concerns

whether you consider that other legal requirements are essential and should be mentioned

We agree with the requirements. Additionally, we would like to point out that broader fundamental rights and anti-discrimination legislation could come into play when using big data analytics. A good example is the prohibition to discriminate based on gender, following the Test-Achat case[2].

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

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POTENTIAL BENEFITS AND RISKS FOR CONSUMERS AND FINANCIAL INSTITUTIONS

7. Do you consider the potential benefits for consumers and respectively financial institutions to be accurately described? Have you observed any of them in practice? If so, please, provide examples. If not, please, explain whether you are aware of any barriers that may prevent the above potential benefits from materializing?

In general, the potential benefits for consumers and financial institutions are well described. However, the extent to which they will become realities in practice remains uncertain.

Generally speaking, in references to an improved financial inclusion, the focus is put on a wider market offer, and on reaching new consumers. In our perspective, better access must be related also to adequacy of the response to consumers' needs, and making use of financial products should not increase the risk of difficulties. In other words, if the new clients, not currently well served by banks from types of credit, can indeed benefit from a more "fine-tuned" creditworthiness analysis provided thanks to algorithms, , this should not lead to a significant increase in arrears, financial penalties nor over-indebtedness. The risk of facilitating access to an over sized and high cost credit leading to greater financial difficulties, and therefore to greater financial exclusion,should be reduced not increased.

While tailored insurance policies and mre personalized premiums could lower the cost for low-risk policy holders, first experiences **in pay-as-you-drive (PAYD) policies provide mixed results.**

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[2]

http://curia.europa.eu/juris/celex.jsf?celex=62009CJ0236&lang1=en&type=TXT&ancre=

Research[3] from our Dutch member Consumentenbond found that:

- PAYD premiums are substantially higher than traditional car insurance premiums, but can be lowered through adopting exemplary driving practices, resulting in rebates up to 35%;

- Average consumers with fair driving practices are mostly better off with a traditional insurance;

- Consumer with a higher risk profile (younger or older drivers) can be sometimes better off with a PAYD insurance, but firms are restricting this effect by setting age limits;

- The criteria for calculating rebates remain vague and hard to comprehend – one insurer even used gamification criteria whereby the rebate was partly based on how the policy holder drove in comparison with other policy holders;

- Privacy concerns arise since insurers also collected data which was not necessary for the calculation of the premium.

Developing pricing policy which gives "incentives" for customers to behave in a way which reduces insurance liabilities is positive but should be provided "ex-post", based on a reality of "good behaviour". This would reducethe discriminative impact of segmentation whereby some categories of customers pay a higher premium because they share too many common characteristics with "high risk drivers"..

On the other hand, the alternative of an ex-ante assessment leading to "tailored" premiums is questionable from perspective of avoiding unjustified discrimination and segmentation of the market.

One additional benefit of the use of big data which is not mentioned, is its **usage by supervisory authorities**. Algorithms could be e.g. designed to test other algorithms for bias, discrimination, or other principles.

For example, a public credit register could develop data analysis to combat over-indebtedness: a diagnostic could be made for the benefit of the customers and support financial education, alerts to specific vulnerabilities and trigger referrals to budget advice services.

Finally, we would like to flag the concept of "**open banking**"[4] whereby open API's (Application Programme Interfaces) have the potential to provide consumers with interesting services, e.g. in personal financial management. As with big data, this comes both with opportunities and potential pitfalls for consumers.

8. Do you believe that big data processes may enable financial institutions to predict more accurately (and act accordingly) the behavior of consumers

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[3]

https://www.consumentenbond.nl/binaries/content/assets/cbhippowebsite/gidsen/geldgids/2016/nummer-7---november/gg201611p20-rijstijlverzekeringen.pdf

[4] http://newcityagenda.co.uk/wp-content/uploads/2017/01/Open-Banking-Print-Ready-A4.pdf

(e.g. predicting which consumers are more likely to shop around, or to lodge a complaint or to accept claims settlements offers) and do you agree with the description of the risks identified for consumers and respectively financial institutions? Have you observed any of these risks (including other risks that you are aware of) causing detriment to consumers and respectively financial institutions? If so, in what way? If not, please explain why. Please, also mention whether certain risks for consumers and financial institutions have not manifested yet but have the potential of developing in the future and hence need to be closely monitored by Supervisory Authorities

The increasing use of big data analytics, including very sensitive data on consumer's everyday lives, poses several fundamental risks to consumers and society. While the ESAs have done excellent ground work, we would like to highlight some of them.

Exclusion risk: in the insurance area, the **individualization of risk profiles** is bound to have fundamental implications for the principle of solidarity and risk pooling, potentially affecting badly more vulnerable consumers. Consumers with higher risk profiles (e.g. in health insurance area) might face unacceptably high premiums for basic insurance policies or may find themselves unable to find cover[5].

- **The cost of privacy**: the possible discrimination of privacy-minded consumers, unwilling to give private information (e.g. geolocation, using wearables tracking your fitness data and/or medical parameters) at the expense of higher premiums or credit rates. Leading insurance executives seem to be keen on establishing the "no wearables = no health insurance principle"[6], which is very worrying.

- **Disparate impact of big data**: millions of data points might suggest interesting correlations between consumer's behavior (e.g. their spending habits, on-line behavior, geolocation) and expected outcomes (e.g. risk of defaulting credit, risk of driving badly) **but correlation does not mean causality.**

    The power of algorithms, with all built-in human biases, in predicting concrete consumer outcomes, is therefore always limited. Research has confirmed that, in the credit area, there is no link between number of defaults or arrears and the amount of data points used in the creditworthiness assessment[7]. More over many of this algorithms are buit with incomplete and partial data, repeating the sheme leading to exclusion

    Conversely, **price discrimination** looms around the corner. In the US, one credit card company admitted to consider individual consumers, who were

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[5] https://www.fca.org.uk/publication/consultation/big-data-call-for-inputs.pdf, p11.

[6] http://www.swissinfo.ch/eng/business/no-wearable--no-policy-_insurers-grapple-with-wearable-big-data--revolution-/41381560

[7] Assessing the impact of credit data on preventing over-indebtedness, contributing to prudential regulation and facilitating access to affordable and quality credit, Financial Services User Group.

using their cards for marriage counseling or therapy, to have a bigger credit risk, based on its experiences with other consumers and their repayment histories[8].

Overall, such big data methodologies may hide intentional or unintentional discrimination against protected classes (or vulnerable consumers), generating customer segments that are closely correlated with race, gender, ethnicity, or religion.[9]

Price optimization: big data supports practices whereby firms analyze and incorporate data which are not related to consumer's risk profile or their specific needs and demands. For example, over 50% of large insurers in the US look at individual (on line) shopping habits or perceived tolerance for price changes, in setting premiums for an individual consumer. Such practices, which can result in **consumers with otherwise identical risks paying different prices for the same coverage**, has been banned or restricted in 15 US states[10].

Similar practices could easily be introduced in the asset management and banking sector.

- **Illusion of advice:** the increasing personalization of offers, spurred by big data analytics, might give consumers the impression they are getting real advice, with all the regulatory protections attached, while in fact they are purely being sold financial products.

Recent consumer research[11] by one of our UK members, on automated advice platforms in retail investment, has shown that consumer awareness of "what type" of on-line service they are receiving is very low.

In general, the very patchy EU framework on financial advice, with different or absent provisions across sectors, will be challenged even more with the increasing personalization of offers.

- **Big brother:** the increasing use of big data, with "real-time insights into consumer behavior", is the cornerstone of **"surveillance capitalism"** and is potentially very worrying. Imagine consumers' activities being monitored 24/7,

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[8]
    https://www.ftc.gov/system/files/documents/reports/big-data-tool-inclusion-or-exclusion-understanding-issues/160106big-data-rpt.pdf, p9.

[9]   idem

[10]   https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2016_FIO_Consumer_Report.pdf, p6.

[11]
    https://www.fscp.org.uk/sites/default/files/final_panel_position_paper_online_investment_and_advice_services.pdf

recorded and analyzed for commercial purposes by financial institutions or third parties.

Big data analytics in finance could be very intrusive in people's personal life and start dictating not only how they drive, but also how they eat[12], how many steps[13] they need to take and even how they brush their teeth[14]. Such **financialization of consumer's private life** require urgent societal and ethical consideration.

9. Is the regulatory framework adequately addressing the risks mentioned above? Bearing in mind the constant evolution of technologies/IT developments and that some of the above mentioned regulatory requirements are not specific to the financial services sector (e.g. GDPR), do you think further regulation is needed to preserve the rights for consumers of financial services in a Big Data context? Please, explain why.

The current regulatory framework, especially the GDPR, sets out good principles to address the risks stemming from big data. However, the increasing complexity of big data analytics and its effect on market outcomes will require further clarification in the specific area of financial services.

Key principles of the GDPR, **which will need further guidance**, include:

- Sensitive data should not be used or shared without consumer's explicit consent and should only be used for **explicit, limited purposes;**

- Firms should not be able to force the consumer to consent, allowing them to share (or sell!) the data with other parties, or to use the data for other services beyond the service they provide;

- If a financial institution is using data, or intends to use data that not has been provided directly by the consumer or that does not come from its direct relationship with the consumer, this needs to be made clear to the consumer;

- **Consumer should always be offered the possibility to challenge a fully automated decision which affects them;**

- Data portability: consumers have the right to carry their personal data over to another provider;

- "Legitimate" interests of firms for data collection may not outweigh the interest and rights of consumers.

As well as giving further guidance, supervisory authorities should be monitoring the potential detriment of the use of big data closely.

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[12] https://www.theguardian.com/technology/2016/nov/02/admiral-facebook-data-insurers-internet-of-things

[13] https://www.test-aankoop.be/action/pers%20informatie/persberichten/2015/privacy

[14] http://www.huffingtonpost.com/entry/smart-gadgets-insurance_us_55e5c6ffe4b0c818f6192558

Potential policy approaches include **prohibiting the use of certain parameters in big data analytics** which are highly prone to consumer detriment (e.g. certain parameters in health insurance, marital status in car insurance or credit assessments, parameters triggering price optimization…).

As already said, policy approach should be based on a "sobriety" concept to complement the current "proportionality one", which latter as it stands, may not be sufficiently clear to be effectively used in jurisprudence. Accordingly the regulator should invite industry to limit the field of data in a manner that respects privacy, restricting data collection to that which is most effective for the purpose, and which is proportionate and reliable (social media profiles can be based on false data).

10. Do you agree that big data will have implications on the availability and affordability of financial products and services for some consumers? How could regulatory/supervisory authorities assist those consumers having difficulties to access financial services products?

Some basic financial services and products should be considered as being of public interest. In relation to this, the industry as a whole should be regulated so as to propose for everyone easy access to basic, affordable" products.

This is not the place to list the social and public costs that result when people are excluded from such basic products as a bank account, social credit, or compulsory but affordable car insurance premiums.… Based on a mechanism which could be inspired by the Community Reinvestment Act in force in the USA, a solution involving the industry as a whole could be developed based on a contribution related to the measured intensity of activity in relation to "community oriented products and clients"..

Big data analytics could have a major negative impact on the affordability of insurance products, especially for vulnerable or digitally illiterate consumers. In this context, more specific product and/or price regulation will need to be envisaged (e.g. **restricting the scope of individual risk based pricing in insurance**) by regulatory and supervisory authorities. More in general, BEUC and EFIN has previously called for establishing an EU framework for simple, transparent, and cost-effective financial products across the board[15], which was echoed by the ECON Committee in its report on the Green paper on retail financial services[16].

11. Do you believe that big data processes may enable financial companies to predict more accurately (and act accordingly) the behavior of consumers (e.g. predicting which consumers are more likely to shop around or to lodge a complaint or to accept claims settlements offers) and could therefore

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[15]   http://www.beuc.eu/publications/beuc-x-2016-027_fal_beuc_position_green_paper_financial_services.pdf

[16]

   http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+REPORT+A8-2016-0294+0+DOC+XML+V0//EN,   point 9

compromise the overarching obligations of financial institutions to treat their customers in a fair manner? Please explain your response.

As set out in our response to Q9, big data analytics will provide intermediaries more behavioural insights of consumers, potentially triggering price optimisation. Such practices can potentially conflict with firms' overriding obligations to treat consumers fairly and should therefore be kept under close regulatory scrutiny,   and where necessary be subject to restrictions or even a ban on certain practices..

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

Cybersecurity is vital for consumers in an increasing digitalised society, where fraudsters or intrusive business models can target sensitive and personal information. A US report[17] points out that certain firms can obtain lists of consumers who have Alzheimer's disease to target them with toxic financial products.

In similar vein, our UK member Which? recently conducted an undercover investigation[18] into the trading of data, and found that very sensitive information (including financial data) was easily available also to firms with bad intentions.

13. Would you see merit in prohibiting the use of big data for certain types of financial products and/or services, or certain types of consumers, or any other circumstances?

As stated before, supervisory authorities should be monitoring closely the potential detrimental use of big data..

Potential policy approaches include **prohibiting the use of certain parameters in big data analytics** which are highly likely to cause consumer detriment (e.g. certain parameters in health insurance, marital status in car insurance or credit assessments,).

14. Do you agree that big data may reduce the capacity of consumers to compare between financial products/services? Please, explain your response.

There is indeed a risk that increasing personalisation of offers will decrease comparability as different providers could use different datasets and algorithms for similar offers. This

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[17]
        https://www.ftc.gov/system/files/documents/reports/big-data-tool-inclusion-or-exclusion-understanding-issues/160106big-data-rpt.pdf, p10.

[18]   http://www.which.co.uk/news/2017/01/how-your-data-could-end-up-in-the-hands-of-scammers-460123/

could give raise to increasing asymmetry of information to the detriment of consumers, who are already grappling with the complexity of currently available financial services.

15. How do you believe that big data could impact the provision of advice to consumers of financial products? Please, explain your response.

Big data tools (such as automated advice) could help giving consumer access to more tailored and personalised advice[19]. However, there is a thin line between targeted sales & marketing and providing real advice with the corresponding regulatory protections, which should be kept in mind. Increasing on-line distribution of financial services, assisted by big data analytics, could be further blurring this line.

As set out in our response[20] to an earlier consultation on automation in financial advice, ensuring the quality and supervisory oversight of the algorithms driving consumer's outcomes is crucial.

16. How do you believe big data tools will impact the implementation of product governance requirements? Please explain your response.

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17. How do you believe big data tools will impact know-your-customer processes? Please, explain your response

As regards the EU anti-money laundering rules, BEUC is in favour of harmonising the provisions of the Anti-Money Laundering Directive (AMLD) to achieve its coherent application across Member States and better protect consumer personal data and privacy.

The available evidence [21] suggests that some financial service providers collect information from consumers for commercial purposes, using the AMLD requirements as an argument.

For the case of France, CRESUS plead for an harmonisation of the data required for credit worthiness and for an implementation of a Third party and neutral credit bureau.

POSSIBLE EVOLUTION OF THE MARKET

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20 http://www.beuc.eu/publications/beuc-x-2016-025_gve_automation_in_financial_advice.pdf

21 See BEUC position, May 2013: http://www.beuc.eu/publications/2013-00398-01-e.pdf

18. What are key success factors for a big data strategy (i.e. the adaptation of the business model/plan towards big data driven technologies and methods)?

19. What are the greatest future challenges in the development and implementation of big data strategies?

20. This Discussion Paper refers to a number of measures and tools meant to ensure compliance with conduct and organizational regulatory requirements as well as data and consumer protection rules in the context of big data analytics. Are other measures and tools needed? If so, what are they and what they should cover?

The increasing use of big data tools is set to affect market outcomes substantially in financial services. While consumers could benefit to some extent from big data tools, these may come also with important risks.

The technical capacity to implement control, and the effectiveness of such controls are questionable. For example, how can we be sure that an algorithm presented by a company for a "control" by the regulator is the one really used? How can we detect "discriminative impact" if the relevant indicators, for example of the "inclusiveness" of financial markets, are not developed and monitored on a regular basis? The negative effects might take a long time to be detected, and proof of the causality between the industry's decision making process and the observed exclusion can be very complex, perhaps impossible, to establish.

This is the reason why we consider to it to be more effective, and also neutral as regards the impact on market competition, if regulation aims to ensure the effectiveness of the market, taken as a whole, to properly serve every client deserving of access. Where financial exclusion exists, it should be the shared and proportionate responsibility of market suppliers to propose adequate solutions.

21. How do you see the development of artificial intelligence or block chain technology in connection with big data processes?

Block chain technology can help to improve the security and quality of data used in the context of big data analytics.

Artificial intelligence can add an extra layer to big data to tackle complex analytical tasks, reinforcing both the potential benefits and the risks of big data analytics.