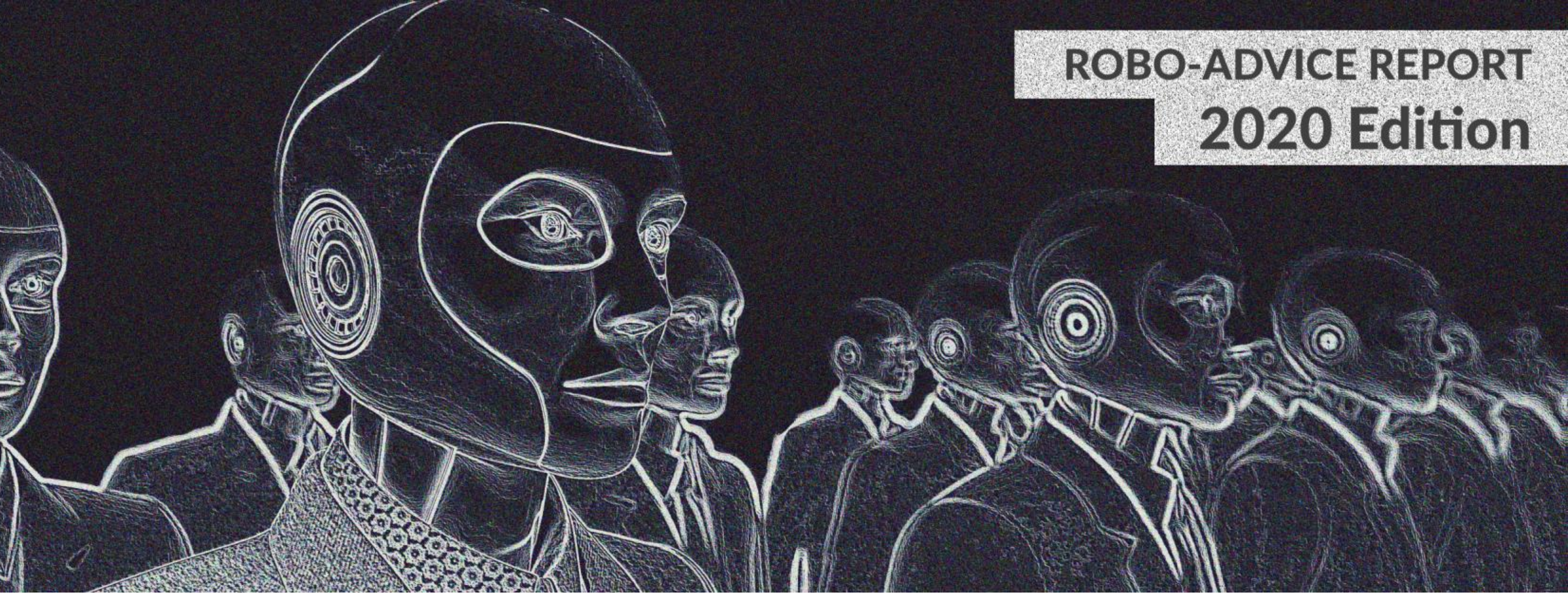
ROBO-ADVICE | CAN CONSUMERS TRUST ROBOTS?

December 2020

a BETTER FINANCE
Research Report

BETTER FINANCE
The European Federation of Investors and Financial Services Users
Fédération Européenne des Épargnants et Usagers des Services Financiers



ROBO-ADVICE 5.0:

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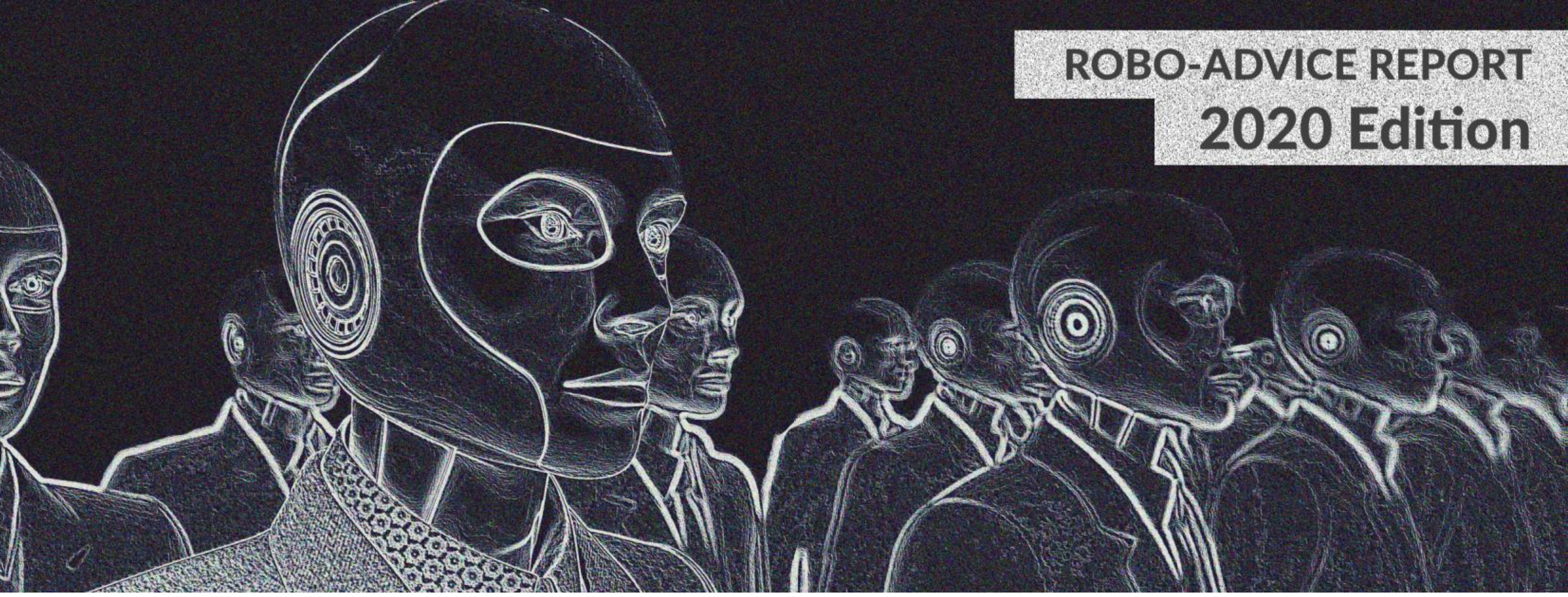
A Research Report by BETTER FINANCE



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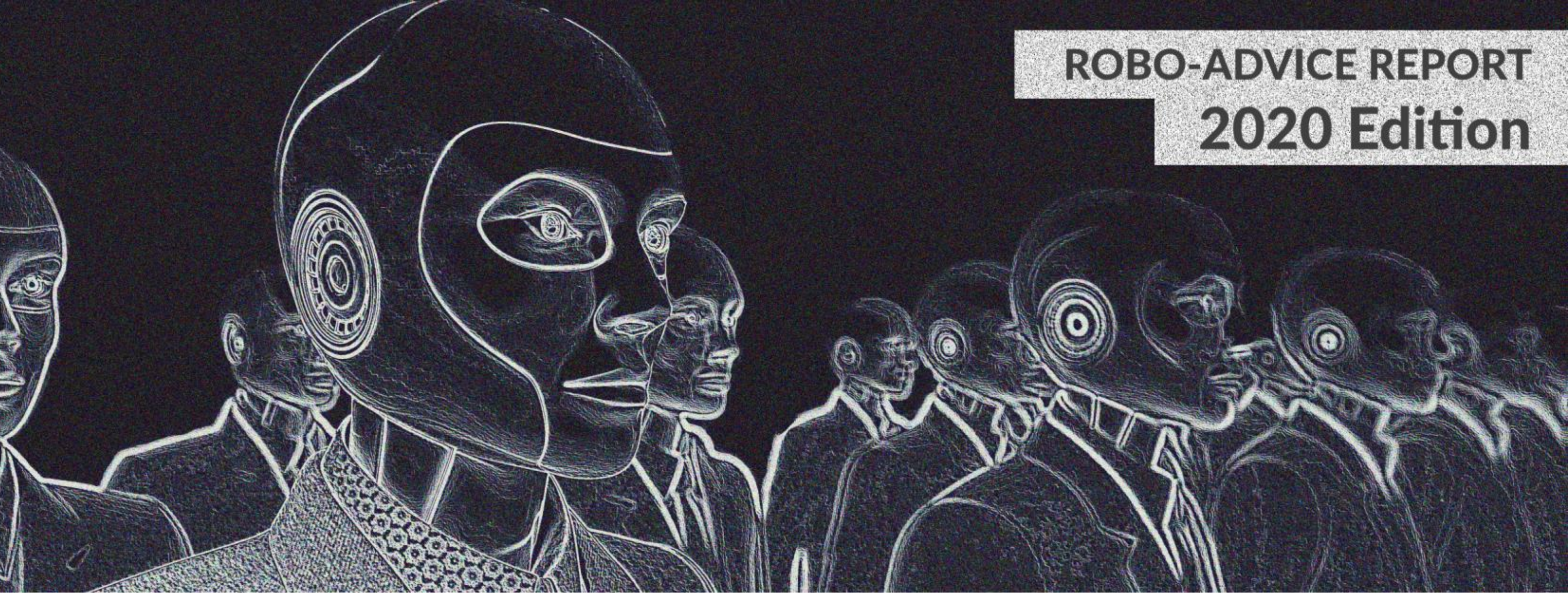
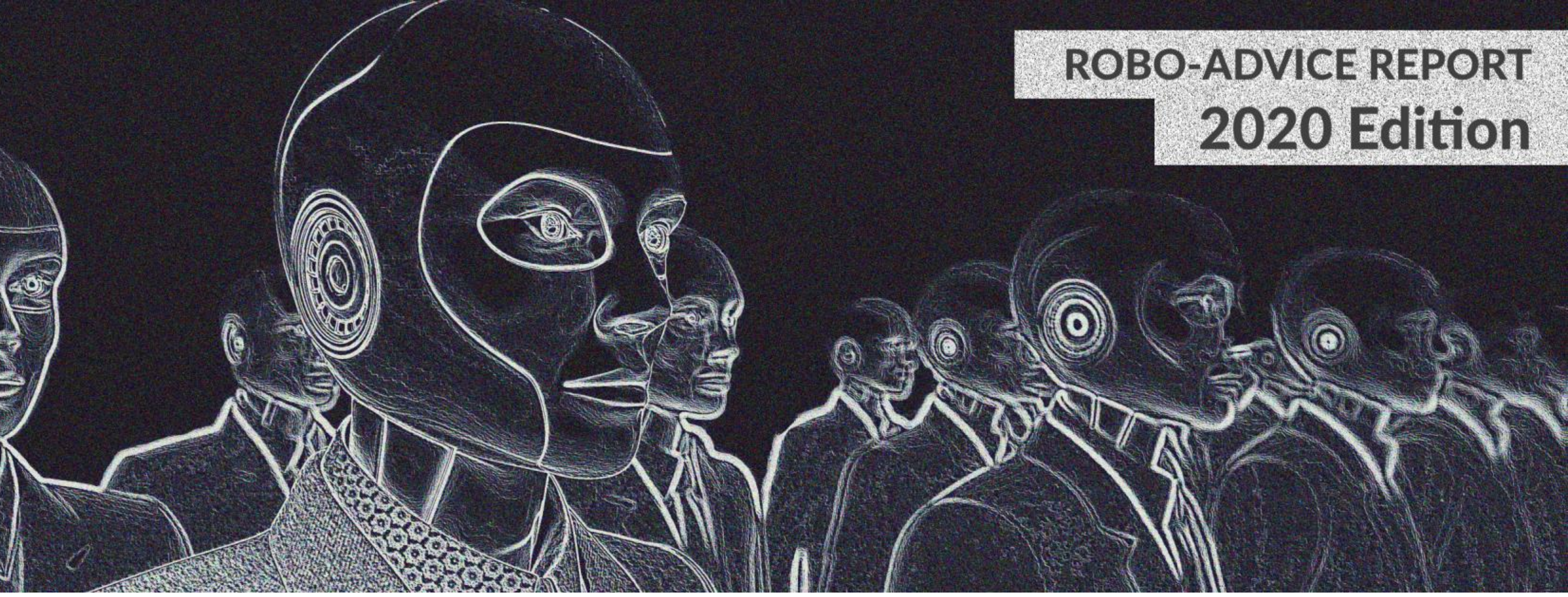




Executive Summary

Robo-advisors are online platforms that use artificial intelligence or algorithms to process information on clients' investment preferences, risk tolerance and loss-absorption capacity, to determine an investor profile and make a personalised and often product-specific investment recommendation.

This research shows the wide range of benefits that come with Robo-advice, such as considerably lower fees, increased accessibility (lower investment thresholds and online distribution), wider availability, speediness, and often unbiased advice free of conflicts of interest (since most Robo advisors do not get commissions from fund providers; all robo-advisors taken up in BETTER FINANCE's report, provide independent advice).

Robo-advisors were expected to grow quickly to significant scales (in terms of users and assets under management), but data show this has not been the case.[1] The fast evolution of the robo-advice market has been hampered by a generalised distrust in financial services, limited awareness of this business model and a low level of financial literacy.

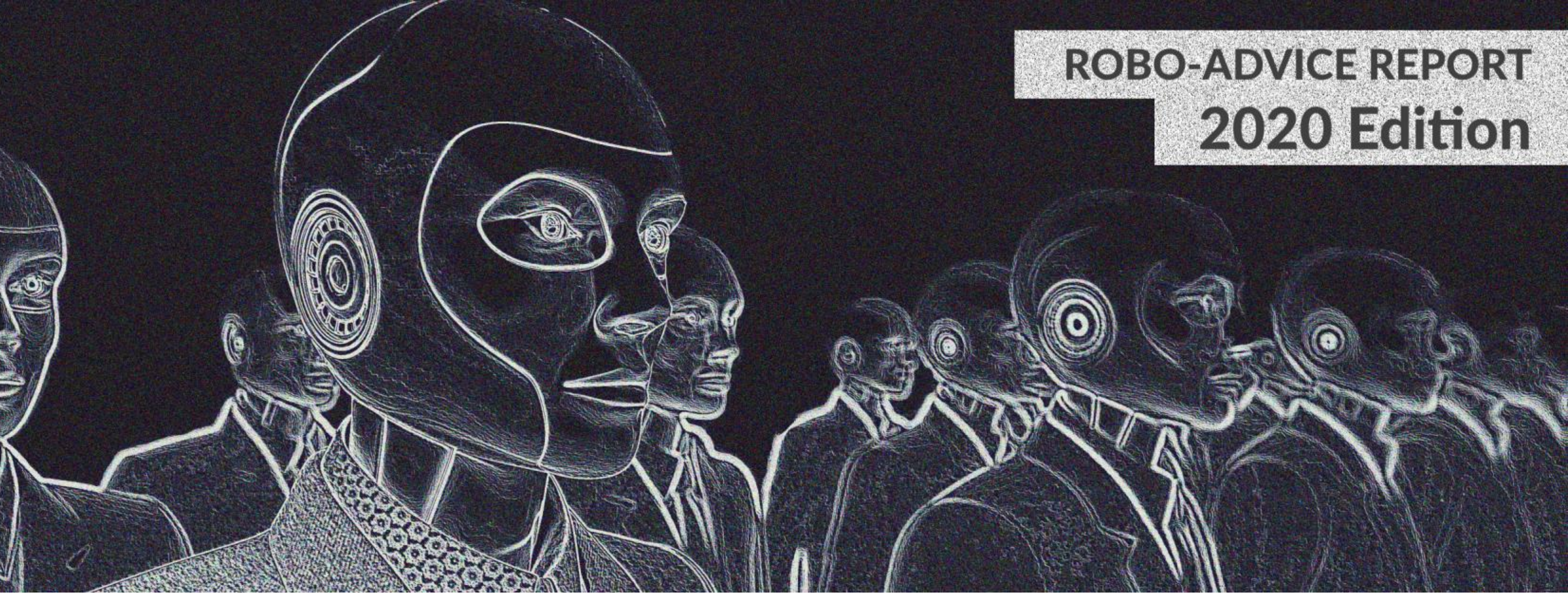
BETTER FINANCE continued its research series into the *Robo advice* with this **fifth annual edition,** mapping start-up platforms that provide robo-advisory and investing services, and analysing their user-friendliness, transparency, costs as well as the suitability of their recommendations (through mystery shopping). This year the research team selected **17 platforms** registered as financial advisers in **11 countries** across Europe, Australia, USA and Singapore. However, the comparison of the results with research from the previous 2 years is done using a sample of **9 platforms** from Europe and the USA.

Reduced Data Accessibility

Unfortunately, the number of platforms used for the **comparative analysis** has decreased due to new requirements from this year that has made it impossible to assess some platforms that now require the creation of an account with personal and sensitive data (such as bank account details, social security number, ID card) in order to test their services.

This report does not aim to single out the best Robo-advice platforms, but to establish whether Robo-advice lives up to its promises to individual investors and delivers suitable recommendations.

[1] The BETTER FINANCE research team also observed this in the previous editions of the Robo-advice report.



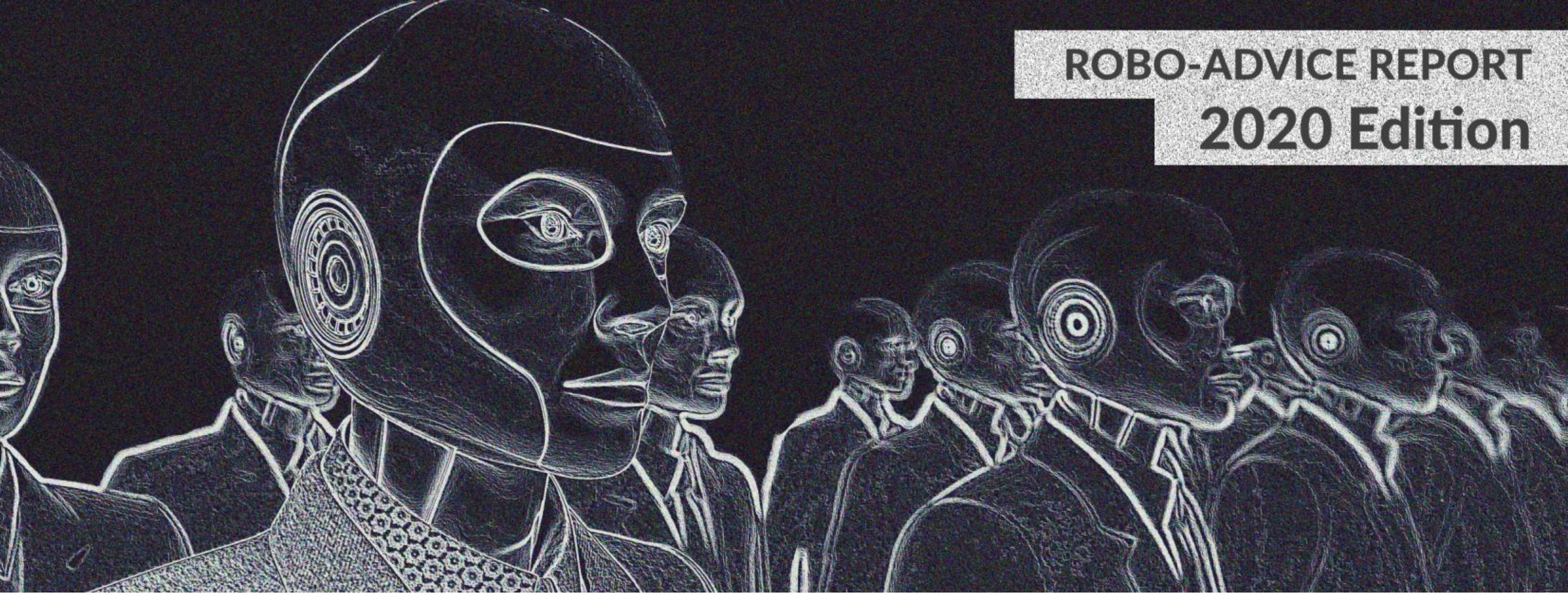
This report's findings can be summarised as follows:

Conflicts of interest: So far, this report reconfirms the findings from earlier editions that most of the robo-advice platforms surveyed provide independent investment advice (based on the disclosures available on their websites). To date, BETTER FINANCE has not found publicly available evidence of any robo-advisor receiving any monetary or non-monetary benefit ("inducements") for recommending a certain financial instrument or product. The research team analysed whether the robo-advisors selected for "mystery shopping" provide independent advice or not based on their regulatory disclosures and on the disclosures on their websites. However, in this year's edition we have found that 2 out of 12 platforms do not adequately disclose whether the investment advice is provided on an independent basis or not pursuant to Art. 24(4)(a)(i) MiFID II. Unfortunately, four others (of those who do make a reference to non-receipt of commissions) do not adequately indicate that advice is independent and what this entails, as required by Art. 52 MiFID II DR. Finding such information proves, on many occasions, very difficult, as the research team had to "dig" deeply into legal documentation to access it

Fees: **Robo-advisors are far cheaper** than equivalent services provided by banks or traditional financial advisors**.** The automation of the advice process allows for lower fixed costs, thus generating competitive pricing. But the real trick in keeping costs low, lies in the fact that most platforms use only low-cost exchange-traded index funds (ETFs). 6 out 9 platforms have decreased their costs compared to 2019. 3 of the 9 Robo-advisors did not change their fees since last year. The decrease in the level of fees varies from 0.02% to 0.60%, confirming the capacity of automated advisors to provide a service that is much more competitive than that of their traditional "human" counterparts.

User-friendliness: We analysed the degree of engagement with investors as well as the information provided by the platform in terms of financial education, noting several improvements. Compared to previous years (2018-2020), some Robo-advisors (5 out of 9 platforms) improved their score in terms of user-friendliness, providing additional features such as tutorials on how to use the platforms, or educational videos and webinars. Also, the inclusion of a human advisor on some platforms has been noted as a positive improvement.

Transparency: **Small improvements but still disappointing.** Transparency, as the cornerstone of a sound financial industry, has been tested in 4 areas: fees, portfolio allocation, risk and past performance. The majority of Robo-advisors (78%) disclose **fees** after filling out the questionnaire and a majority (67%) provide detailed fee information, outlining the composition of the total fee. Regarding the **portfolio allocation**, most of platforms (94%) provide

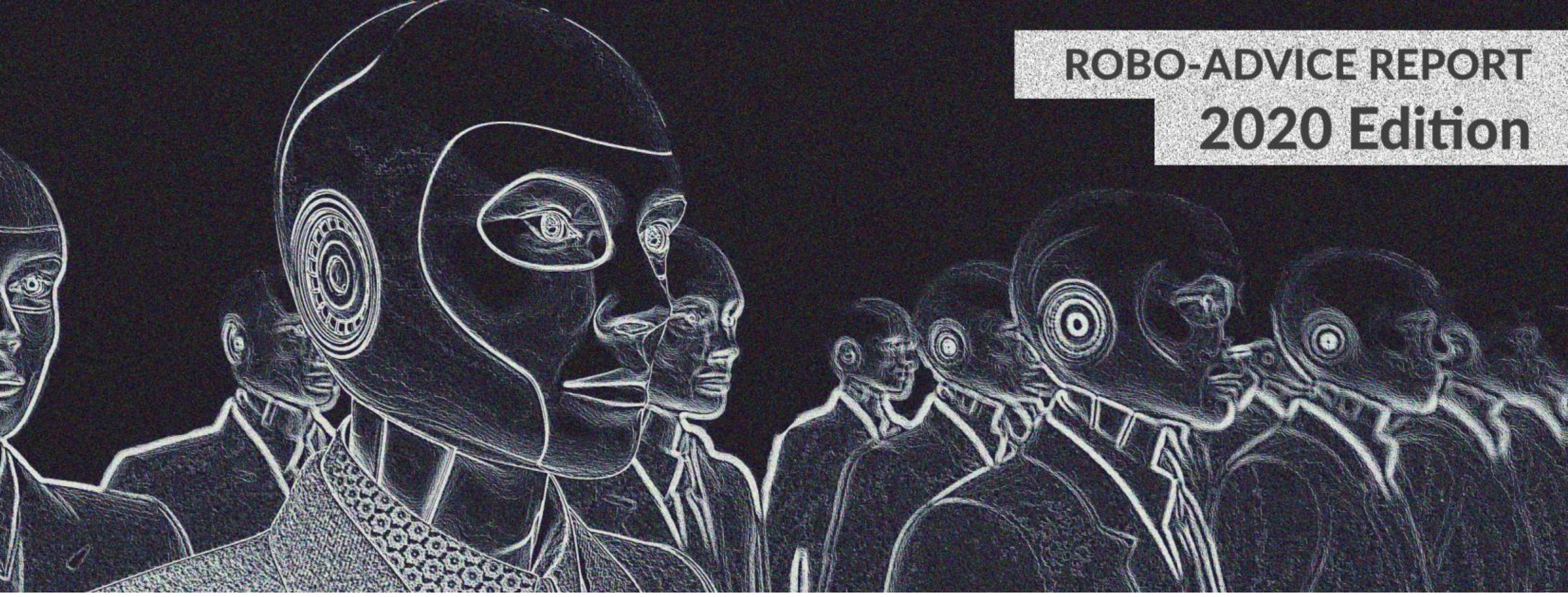


the potential investor with a simple overview of the content and allocation of their investment portfolio. Regarding future **performance** scenarios, 83% of platforms include best- and worst-case scenarios and 61% of platforms disclose past performance to the client (mostly on 5-10 years or since inception, of which only 3 compare past performance to a benchmark). In addition, only 5 Robo-advisors specify that the past/future performance scenarios are not reliable indicators of the actual performance. Finally, 66% clearly disclose the **risk level of the portfolio** in question, though the underlying information of what the risk level contains in practice varies greatly and leaves much to be desired. Looking at the 9 platforms used for the comparison testing over the 3 years, (from 2018 to 2020) very few improvements have been made compared to the previous years.

Extreme divergences in asset allocation and expected returns remain: It is surprising to see that the recommended equity exposure ranges from 9% to 95% for exactly the same investor profile. Also, high divergences in terms of expected returns and associated risk arise between platforms for the same investor profile. **Annual returns vary from + 1.80% to + 12.8% for the "Millennial" profile, and from +1.60% to +7.40% for the "Baby Boomer", thus confirming the incoherent expected returns for the same investor profiles**. Also looking at the comparative analysis on annual return estimations among the 9 platforms analysed across 3 years (2018-2020) we can confirm that different projections for the same investment profiles (M and BB) are still persistent. Also surprising is that the expected returns are lower for a longer time horizon.

Sustainability: Only 6 of the 18 platforms analysed in this year's research also propose sustainable investing options to their clients. However, it is quite disappointing to note that **none of the platforms ask about the sustainability preferences of their clients during the questionnaire**. Only a few platforms ask whether the client wants to invest sustainably at the beginning of the questionnaire, but most of the 6 platforms in scope allow for tweaking their portfolio from "traditional" to "sustainable" once the investment advice is provided.

Suitability: In terms of suitability of the investment advice process and recommendation, we have also seen partial improvements. Out of the 16 Robo-advisors analysed, seven (44%) are ranked at the peer average, obtaining 3.5 out of 5 points for the two profiles. One platform scored maximum points (for the "Millennial" profile) and 4 out 5 for the "Baby Boomer" one (averaging 90%). Nevertheless, the very high discrepancy between the asset allocations and risk profiles "calculated" by Robo-advisors is alarming.



BETTER FINANCE puts forward a series of *policy recommendations* aimed at unleashing the positive potential of Robo-advisors and improving investor protection.

Improve awareness of investor protection regimes

Our research suggests that the propensity of "retail" investors to seek advice and take financial action (invest) is determined by the level of financial literacy and trust in capital markets. These two factors act more as complements and can reduce the vulnerable position of "retail" savers and their perceived lack of protection.

The European Securities and Markets Authority ("**ESMA**") and the European Commission ("**EC**") have been trying to take action to improve the level of financial literacy of EU individual investors – although child education is not an EU competency - and their trust in capital markets.

In addition to these efforts, the EU should promote the development of independent investor education channels for adult citizens, like independent advice for "retail" investment products, and employee share ownership schemes[2]. The EU should also consider coordinating a pan-EU investor protection awareness programme, aimed at informing "retail" investors of the sets of rights that protect them when seeking advice and investing in capital markets. The programme would reassure "retail" investors that investment services are regulated and that they benefit of a good investor protection regime.

The programme could emulate the successful project of the EC on passenger rights ("**Your Passenger Rights**") and duplicate the mobile application with simple, user-friendly interfaces and descriptions of the main rights EU citizens have when using investment services or investing in capital markets.

Investment advice

For the third time in a row, the findings of our Robo-Advice report show that several platforms provide investment advice that seems inconsistent with the investor and risk profile of the mystery shoppers. In addition, the strong discrepancy in terms of investment gains and high dispersion of asset allocation for the same investor profile is concerning. This may stem from how the investor questionnaires are designed or how the background information of the mystery shoppers is analysed (algorithms).

[2] See in particular the recommendations of the Final Report of the High-Level Forum on the Capital Markets Union (CMU), pages 19 and 89, and those of the European Parliament's report on the CMU, paras. 55-58; see *A New Vision for Europe's Capital Markets: Final Report of the High-Level Forum on the Capital Markets Union* (June 2020), available at: https://www.europarl.europa.eu/doceo/document/A-9-2020-0155_EN.html; and ECON Report on further development of the Capital Markets Union (CMU): improving access to capital market finance, in particular by SMEs, and further enabling retail investor participation (2020/2036(INI)), available at: https://www.europarl.europa.eu/doceo/document/A-9-2020-0155_EN.html.

Therefore, the EU authorities **should consider policy actions to improve these processes, such as developing more detailed guidelines on investor questionnaires, on asset allocations or risk profiles.**

For instance, ESMA could require investment advisors to use the same scale to measure the risk profile of the client and assign an equivalent portfolio. To this end, ESMA could use the current Committee of European Securities Regulators (CESR) Guidelines for the SRRI[3] (UCITS KIID).

In addition, the MiFID II framework should be much clearer regarding investment advice and the necessary disclosures to clients or potential clients. In light of these technological developments and the change from "traditional" advice processes, the definition of "investment advice" comprised in Art. 4(1)(4) MiFID II should be amended to specify exactly when a recommendation is considered "advice", what "personal" means, and what criteria are attached to it. Second, the provisions of Art. 24 MiFID II regarding the disclosure of independent/non-independent advice should be amended to make it clear: (i) when exactly, in what format and medium, can an investment firm be considered to fulfil its disclosure obligations: the "provision in good time" is not sufficient and may allow the circumvention of the obligations enshrined in Art. 24; (ii) the implementing provisions of Art. 52 and Art. 53 of MiFID II DR should be amended as to specify that the disclosures related to investment advice must be separate from other disclosures (i.e. should not be put together with the policies on conflicts of interest as per Art. 16(3) MiFID II), should be clearly distinguishable and prominently shown to clients or potential clients, in the same manner as the cost, risk and performance requirements are to be made pursuant to Art. 44 MiFID II DR.

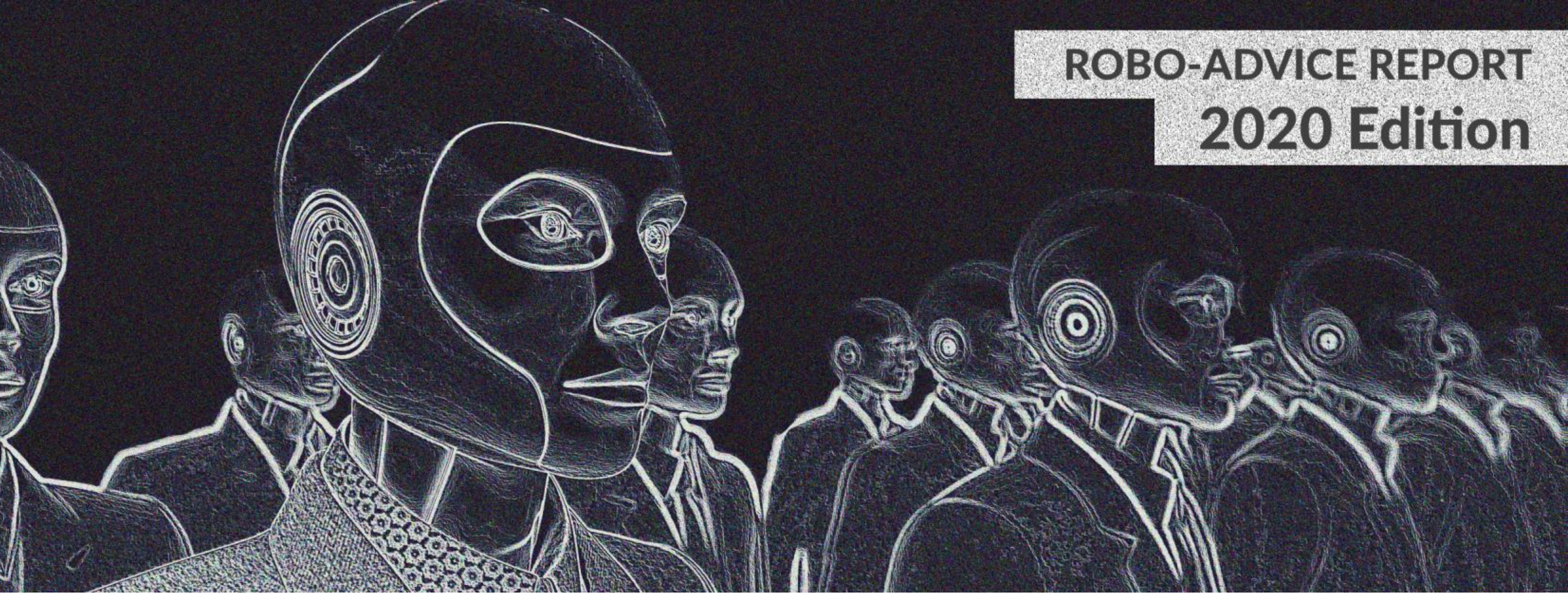
Algorithms and Human centric Artificial Intelligence (AI)

BETTER FINANCE recommends a legislative framework for AI-powered automated decision-making (ADM) to ensure that they are fair, transparent and accountable to consumers.[4] Moreover, BETTER FINANCE recommends for the EC to undertake an in-depth fitness check of all relevant EU legislation in the financial, insurance and pension sectors in order to propose legislative updates where necessary.

Actual cost, risk and performance disclosure

Once more, the investment recommendations display very high divergences in future return estimates, which are quite misleading. EU law should require investment advisors to present the main characteristics of the advice (risk, fees, past performance of the portfolio) similar to that of the current UCITS KIID.

[3] SRRI: the Synthetic Risk and Reward Indicator (SSRI) is used to classify a financial product into a risk category.
[4] BETTER FINANCE is a contributor of the Human-Centric Digital Manifesto for Europe, How the digital transformation can serve the public interest (September 2019): https://www.beuc.eu/publications/beuc-x-2019-053-a-human-centric-digital-manifesto-for-europe.pdf



Such disclosure is all the more important in light of the fact that the EU has decided in one-year time to terminate the no-nonsense UCITS KIID disclosure regime, which is fair, clear, not misleading and comparable. In particular, individual investors in retail investment products ("PRIIPs" in the EU jargon) will no longer be informed on the actual long term historical performance of the products, relative to their objectives or benchmarks. And they will no longer be informed on the actual, intelligible and comparable annual costs of the products.

They will be left instead with four "future performance scenarios" over the "recommended holding period" chosen by each product manager (so much for comparability) based on the performance of the last five years (which MIFID II rightly prohibits), and a future "reduction in yield" based on only one of the four scenarios and only for three time periods (so much again for comparability, never mind whether the information is even at all intelligible to start with).

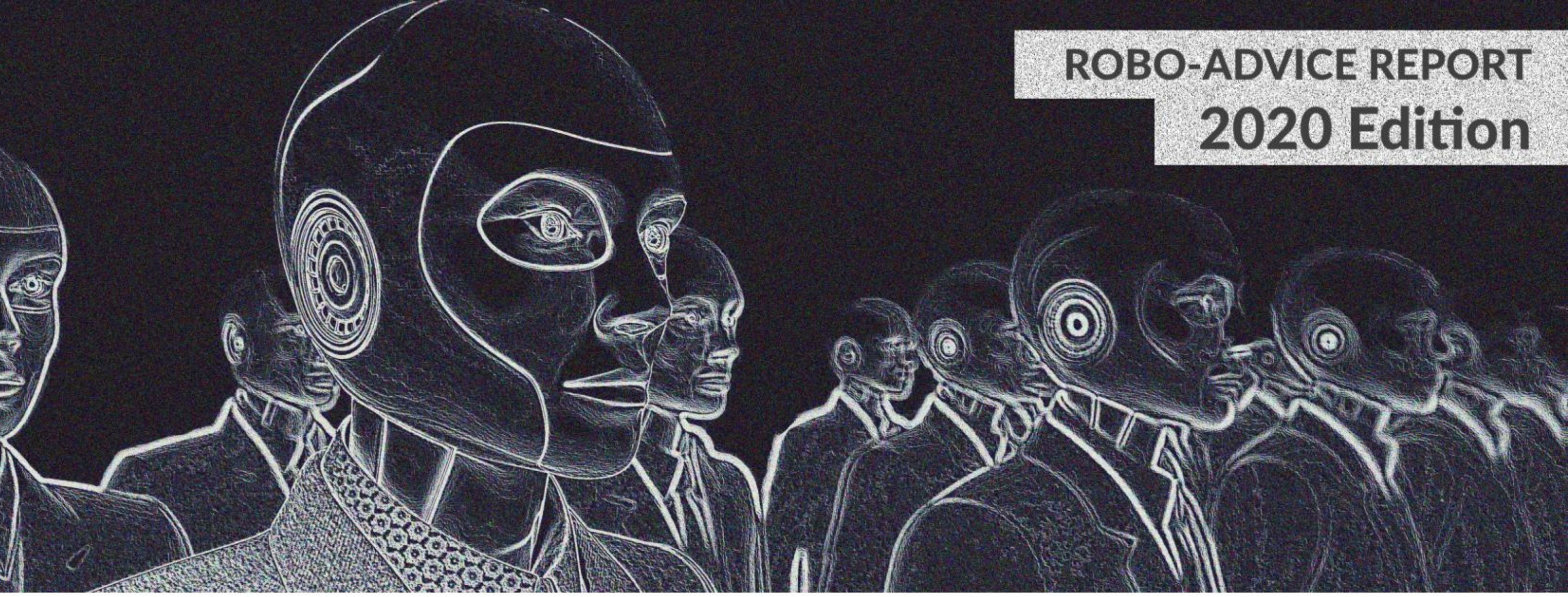
"*Key information documents are misleading because, when you wade through the complexity, the prospective returns are little more than a projection of historic returns over the past five years. This is a triumph of pseudo-science over common sense*".[5]

BETTER FINANCE again asks to urgently put an end to this pseudoscience nightmare at the expense of EU citizens as individual investors and pension savers, and to extend the exemption of UCITS funds from this new disclosure regulation known as PRIIPs until that regulation has been thoroughly reviewed (a review that has already been postponed twice).

Through the disruptive power of FinTech, market inefficiencies can be addressed and more diversification, including alternative providers, can improve what is a rather oligopolistic market. The EU Commission should consider the following initiatives for EU financial service users:

- **Establishing independent databases of savings products, requiring standardized Key Information on actual costs, performance and risks** ("garbage in - garbage out").
- These independent data bases (ideally designed and operated by EU and national supervisors) will, in turn, enable the development of **independent web comparison tools** that would allow for, and facilitate, the comparison and choice between different investment products; like on the Norwegian platform Finansportalen (which now serves as an example for web comparing tools which "feed" on this Portal).
- **Rethinking mandatory disclosure documents like KIID for online/ smart phone adaptation**, for example using drawdown menus for more detailed information.

[5] Professor John Kay in Financial Times, January 2018 https://www.ft.com/content/f1513818-fa06-11e7-9bfc-052cbba03425.



- **Enabling individual shareholder engagement within the EU by voting or giving power to a proxy with one's smartphone**. At the moment, the voting process is monopolised by financial intermediaries. Such a platform would facilitate access for individual shareholders and allow them to exercise their voting rights.

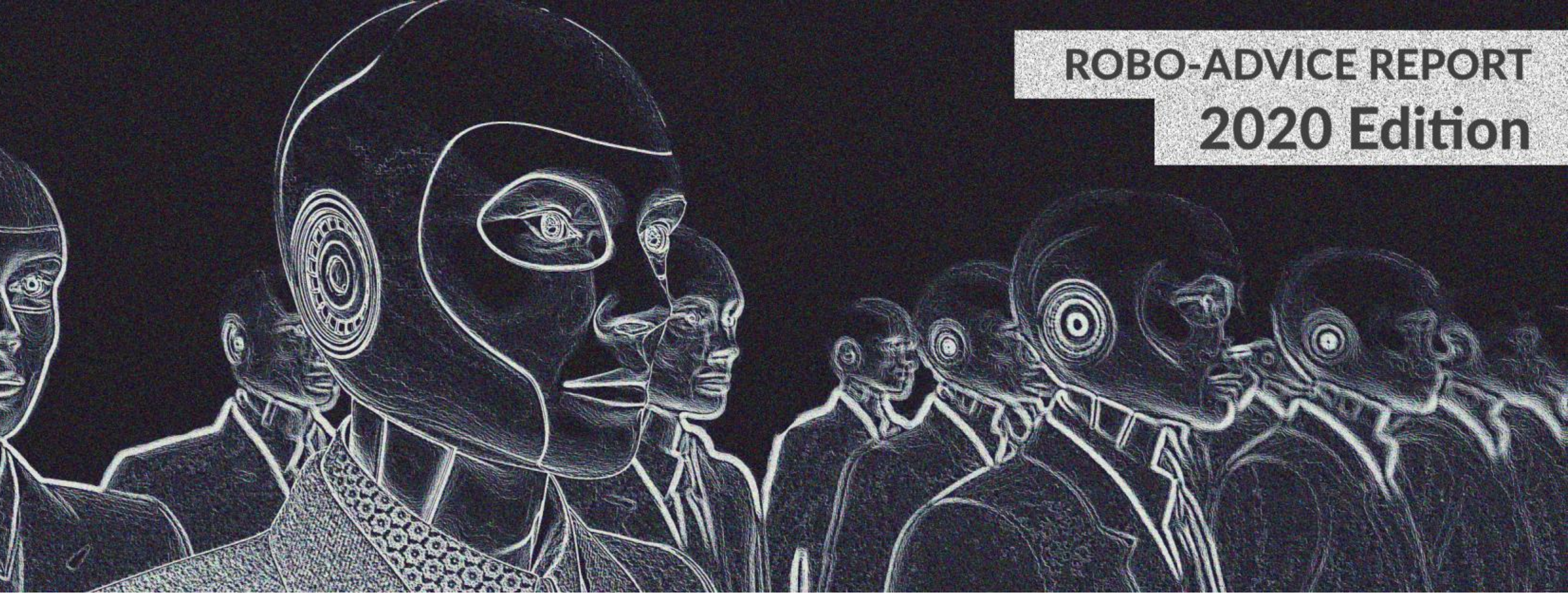
These recommendations have also been discussed at the "HLF CMU", which released its report on 10 June 2020.

Sustainable investing

The EU commission is working on the possibility of introducing obligations for financial advisors to ask their clients for their potential sustainability preferences. If these new rules are implemented, Robo-advisors (like traditional advisors) that provide sustainable investment advice and/or investment services will need to adapt their questionnaire according to the *Commission Delegated Regulation (EU) …/… of XXX amending Delegated Regulation (EU) 2017/565 as regards the integration of Environmental, Social and Governance (ESG) considerations and preferences into the investment advice and portfolio management.*[6]

This amendment would be key to address the issue of lack of assessment of sustainability preferences. At the moment, as observed in this research, none of the platforms that propose sustainable portfolios ask specific questions on the sustainability preferences of their clients.

[6] The final legislation has not been adopted yet and will be subjected to the European Parliament and Council objection period: https://ec.europa.eu/finance/docs/level-2-measures/mifid-delegated-act-2018_en.pdf



Introduction

Giving investment advice requires a thorough knowledge of capital markets that, coupled with an understanding of the advisee's personal situation, results in a recommendation that is *suitable* and best caters to the interests of the advisee.

Can robots do it as well?

It's been more than five years since the European market for Robo-advisors (i.e., platforms using artificial intelligence to make investment recommendations) emerged, triggering extensive academic research and regulatory action.

The EU applied the principle of *technology neutrality*, subjecting Robo-advisors to the same legal regime as "human" advisors: to the extent that a suite of requirements are met,[7] EU citizens can receive an investment recommendation from both traditional financial advisors and platforms.

The main question that BETTER FINANCE researched in all of its four previous editions of the *Robo-Investing Reports* is whether one can ***trust*** a computer-based algorithm to construct a portfolio of financial instruments, with a certain investment horizon and risk profile that is *suitable* and adapted to each investor profile (preference, risk aversion, loss capacity).

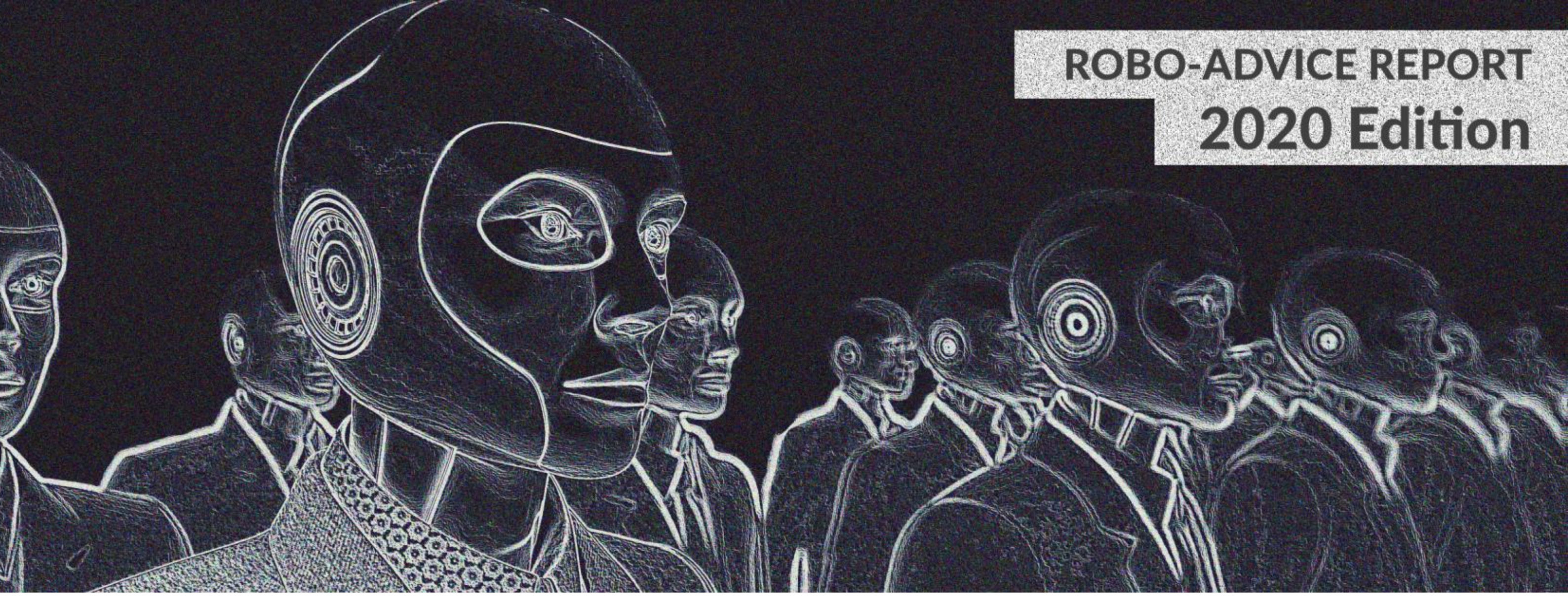
This fifth edition (2020) builds on our experience and improves the methodology to assess whether automated investment advice platforms can deliver the service that human financial advisors do.

What Are Robo-Advisors?

Traditionally, investment advice is received in person from independent or non-independent (tied) agents or from persons selling financial instruments and products. With the emergence of digital technologies, investment firms started to offer advice through online platforms using artificial intelligence. As such, algorithms process the data a client enters when filling out an online questionnaire, determine a profile and "calculate" an investment recommendation for the advisee. This is done through online platforms that we refer to as *Robo-advisors*.

Some argue that Robo-advisors emerged after the 2008 Global Financial Crisis "*when tighter regulations on traditional banks and developments in computer science increased incentives to develop non-bank,*

[7] See "EU Regulatory Framework" section below.



technology-based financial companies".[8] Others argue that it was price competition and tighter regulations aimed at traditional financial institutions that created a niche for technology-driven financial companies to emerge and offer digital solutions that are more accessible, user-friendly, cheaper, and – perhaps most importantly –alternatives to the financial institutions that lost the trust of investors during the crisis.[9]

In our view, Robo-advisors emerged from a mix of factors, but probably the most determining were price competition,[10] digitalisation,[11] and the erosion of trust in traditional financial intermediaries.[12] After all, for several years in a row, banks and insurances were among the least trusted industries, while technology led the way.[13]

What characterises Robo-advisors is automation, online accessibility, decision-making velocity, and the very low levels of fees. In a nutshell, some authors have described them as:

> "[not doing] *anything new that humans are not doing already. But robo-advisors do the work in the blink of an eye, to a consistent standard and at low cost and their processes are easily scalable*".[14]

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[8] Facundo Abraham, Sergio L. Schmukler, José Tessada, 'Robo-Advisers: Investing Through Machines' (February 2019) 21 World Bank Group Research & Policy Briefs, 1, available at: http://documents1.worldbank.org/curated/en/275041551196836758/pdf/Robo-Advisors-Investing-through-Machines.pdf, *apud* International Finance Corporation, 'Digital Financial Services: Challenges and Opportunities for Emerging Market Banks' (2017) EMCompass, Note 42.

[9] The topic of trust in the finance industry is elaborated in the section below "The Issue of Trust: Are Robots the Future?".

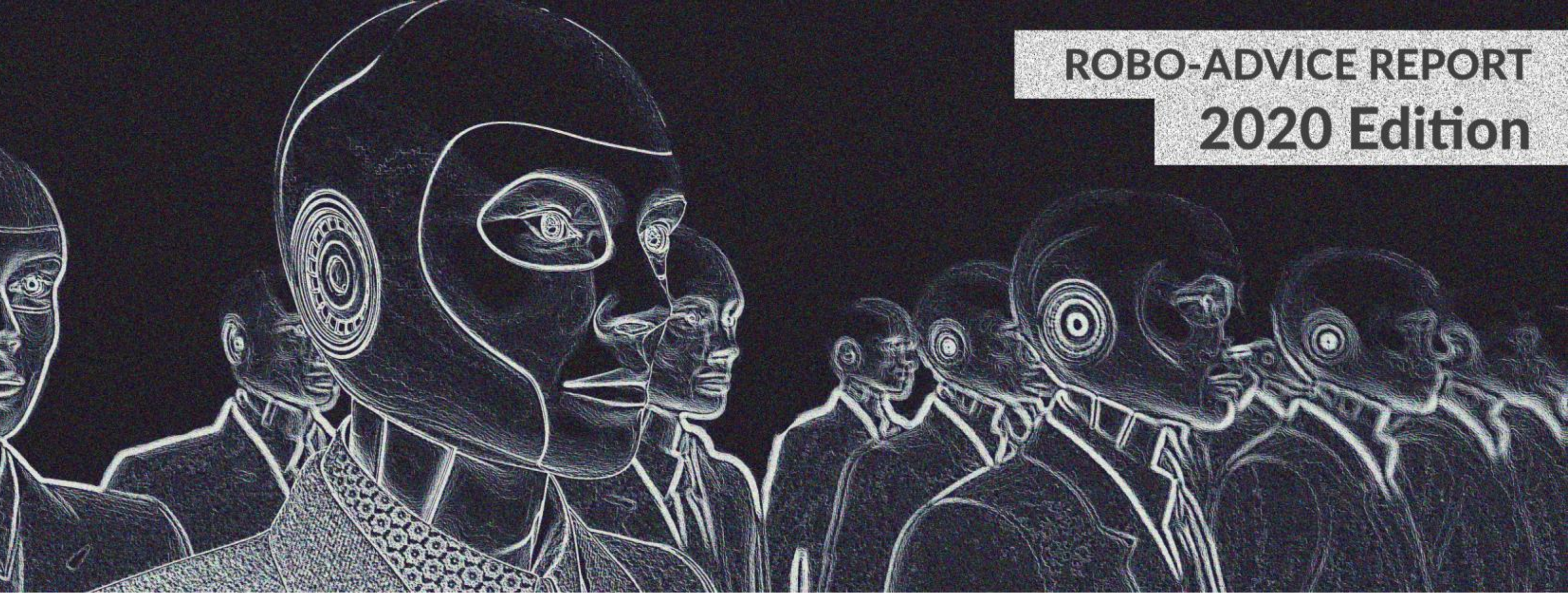
[10] As early as 2016, most of our findings highlight the low fees associated with robo-advisors; as an example, see BETTER FINANCE, '"Robot Advice" for Savings & Investments: A Misnomer with Real Potential Benefits", available at: https://betterfinance.eu/wp-content/uploads/publications/Robot_Advice_Research_Paper_FINAL.pdf; Thomas M.J. Möller, 'European Legislative Practice 2.0: Dynamic Harmonisation of Capital Markets Law — MiFID II and PRIIP' 31 Banking & Finance Law Review 141-173, 161; or the European Supervisory Authorities' Joint Committee Discussion Paper on Automation in Financial Advice (4 December 2015) 4, JC 2015 080; Orçun Kaya, 'Robo-Advice: A True Innovation in Asset Management' (10 August 2017) Deutsche Bank Research; Bret E. Strzelczyk, 'Rise of the Machines: The Legal Implications for Investor: Protection with the Rise of Robo-Advisors' (2017) 16(1) DePaul Business and Commercial Law Journal, available at: https://via.library.depaul.edu/bclj/vol16/iss1/3; also Eugenia Macchiavello, 'FinTech Regulation from a Cross-Sectoral Perspective' in V. Colaert, D. Busch, T. Incalza, European Financial Regulation: levelling the Cross-Sectoral Playing Field (2020) Hart Publishing, 63-86, 66.

[11] See International Finance Corporation, 'Digital Financial Services: Challenges and Opportunities for Emerging Market Banks' (n 4).

[12] Based on Bjerknes and Vukovic who found that, following the 2008 financial crisis and "*the resulting loss of trust in established financial institutions*", in the US market a "*number of new entrants began offering client-facing digital financial tools*" - Line Bjerknes, Ana Vukovic, 'Automated Advice: A Portfolio Management Perspective on Robo-Advisors' (June 2017) Norwegian University of Science and Technology, 6, available at: https://ntnuopen.ntnu.no/ntnu-xmlui/bitstream/handle/11250/2473732/17822_FULLTEXT.pdf?sequence=1.

[13] See the Edelman Trust Barometers since 2008: https://www.edelman.com/research/edelman-trust-barometer-archive.

[14] Paul Resnik, Stuart Erskin, 'The Robo Revolution: Robo Advice Market Commentary and Analysis' (November 2015) Finametrica 10, available at: https://www.ivey.uwo.ca/cmsmedia/3341217/finametrica-2015-robo-advice-report-us.pdf.



EU Regulatory Framework

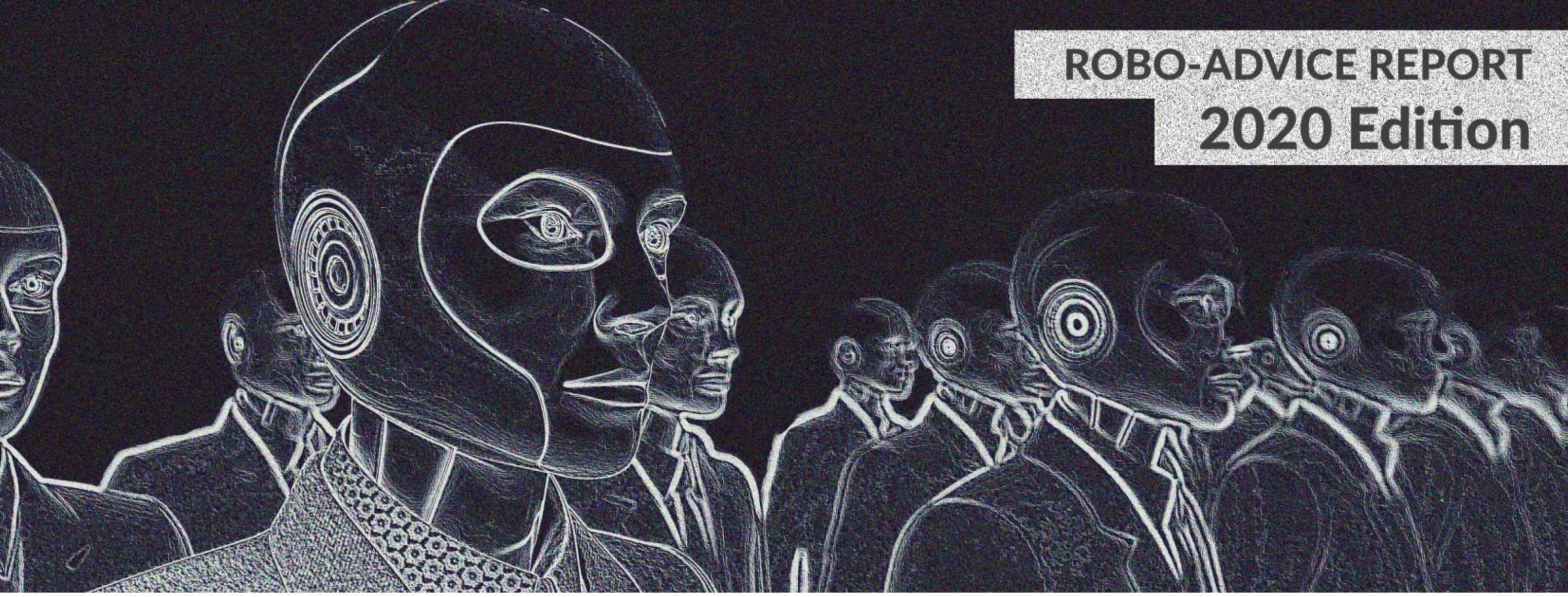
Investment services, including investment advice, are harmonised at EU level through the Markets in Financial Instruments Directive[15] (MiFID II). Investment advice is defined as "*providing personal recommendations to a client, either upon its request or at the initiative of the investment firm, in respect of one or more transactions relating to financial instruments*" (Art. 4(1)(4) of MiFID II).

In terms of ***investor protection***, MiFID II requires investment services providers, including advisors, to observe a few overarching rules on (1) conduct of business, (2) disclosure and (3) conflicts of interests.

Conduct of business	MiFID II contains several provisions regulating the way investment services providers must act in relation to their clients (investors). The cornerstone investor protection is the rule of acting "*honestly, fairly and professionally in accordance with the best interests*" of clients (whether professional or "retail" - Art. 24(1)), which applies to all providers and to any type of investment service, including advice.
Disclosure requirements and conflicts of interest	The overarching rule is that all information communicated to clients must be "*fair, clear and not misleading*" (Art. 24(3) MiFID II). In addition, investment services providers must also disclose "*all costs and related charges*", information about their services, execution venues etc. Regarding investment advice, the innovation of MiFID II is the obligation to disclose whether the advice is **independent or not**: the advisor must clearly inform the client if, who and how much is paying for a certain outcome of the investment advice given to the client (Art. 25(4) MiFID II). Lastly, the MiFID II policy on conflicts of interests is that these should be prevented (through appropriate internal policies and procedures) or, if not possible, clearly disclosed to the client (Art. MiFID II).
Suitability of investment advice	MiFID II requires advisors to assess what products or financial instruments, investment strategy and horizon would be *suitable* and aligned with the advisee's "*risk tolerance and ability to bear losses*" (Art. 25(2) MiFID II). This is called the *suitability assessment*, for which advisors or persons selling financial products must gather information on one's knowledge and experience with investments, financial situation, ability to bear losses, investment objectives and risk tolerance.

Source: BETTER FINANCE own research

[15] Pursuant to Art. 1(2)(b), read in conjunction with Section A of Annex I of MiFID II (Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU, OJ L 173, ELI: http://data.europa.eu/eli/dir/2014/65/oj).



The abovementioned obligations are further detailed in the MiFID II Delegated Regulation,[16] through implementing provisions: Arts. 33, 34, 37, 41, 44-57.

In addition, the EU supervisor for investment services – the European Securities and Markets Authority (ESMA) – adopted ***Guidelines*** on investment advice,[17] which ultimately became binding for advisors.[18] According to these Guidelines, Robo-advisors are subject to the same rules as traditional "human" advisors under the MiFID framework. The legal provisions and guidelines relevant for this research will be analysed in the following sections.

It suffices to say that EU citizens as "**retail**" investors benefit from a large regulatory framework protecting their rights and interests, although there is still room for improvement.

The Robo-Advice Market

Robo-advisors were predicted to become an important and disruptive force, fostering change in the wealth and management industries of today.

The global market

According to some sources, the "growth" of Robo-advisors severely underperformed its 2015 projections: if the 4- and 5-year growth estimates of Assets under Management (AuM) stood at €3.3 trillion ($4 trillion, 2019) and €6.6 trillion ($8 trillion, 2020), the actual AuM and adjusted projections for these two years are well below €1.6 trillion ($2 trillion) now.[19]

Data from Statista shows that capital managed by Robo-advisers worldwide reached almost $1 trillion in 2020, and the forecasts have been adjusted for the subsequent years: the expected annual AuM growth rate is of 26%, to reach $2.5 trillion by 2024.

[16] Commission Delegated Regulation (EU) 2017/565 of 25 April 2016 supplementing Directive 2014/65/EU of the European Parliament and of the Council as regards organisational requirements and operating conditions for investment firms and defined terms for the purposes of that Directive C/2016/2398, ELI: http://data.europa.eu/eli/reg_del/2017/565/oj.

[17] ESMA, *Guidelines on Certain Aspects of the MiFID II Suitability Requirements* (28 May 2018) ESMA35-43-869.

[18] This is because the ESMA Guidelines must be adopted by national regulators and imposed on financial services providers (or otherwise explain why not) pursuant to Art. 16(3) of the ESMA Regulation (Regulation (EU) 1095/2010 Regulation (EU) No 1095/2010 of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Securities and Markets Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/77/EC, ELI: http://data.europa.eu/eli/reg/2010/1095/oj). To our knowledge, no supervisor expressed opposition to these Guidelines.

[19] Christoph Merkle, 'Robo-Advice and the Future of Delegated Investment' (2020) 51 Journal of Financial Transformation, 20-27, 22, quoting data from Statista, p. 3, available at: https://ssrn.com/abstract=3612986.

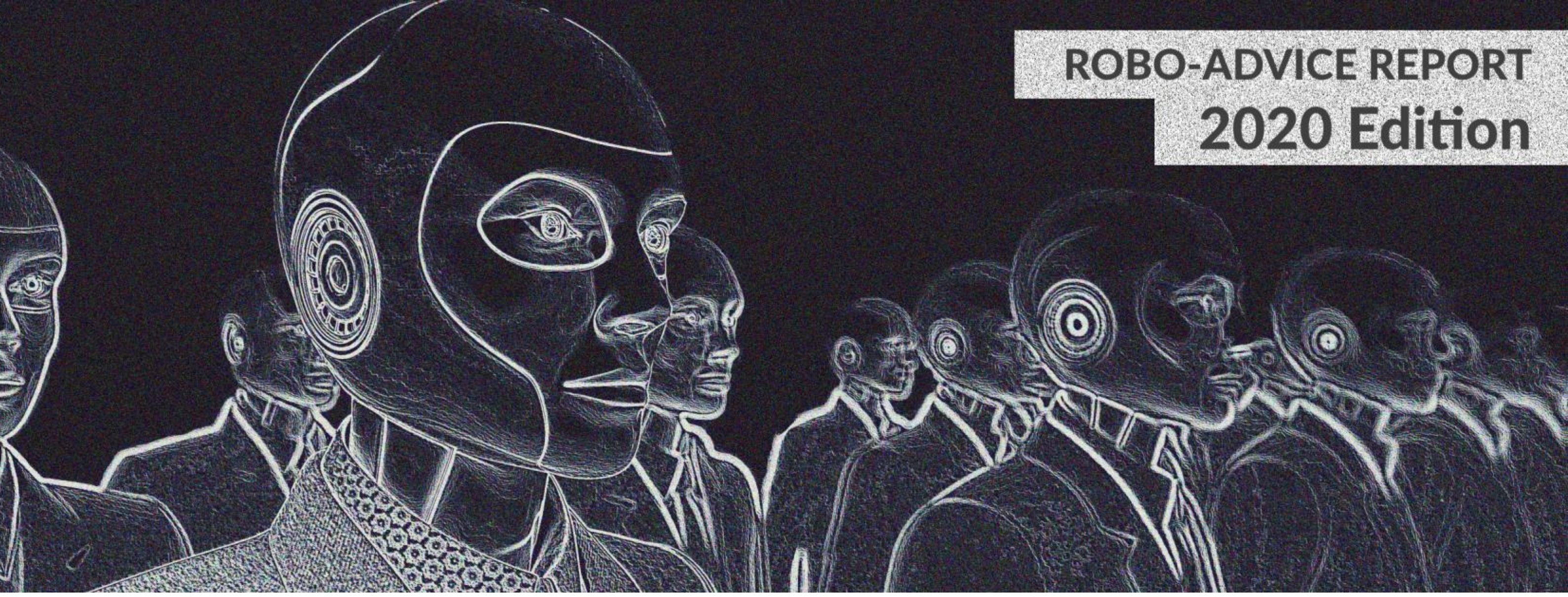
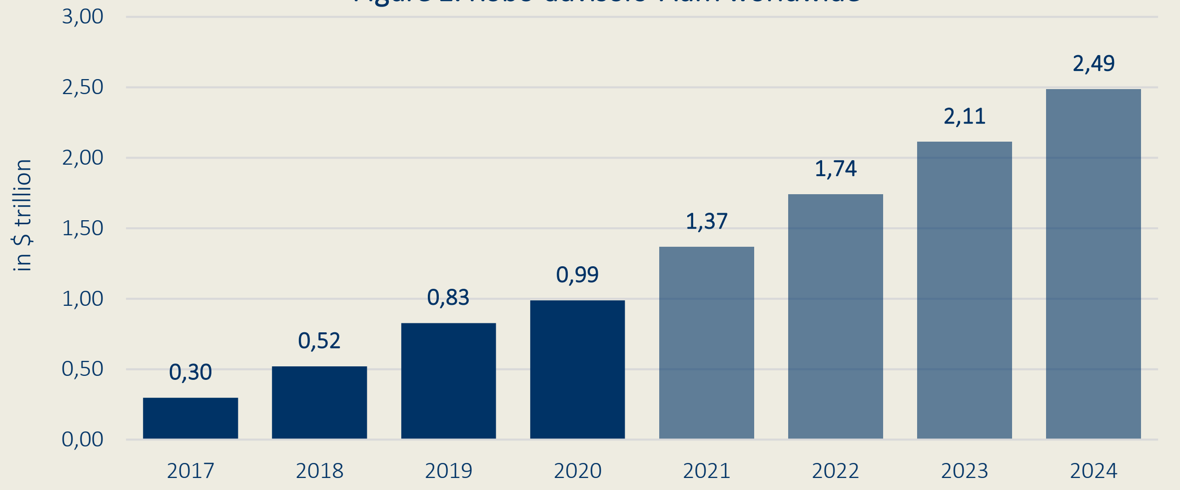


Figure 1. Robo-advisors' AuM worldwide



Source: Statista, 2020 (https://www.statista.com/outlook/337/100/robo-advisors/worldwide?currency=usd) – figures for 2021 – 2024 are estimated

Other earlier sources were more moderate in forecasts: in 2016, Robo-advisors were estimated to manage a cumulative $0.44 trillion in North America, Europe and Asia[20] or $0.5 trillion[21] by 2020.

Besides a steady growth in AuM numbers around the world, the last few years also witnessed an increase in the number of clients signing up for Robo-advice services. In recent years the wealth management industry encountered a new generation of clients, receptive to digital technology and with a preference for having active control over their investments as opposed to a more "hands-off" investment strategy reliant on traditional financial advisors.

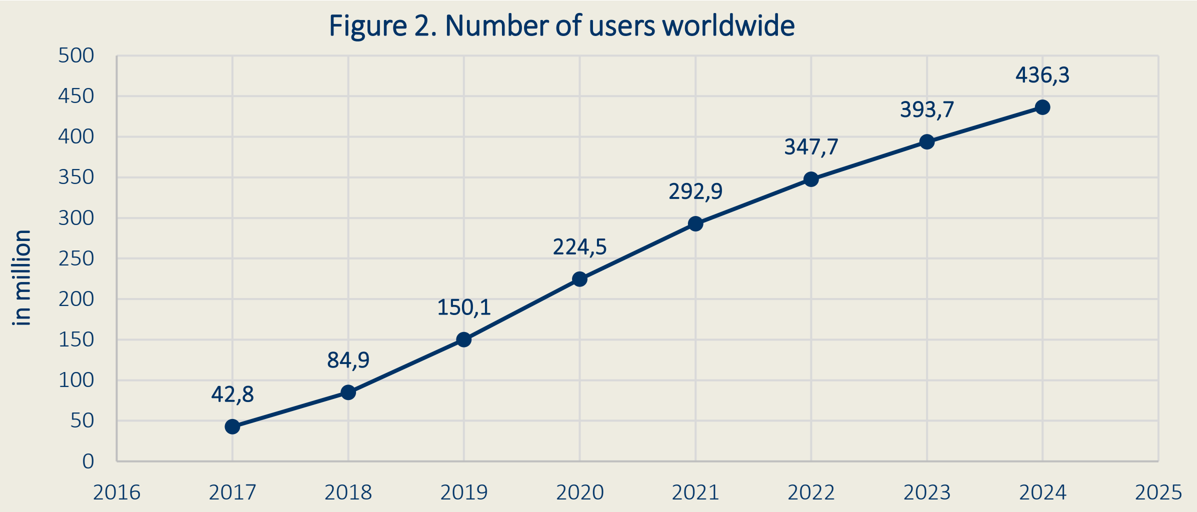
This new group of clients is also more inclined to rely on information from online sources rather than individual financial advisors. In addition, demographic changes are complemented by older generations that are becoming more tech-savvy, demanding more digital investment services to meet their demands.[22] In 2019, the number of clients of Robo-advisors reached 45 million worldwide and the number of users is projected to grow up to 147 million in 2023 (Figure 2). [23]

[20] See BETTER FINANCE, *Cyborgs vs Robots: Competing to Attract European Citizens' Money* (2017), p. 5, available at: https://betterfinance.eu/wp-content/uploads/publications/Robo_Investing_Report_070617.pdf, quoting a graph from Financial Times, Citi Business Advisory Services "Industry Evolution Survey" (October 2016).

[21] KPMG, 'Robo-Advice: Catching Up and Getting Ahead' (2016) KPMG, 4, https://assets.kpmg/content/dam/kpmg/pdf/2016/07/Robo-Advising-Catching-Up-And-Getting-Ahead.pdf after a report done by Cerulli Associates.

[22] Mikhail Beketov, Kevin Lehmann, Manuel Wittke, 'Robo Advisors: Quantitative Methods Inside the Robots' (2018) 19(6) Journal of Asset Management, 363-370.

[23] Statista: statistics portal Robo advisors: https://www.statista.com/outlook/337/100/robo-advisors/worldwide#marketStudy.



Source: Statista, 2020 (https://www.statista.com/outlook/337/100/robo-advisors/worldwide?currency=usd); figures for 2021 – 2024 are estimated

The emergence of Robo-advisors, as part of a fast-paced and changing Fintech market, has attracted the attention of the more traditional players of the financial industry. As a result, it is possible to see an emerging trend of more traditional institutional providers of financial services acquiring stakes, in full or in part, of this emerging market, thereby often influencing the independence of Robo-advisors.

Within the IT and digital sector, the acquisition of start-ups by big established companies is a common occurrence. This strategy allows for established providers and companies to limit future competition, as well as increase the level of in-house innovation and expanding their range of services available to their clients. An additional trend reported on in this 2019 BETTER FINANCE Research Report on Robo-advisors, is the merger of smaller Robo-advisors and smaller Robo-advisors being acquired or taken over by larger and more established Robo-advisors.

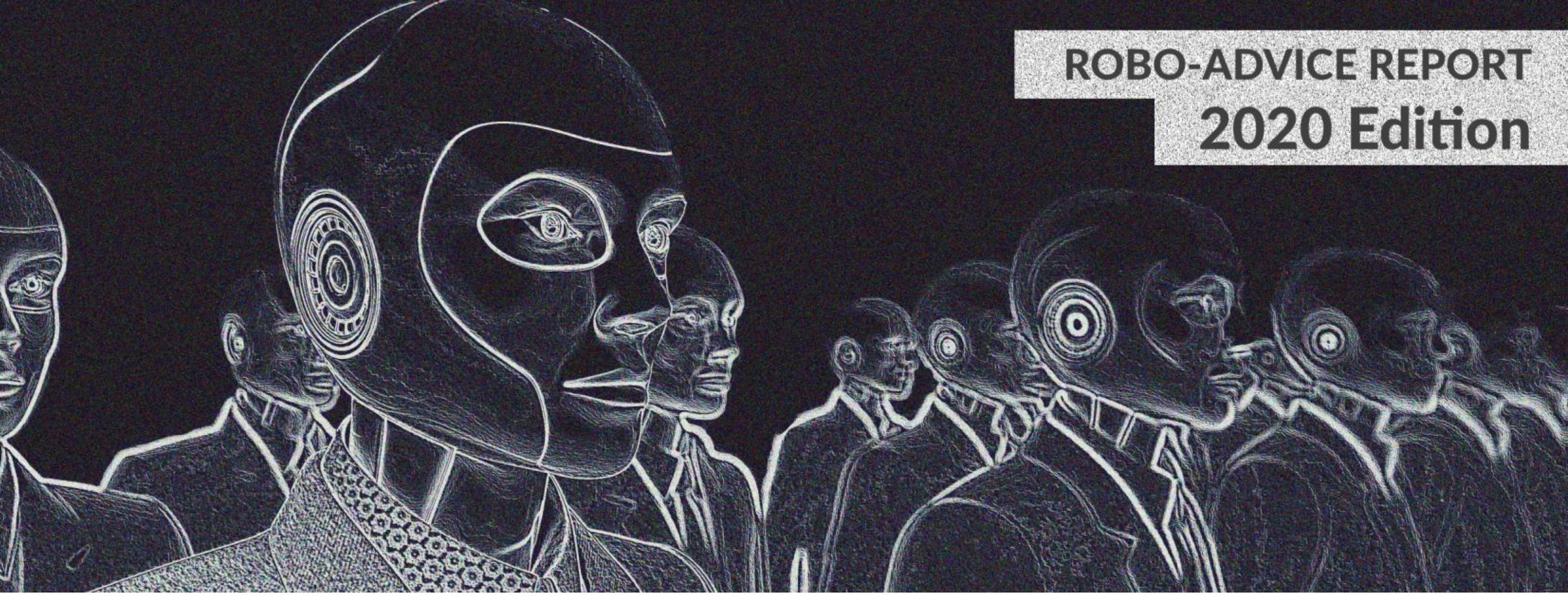
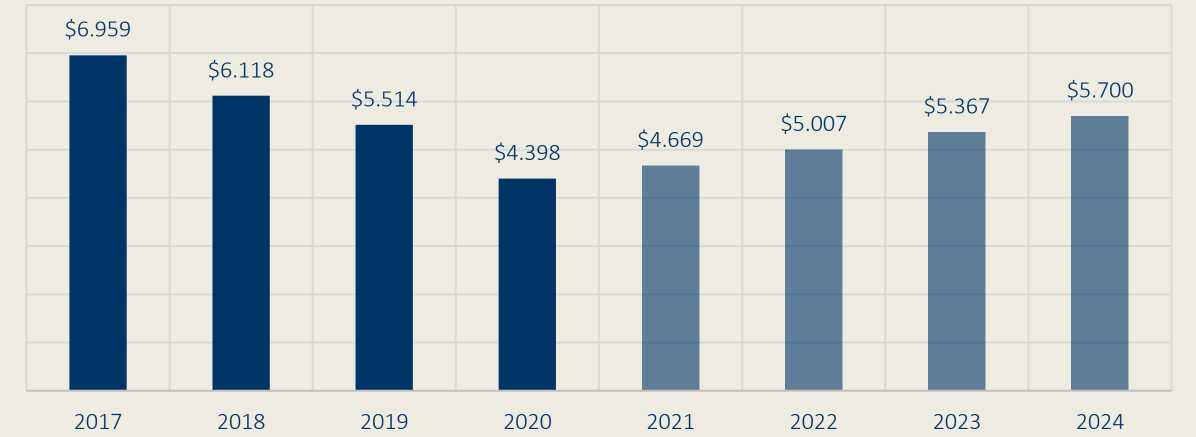


Figure 3. Average capital managed per user, worldwide



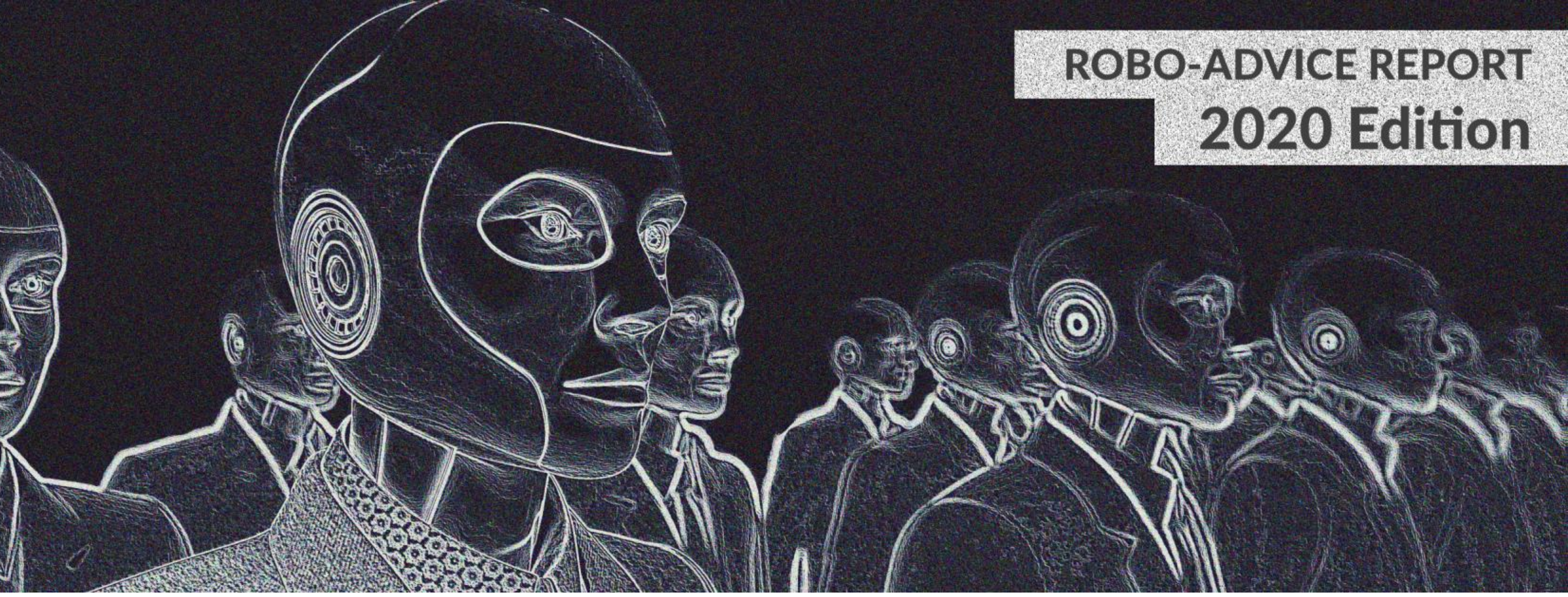
Source: Statista 2020 (https://www.statista.com/outlook/337/100/robo-advisors/worldwide?currency=usd); figures for 2021 – 2024 are estimated

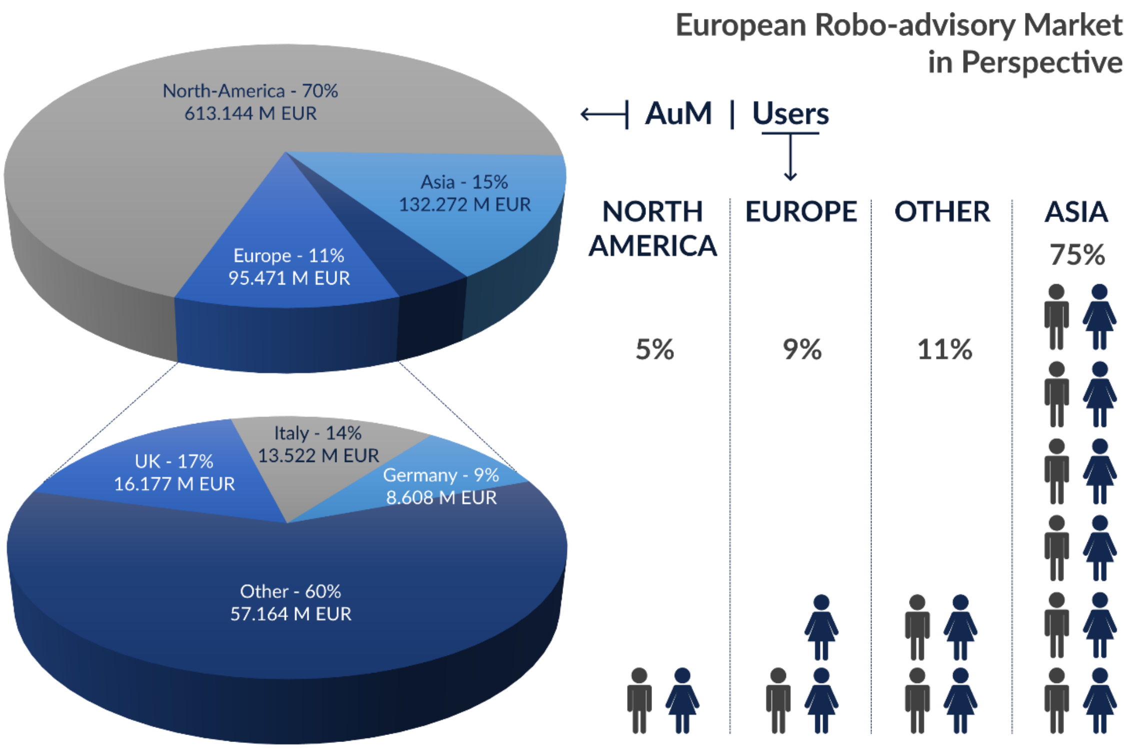
Comparing Figures 2 and 3 on the evolution of AuM and number of users, we obtain the average capital managed per user (worldwide), showing that the worldwide AuM grew at a slower pace than the number of users (49% vs 74%, 2017-2020). This could be explained either by the fact that Robo-advisors managed to penetrate a larger sector of the "retail" market and capture investors with lower investable amounts or by a lowering of the account minima (minimum investment thresholds) due to economies of scale.

The European market

In the global context, the European market for Robo-advisors and investors represents only a small share of the pie in terms of AuM (11% by AuM) and slightly less in terms of users (about 20 million in 2020). The dominant region by capital managed is North America (70%), where almost €0.6 trillion is located; this is thanks to the US market, which represents nearly the entire North American sector, with 99% of AuM and 87% of users being clients of US-domiciled Robo-advisors. Globally, the US market is also the leader, as it represents a share of almost 70% of AuM, but a much smaller share of users.

Based on data from Statista, Asia – the second largest market by AuM – has by far the highest number of users: some 168 million, representing 75% of the total number of users worldwide, which is eight times more than the number of European investors using Robo-platforms.





Source: Statista, 2020 (see Annex I for links to source)

Based on Statista data and estimations, the largest robo-advice market in the EU is in Italy (by AuM), with €13 billion, followed by France (€11 billion), Germany (€7.8 billion), the Netherlands (€6.2 billion), and Spain (€4.6 billion). However, by number of users and Robo platforms, the largest EU market is Germany, with over 2 million users, followed by France (1.56 million) and Finland (1.48 million). The UK continues to be a significantly developed market for robo-advice, with the equivalent of €16.1 billion in capital managed and approximatively 1 million and a half users. These stats are based on in-depth analysis, whereas the data for the less developed markets (Luxembourg, Slovenia, Latvia and Malta) are Statista's algorithm-based estimations.

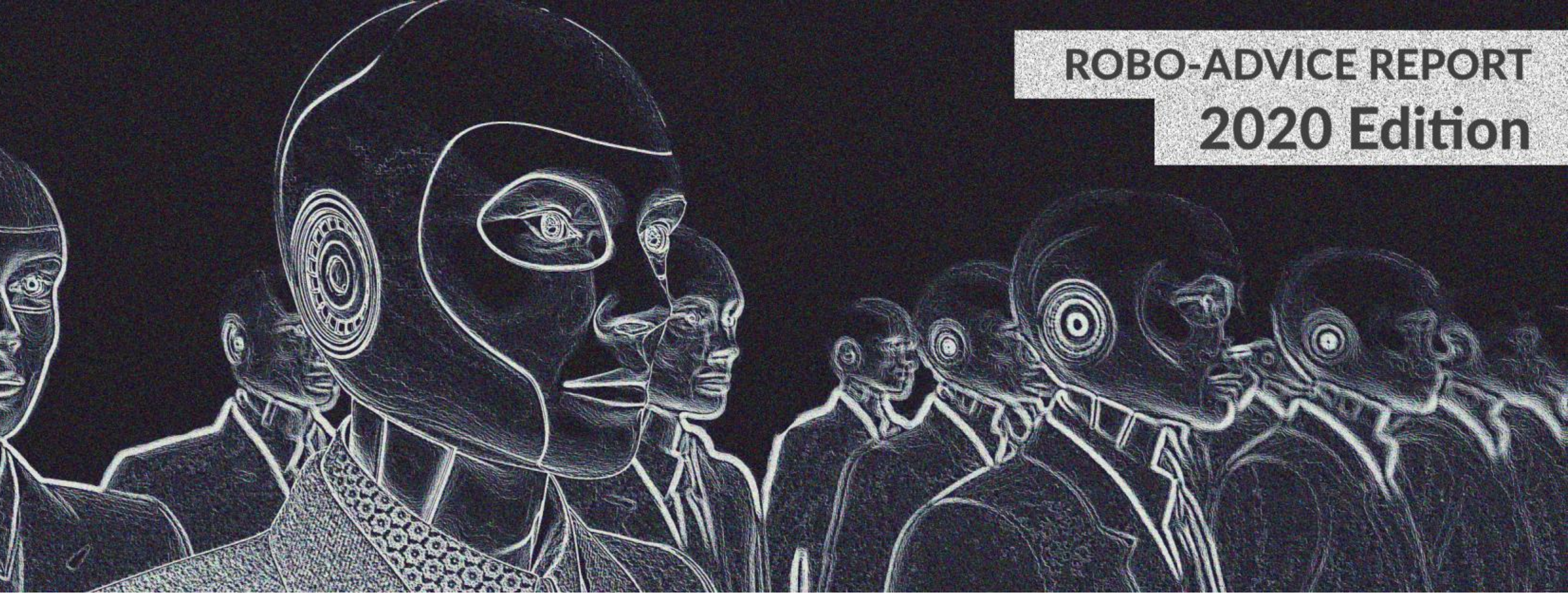


Table 5. European robo-advice markets (2020)						
	AuM		Users		Avg. AuM/user	Data type
	€ mil	% total	millions	% total		
IT	13,522	23.2%	1.01	10%	13,387	in-depth analysis
FR	11,372	19.5%	1.56	15%	7,309	in-depth analysis
DE	8,608	13.8%	2.09	20%	4,119	in-depth analysis
NL	6,355	10.9%	0.80	8%	7,992	in-depth analysis
ES	4,724	8.1%	0.43	4%	10,996	in-depth analysis
BE	2,507	4.3%	0.30	3%	8,268	in-depth analysis
SE	2,146	3.7%	0.28	3%	7,697	in-depth analysis
PL	1,673	2.9%	0.45	4%	3,759	in-depth analysis
DK	1,418	2.4%	0.17	2%	8,216	in-depth analysis
FI	1,290	2.2%	1.48	14%	871	in-depth analysis
IE	843	1.4%	0.12	1%	6,961	in-depth analysis
PT	746	1.3%	0.22	2%	3,431	in-depth analysis
AT	500	0.9%	0.17	2%	2,924	in-depth analysis
BG	461	0.8%	0.45	4%	1,024	algorithm-estimated
CZ	431	0.7%	0.16	2%	2,660	in-depth analysis
EL	364	0.6%	0.18	2%	2,056	in-depth analysis
RO	355	0.6%	0.16	2%	2,208	algorithm-estimated
HU	288	0.5%	0.11	1%	2,507	algorithm-estimated
CY	183	0.3%	0.02	0%	8,512	algorithm-estimated
HR	178	0.3%	0.06	1%	3,128	algorithm-estimated
SK	178	0.3%	0.07	1%	2,377	algorithm-estimated
EE	139	0.2%	0.03	0%	3,994	algorithm-estimated
LT	136	0.2%	0.07	1%	2,042	in-depth analysis
LU	130	0.2%	0.02	0%	8,176	algorithm-estimated
SI	119	0.2%	0.04	0%	3,005	algorithm-estimated
LV	108	0.2%	0.04	0%	2,813	algorithm-estimated
MT	32	0.1%	0.01	0%	3,441	algorithm-estimated
	56,585		10.5		5,392	

Source: Statista, 2020 (see Annex I for links to source);

Although some of the figures published by Statista are estimates, the research team cross-checked these for discrepancies. For instance, we found very few Robo-advisors, few users and limited AuM in the Romanian, Maltese, Estonian and Maltese markets. Table 6 presents some granular findings on the robo-advice platforms surveyed in 14 EU Member States and in the United Kingdom.

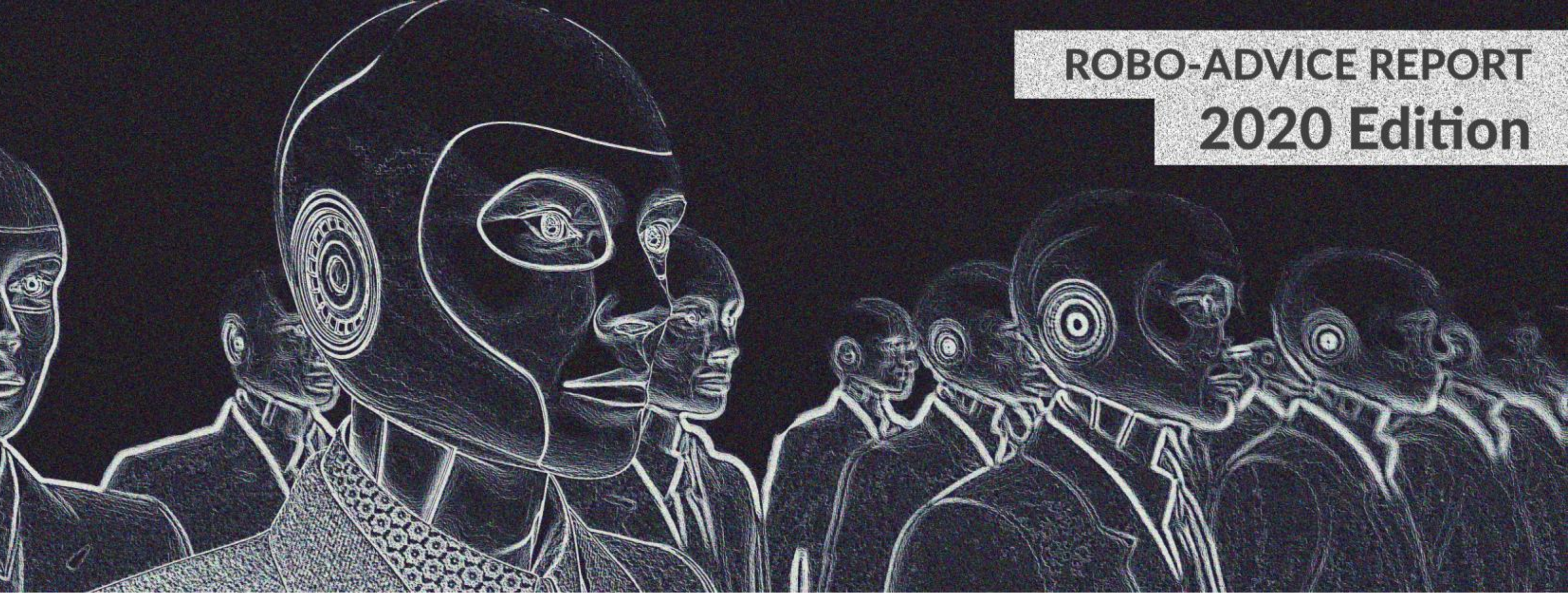


Table 6. Costs in selected European robo-advice markets (2017)				
	Cost (% of AuM)	ETF costs (% AuM)	Total costs (% AuM)	Min. inv. (€)
Germany	0.61%	0.25%	0.86%	4,500
Denmark	0.72%	0.21%	0.93%	2,000
Sweden	0.72%	0.22%	0.94%	100
Czech Republic	0.72%	0.22%	0.94%	100
Romania	0.72%	0.22%	0.94%	100
Portugal	0.72%	0.22%	0.94%	100
Poland	0.72%	0.22%	0.94%	100
Estonia	0.72%	0.22%	0.94%	100
Italy	0.85%	0.30%	1.15%	13,000
UK	0.93%	0.29%	1.22%	200
Netherlands	1.03%	0.27%	1.30%	2,000
Belgium	1.06%	0.22%	1.28%	5,000
Luxembourg	1.22%	0.25%	1.47%	10,000
Spain	1.32%	0.30%	1.62%	150
France	1.88%	0.45%	2.33%	4,200

Source: European Commission (footnote 24), Graphs 42-44; **Note!** *Cost* represents the average management costs per platform; the *ETF costs* represents the average fund management (ETF cost) per platform; *Min. inv.* stands for the minimum investment a user must make in order to register and become a client; *Total costs* is a simple arithmetic sum between the first and second columns.

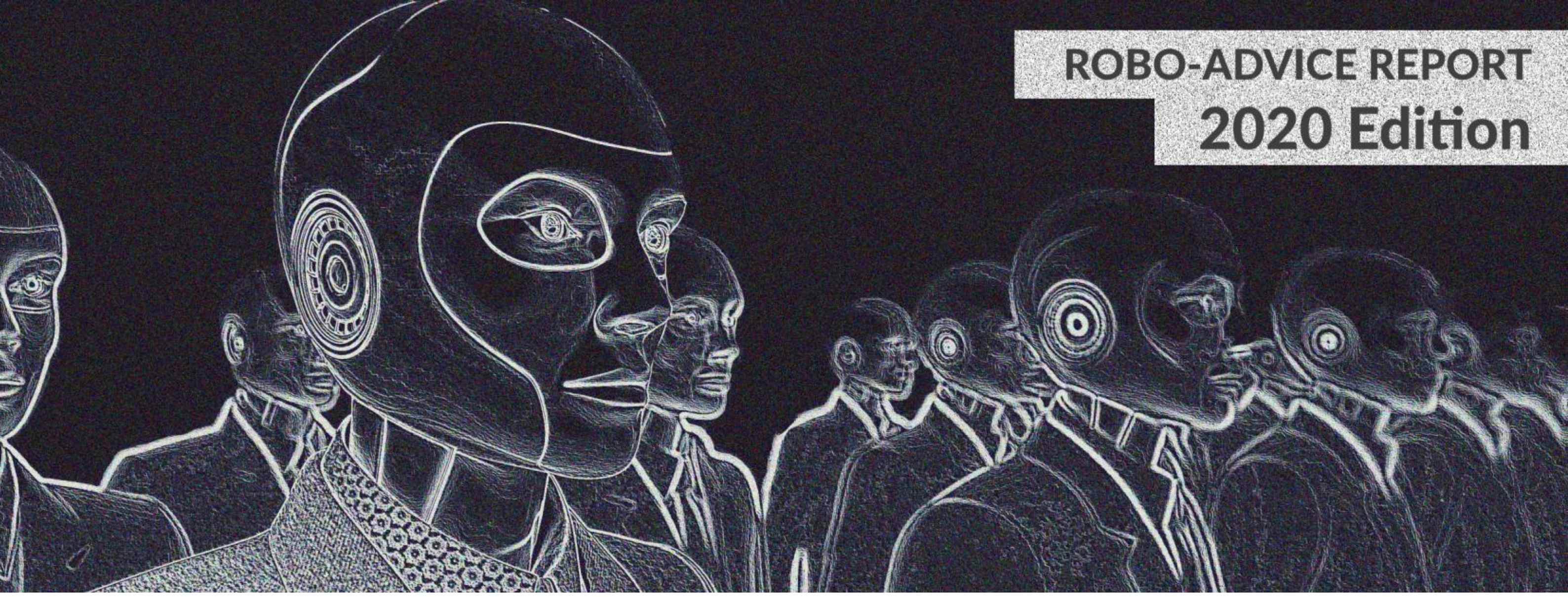
Although the data is from 2017, the report from which the data for Table 6 is sourced, does make some interesting observations: first, some of the robo-advice platforms also offer the possibility to include actively managed funds in the asset mix (portfolio), which could explain the very high portfolio management fees observed in the Netherlands, Belgium, Luxembourg, Spain and France.

Considering that the broker and custodian fees for investing in a portfolio of 50%-50% listed equities and bonds would amount to 1.67%, or that the mean ongoing charges of a French equity fund stood at 1.80% in 2017, a Robo-advisor/investor charging as much as 1.88% just for portfolio management can undo all the benefits of automation and use of low-cost, index-tracking ETFs.[24]

In terms of client demographics, data is scarce: research from Deutsche Bank on the German market shows that more than half of Robo-advisors' clients are at least 45 years old.

Coronavirus effects: Coming of Age of Robo-Advisors? Unfortunately, no analysis can ignore the COVID-19 health pandemic and the effects it has on all sectors. Social distancing and lockdown measures have led to a surge in the use of digital services, in particular in capital markets. On the robo-advice market,

[24] European Commission, 'Distribution Systems of Retail Investment Products Across the European Union: Final Report' (2018) European Commission, p. 170, 174-175, available at: https://ec.europa.eu/info/sites/info/files/180425-retail-investment-products-distribution-systems_en.pdf.



some platforms saw significant increases in account openings, such as Wealthfront (+68%),[25] Vanguard (+35%), PensionBee (+14%), AJ Youinvest (+13%), Hargreaves London (+7.4%).[26]

Benefits and Risks of Robo-Advisors

Robo-advisers, along with crypto-assets and distributed ledger technologies, came with the FinTech "boom". The application of digital technologies to financial services (*FinTech*) has been extensively researched and revolves around the advantages for, and risks posed to, financial stability and investor protection.

FinTech is considered to be disruptive to traditional financial services due to the innovation of "*products, services, processes or the distribution of the same traditionally provided by banks, investment firms and insurance firms and creating alternatives to the traditional financial sector*".[27] In particular, the most successful are those new entrants that target underserved "retail" markets, thus "*<<filling the gap>> left by traditional financial institutions*".[28] Indeed, new practices such as Robo-advisors, cyborgs,[29] initial coin offerings, peer-to-peer lending (or crowdfunding) or integrated payment services providers gained popularity, brought changes to the market landscape and prompted regulatory action from EU and national bodies. Moreover, the COVID-19 pandemic has further accelerated this digital transformation.

Turning to Robo-advisors, almost all publications researched by the authors of this report point to the (very) low level of fees and **the accessible investment thresholds**[30] as advantages of automated advice platforms. Indeed, evidence shows that Robo-advisors charge between 130 and 180 bps less than

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[25] GlobalData Financial Services, 'Robo-advice Takes Centre Stage During COVID-19 Crisis' (22 June 2020) Private Banker International, available at: https://www.privatebankerinternational.com/comment/robo-advice-takes-centre-stage-during-covid-19-crisis/.

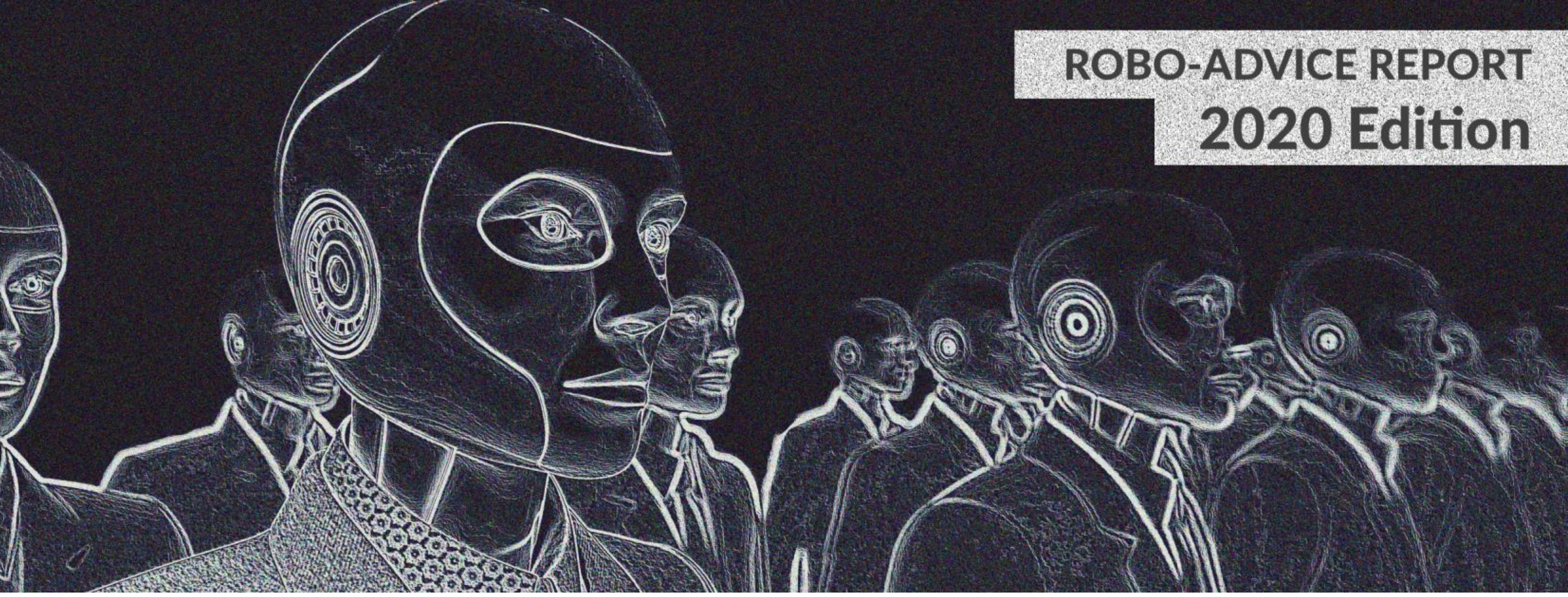
[26] CorporateVision, The Rise in Robo Advisory Services During Covid-19 (cv-magazine.com, 2 July 2020) available at: https://www.cv-magazine.com/the-rise-in-robo-advisory-services-during-covid-19/.

[27] Macchiavello, 'FinTech Regulation from a Cross-Sectoral Perspective' (n 7), 63.

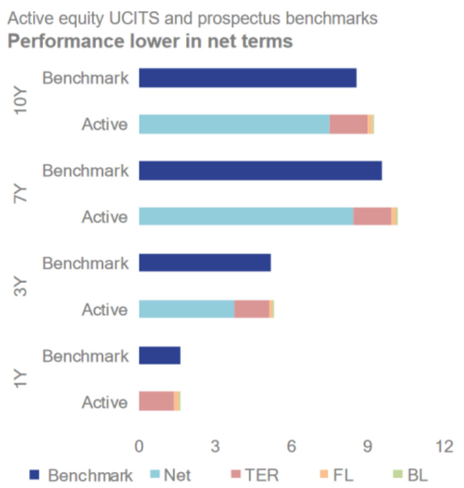
[28] Ratna Sahay, Ulric Eriksson von Allmen, Amina Lahreche, Purva Khera, Sumiko Ogawa, Majid Bazarbash, Kim Beaton, 'The Promise of FinTech: Financial Inclusion in the Post COVID-19 Era' (September 2020) International Monetary Fund, available at: https://www.imf.org/en/Publications/Departmental-Papers-Policy-Papers/Issues/2020/06/29/The-Promise-of-Fintech-Financial-Inclusion-in-the-Post-COVID-19-Era-48623.

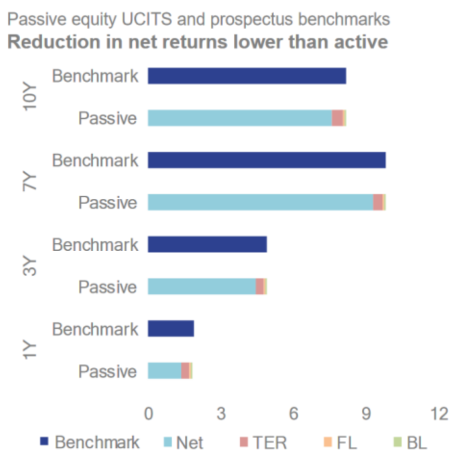
[29] See BETTER FINANCE's 2017 report arguing the difference between robo-advisors and cyborgs in investment services, BETTER FINANCE, '*Cyborgs vs Robots: Competing to Attract European Citizens' Money*' (June 2017), available at: https://betterfinance.eu/wp-content/uploads/publications/Robo_Investing_Report_070617.pdf.

[30] Many "Human" financial advisor require a minimum investment that could offset the cost of advice (e.g. €5,000) which is prohibitive or demotivating for a large part of EU savers, in particular the younger generations which do not have savings accumulated. A Deloitte report showed that robo-advisors need 52% less Assets under Management to cover the costs per advisor compared to a wealth manager; see Dominik Mouillet, Julian Stolzenbach, Andreas Bein, Ilma Wagner, 'Cost Income Ratios: Why Wealth Managers Need to Engage with Robo Advisors' (December 2016) Deloitte GmbH, p. 3, available at:
https://www2.deloitte.com/content/dam/Deloitte/de/Documents/financial-services/Robo-Advisory-in-Wealth-Management.pdf.



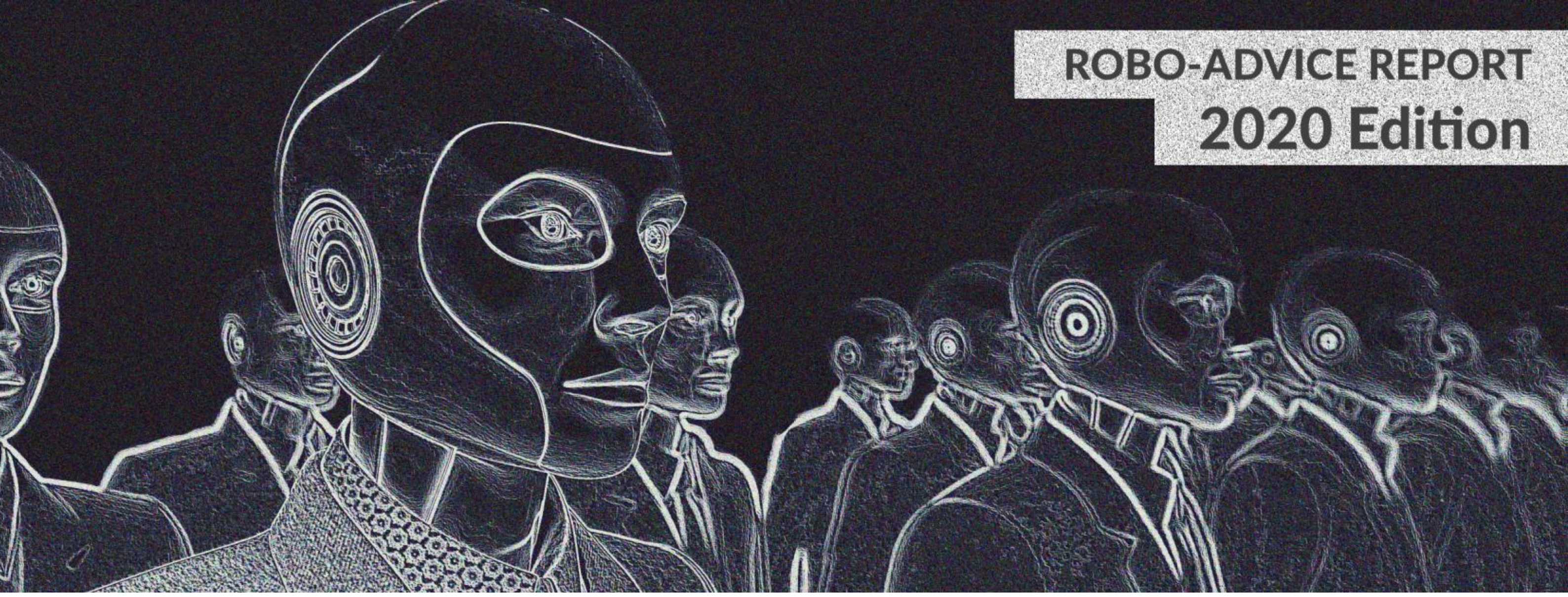
traditional asset managers on a balanced fund;[31] other studies show that, while the cost for "human" advice does not go below 0.75%, and can go as high as 1.5%, Robo-advisors charge six times less (0.25%).[32] In light of the negative effect that fees have on returns,[33] these are considerable cost-efficiency gains. BETTER FINANCE wishes to highlight the considerable improvement on ***real net returns*** portfolios recommended and managed by Robo-investors (Robo-advisors and cyborgs) for "retail" investors. Since most Robo-advisors use passive management strategies, based on low-cost index-tracking Exchange Traded Funds (ETFs), a non-professional investor may be better off after fees and inflation are deducted rather than with an actively managed, human-advised instrument or product.[34]





<u>*Source*</u>: ESMA Annual Statistical Report (2020)

[31] Gruppo di Lavoro CONSOB, Scuola Superiore Sant'Anna di Pisa, Universita Bocconi, Universita di Pavia, Universita di Roma "Tor Vergata", Universita di Verona, 'La Digitalizzazione Della Consulenza in Materia di Investimenti Finanziari' (2019) CONSOB Quaderni FinTech, p. 25, footnote 11 quoting a study from BlackRock.
[32] Abraham, Schmukler, Tessada, 'Robo-Advisers: Investing Through Machines' (n 5), 1, quoting data from EY (2015).
[33] See the BETTER FINANCE on the correlation between cost and performance of retail investment funds, showing that fees can reduce up to 0.88% the excess return (and net performance) of a EU retail UCITS: https://betterfinance.eu/wp-content/uploads/BETTER1.pdf.
[34] The two ESMA reports on cost and performance of retail investment products in the EU (2019, 2020) have shown that, net of fees, passively managed funds outperformed actively managed ones; see ESMA Annual Statistical Report, *Cost and Performance of Retail Investment Products in the EU* (2019, ESMA50-165-731 and 2020, ESMA50-165-1098); this finding is also supported by Merkle's research, showing that "[a] *passive low cost strategy will beat most active managers and advisor recommendations*", Merkle, 'Robo-Advice and the Future of Delegated Investment' (n 13), p. 6.



Other advantages of Robo-advisors are the user experience and perceived objectivity of the algorithm,[35] the (potential) absence of conflicts of interests and biases of human advisors,[36] as well as increased financial inclusion and literacy.[37]

The European Supervisory Authorities' (ESAs) 2015 Discussion Paper on automation in financial advice[38] highlighted a series of other benefits Robo-advisors can bring, such as increased accessibility through online distribution (B2), product or instrument diversity (B3), or the ability to receive "*financial advice in a faster, easier and non-time-consuming way*".[39]

Concerning the risks posed by Robo-advisors, most are derived from the substitution of human judgment and interaction with artificial intelligence. Some authors deem that Robo-advisors present risks such as "*errors in the underlying algorithm or limited ability to cover the specificities of all customers*".[40] The European Securities and Markets Authority (ESMA) also highlighted in its guidelines that automated platforms should mitigate the risk of advisees overestimating their knowledge and experience when filling the questionnaires without human supervision.[41] Other risks highlighted by researches underline data protection, financial stability and legal liability.

Are Robots the Future?

In order to truly develop as a competitive distribution channel, Robo-advisors need to overcome several obstacles to increase their use (by investment firms) and demand (by individual, non-professional clients). There are two major factors that require discussion in light of the development of robo-advisors: (i) ***the issue of trust*** , and (ii) ***the benefits of robo-advisors in light of "inducements"***.

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[35] M. Caratelli, G. Giannotti, N. Linciano, P. Soccorso, 'Financial Advice and Robo Advice in the Investors' Perception: Evidence from a Qualitative Study' (6 December 2019) CONSOB Quaderni FinTech, p. 7.

[36] See Merkle, 'Robo-Advice and the Future of Delegated Investment' (n 13), p. 3, quoting data from Statista; Gruppo di Lavoro CONSOB, 'La Digitalizzazione Della Consulenza in Materia di Investimenti Finanziari' (n 28), p. 68; In addition, Alemanni *et al*. highlighted that "*a strong incentive to pander investor beliefs as pandering induce investors trusting their professional to invest more and at higher fees*", see B. Alemanni, A. Angelovski, D. Di Cagno, A. Galliera, N. Linciano, F. Marazzo, P. Soccorso, 'Do Investors Rely on Robots? Evidence from an Experimental Study' (7 September 2020) CONSOB Quaderni FinTech, p. 25.

[37] Ester Faia, Monica Paiella, 'The Role of Fintech for the Capital Markets Union' in Ester Faia, Franklin Allen, Michael Haliassos and Katja Langenbucher (eds.), *Capital Markets Union and Beyond* (2019) MIT Press, 189 – 199, 191.

[38] European Supervisory Authorities' Joint Committee Discussion Paper on Automation in Financial Advice (4 December 2015) 4, JC 2015 080.

[39] Ibid, p. 17.

[40] Macchiavello, 'FinTech Regulation from a Cross-Sectoral Perspective' (n 7), p. 67.

[41] ESMA*, Guidelines on Certain Aspects of the MiFID II Suitability Requirements* (n 114) Supporting Guideline no. 51; on the other hand, several other studies regarding consumers' behaviour in the online environment highlight the differences between in-person and online questionnaires, revealing that the "interviewer effect" and "social desirability bias" may prompt respondents to to answer differently; see Bobby Duffy, Kate Smith, George Terhanian, John Bremer, 'Comparing Data from Online and Face-to-Face Surveys' (2005) 47(6) International Journal of Market Research, 615-639, 618 and 638, referring to studies by Taylor (2000) and Taylor *et al.* (2005) on internet researches and social desirability biases.

The Issue of Trust

Many authors doubt that robo-advisors will become dominant and replace traditional advisors, mainly due to the lack of human intervention that is deemed key for certain investments services[42] or in distressing situations.[43] Reports surveying consumer attitudes towards automated advice show that hybrid models, where automation is coupled with human assistance, are preferred rather than purely "robot" advisors.[44]

Unfortunately, the robo-advice share is still a negligible amount in the EU retail distribution market, dominated by in-house selling and non-independent advisors.[45] However, BETTER FINANCE disagrees with the reasons for which Robo-advisors have not taken off as expected five years ago.

In our view, distrust is the key factor preventing automated investment advice from acquiring a dominant share of the market. While "advice habit"[46] and unawareness[47] can be tackled, the other main deterrent stopping "retail" investors from seeking automated advice, is the distrust in financial institutions (in general) and emotional biases when interacting with Robo-advisors.

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[42] For instance, a report from Accenture argued that "*77% of wealth management clients trust their financial advisors and want to work with them to grow and manage their wealth*" and "*81% say that face-to-face interaction is important*", Accenture, 'The Rise of Robo-Advice: Changing the Concept of Wealth Management' (2015), available at: https://www.accenture.com/_acnmedia/pdf-2/accenture-wealth-management-rise-of-robo-advice.pdf; also, US literature challenges the ability of robo-advisors to deliver on the requirements for investment advice, including the fiduciary duty: see Melanie L. Fein, 'FINRA's Report on Robo-Advisors: Fiduciary Implications' (April 2016), available at: available at: http://ssrn.com/abstract=2768295; see FINRA Report on Digital Investment Advice (March 2016) available at: https://www.finra.org/sites/default/files/digital-investment-advice-report.pdf; also Alemanni *et al.* argue that clients want more deeper or stable interaction with human advisors, see Alemanni, Angelovski, Di Cagno, Galliera, Linciano, Marazzo, Soccorso, 'Do Investors Rely on Robots? Evidence from an Experimental Study' (n 33), pp. 18-20; Caratelli, Giannotti, Linciano, Soccorso, 'Financial Advice and Robo Advice in the Investors' Perception: Evidence from a Qualitative Study' (n 32), pp. 18-20.

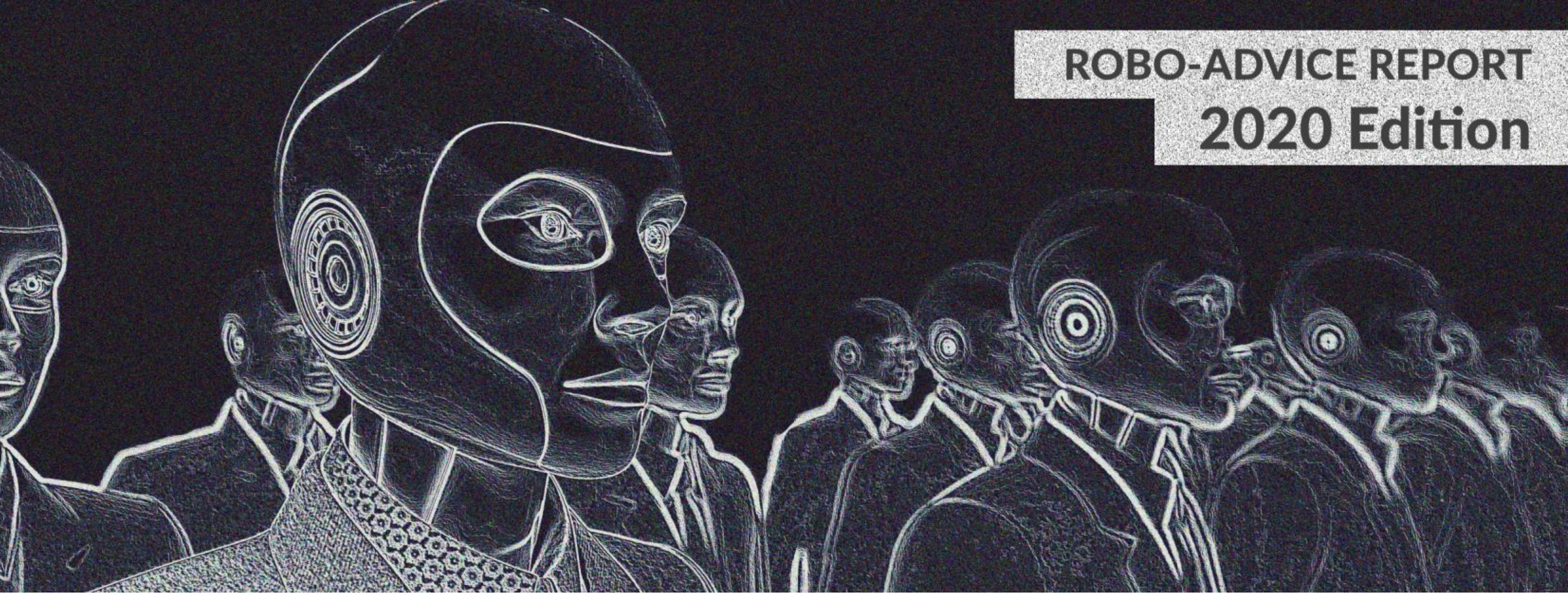
[43] Strzelczyk argued that, in certain situations such as market turmoil, a client "cannot technically "call up" the robo advisor for financial advice, or to discuss your investment strategy. In a frantic market sell-off, a human adviser can calm down her client in a way that a robo-advisor simply cannot" in Strzelczyk, 'Rise of the Machines: The Legal Implications for Investor: Protection with the Rise of Robo-Advisors' (n 7), p 62.

[44] For example, see Caratelli, Giannotti, Linciano, Soccorso, 'Financial Advice and Robo Advice in the Investors' Perception: Evidence from a Qualitative Study' (n 32), p. 20, concluding that the hybrid model is preferred due to the "human touch" element.

[45] See BETTER FINANCE response to the ESMA Call for evidence on the impact of inducements and costs and charges disclosure requirements under MiFID II: https://betterfinance.eu/wp-content/uploads/BETTER-FINANCE-Response-ESMA-CE-06092019.pdf.

[46] A study into the UK market brought evidence that, out of the small fractions of consumers that took financial action and sought advice in 2017 and 2018, most of them had done it before (66%) and a vast majority (89%) do not "shop around" and use the same firm for all their advice needs, see Ignition House, Critical Research, 'The changing shape of the consumer market for advice: Interim consumer research to inform the Financial Advice Market Review (FAMR)' (August 2018), available at: https://www.fca.org.uk/publication/research/famr-interim-consumer-research-report-2018.pdf; we believe these findings may hold for many retail financials services markets in the EU.

[47] In addition to the findings related to the "advice habit", there is also the issue of unawareness: studies into the Italian and UK households show that a very small fraction have even "heard of" automated investment advice, let alone having used one; for instance, 87% of Italian households were unaware of robo-advisors and 85% of respondents were not interested when asked if they would be willing to try (data from 2016); see M. Gentile, N. Linciano, P. Soccorso, 'Financial Advice Seeking, Financial Knowledge and Overconfidence: Evidence from the Italian Market' (March 2016) CONSOB Quaderni di Finanza; Ignition House, Critical Research, 'The changing shape of the consumer market for advice: Interim consumer research to inform the Financial Advice Market Review (FAMR)' (n 43); we believe these findings may hold for many retail financial services markets in the EU.



Households' saving and investment habits are directly affected by the amount of trust in financial institutions.[48] If "retail" savers are not attracted to invest, they will not seek an advisor to begin with, whether human or robot.[49] At the same time, if households do not trust a certain financial institution, they will consequently distrust the financial innovations adopted by it,[50] with the same applying to investment advice.[51] In this sense, European[52] indices of trust in consumer services and goods continue to rank financial services (or sectors of it) among the most distrusted by the "retail" sector.

In our view, this situation is very detrimental to "retail" investors and should be immediately addressed to unleash the potential of Robo-advisors. Trust can be improved, among others, through increased awareness of investor protection and increased financial literacy.

Most studies and EU policies on restoring consumer trust in financial services focus on improved disclosures and supervision by public authorities. One factor that deserves attention from policy makers is the individual's unawareness of the investor protection framework. An incidental finding in a research of the Italian consumer's propensity to seek advice and rely on Robo-advisors revealed that:

> "*Concerns about 'having to do it myself', as already said, discourages the use of Robo advice and at the same time reveals a lack of knowledge of the regulatory framework that protect investors receiving (either human or Robo) advice*"[53]

This finding could be coupled with the empirical evidence that "*Respondents who trust the European Union are more likely to invest in capital markets and diversify their savings*".[54] Perhaps if the EU would do more to inform "retail" investors of the framework that protects their rights and interests, Robo-advisors and capital markets in general would receive more attention from EU households.

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[48] A study of the Dutch Central Bank argued that distrustful consumers will engage less and "*may decide not to become customers of a financial institution*" -see Carin van Cruijsen, Jakob de Haan, Ria Roerik, 'Trust in Financial Institutions: A Survey' (August 2020) De Nederlandsche Bank Working Papers; see Elisabeth Beckmann, Davide Salvatore Mare, 'Formal and Informal Household Savings: How Does Trust in Financial Institutions Influence the Choice of Saving Instruments?" (1 August 2017) 2; also Gentile, Linciano, Soccorso, 'Financial Advice Seeking, Financial Knowledge and Overconfidence: Evidence from the Italian Market' (n 44).

[49] A study by Eve-Lachance and Tang showed the positive correlation between trust on financial advice and the use of the five types of advice, see Marie Eve-Lachance, Ning Tang, 'Financial Advice and Trust' (2012) 21 Financial Services Review, 209-226, 211.

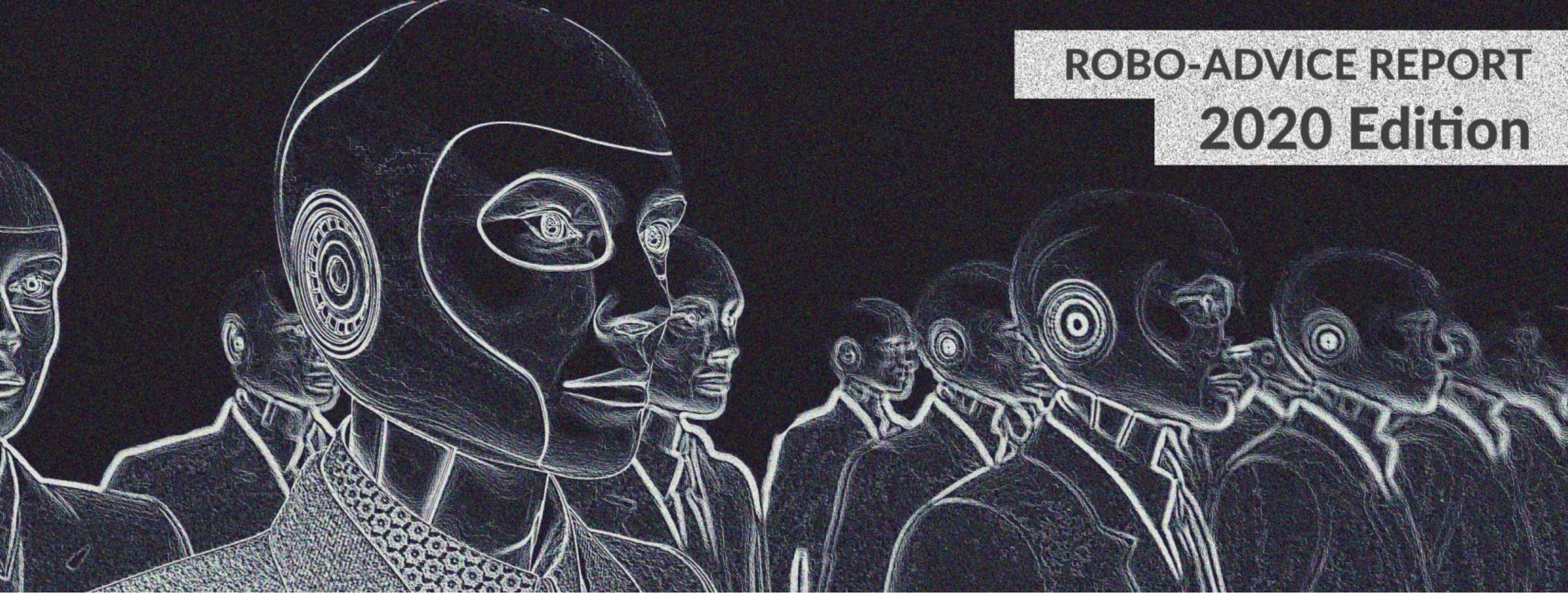
[50] Per a contrario, based on the finding that "*customers who trust banks will also trust financial innovations (like internet banking) introduced by these banks*", see van Cruijsen, de Haan, Roerik, 'Trust in Financial Institutions: A Survey' (n 45), p. 7.

[51] Eve-Lachance, Tang, 'Financial Advice and Trust' (n 46), p. 211.

[52] See the 2018 edition of the European Commission's Consumer Markets Score Board ranked financial services among the worst performing markets in Europe, https://ec.europa.eu/info/policies/consumers/consumer-protection/evidence-based-consumer-policy_en.

[53] See Caratelli, Giannotti, Linciano, Soccorso, 'Financial Advice and Robo Advice in the Investors' Perception: Evidence from a Qualitative Study' (n 32), p. 19.

[54] Beckmann, Salvatore Mare, 'Formal and Informal Household Savings: How Does Trust in Financial Institutions Influence the Choice of Saving Instruments?" (n 1), p. 12.



The propensity of "retail" investors to seek advice is also affected by their level of financial literacy[55] and sophistication.[56] Although it is still debated whether trust and financial literacy are directly or indirectly correlated;[57] researchers are more inclined to qualify financial literacy and trust as complements, rather than independent-dependent variables. Nevertheless, studies from the Dutch, Swedish and Italian market confirm that increased financial literacy would also improve stock market participation.[58]

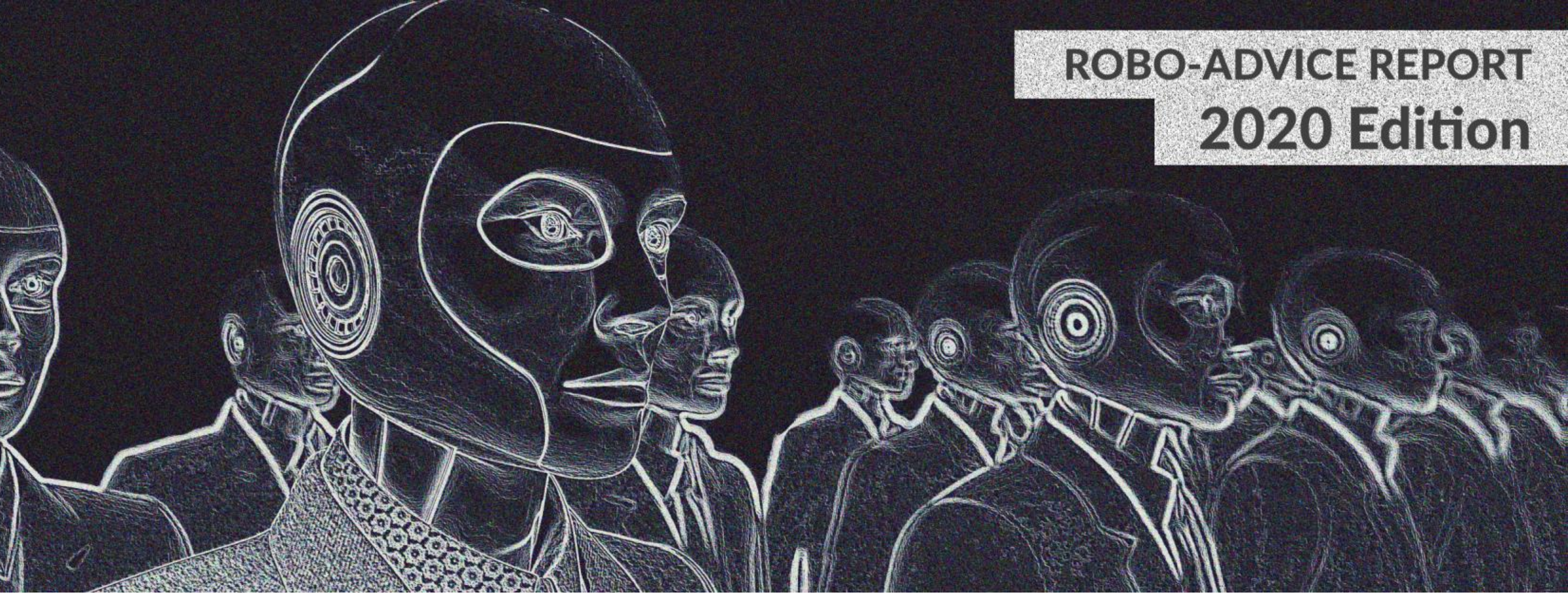
ROBO ADVISORS ARE LESS CONFLICTED THAN MAINSTREAM ONES

The lack of trust in the financial system can also be blamed on mis-selling,[59] and indirectly on the commissions received by investment advisors. This is because mis-selling can also originate in the **mismatch** between the investment recommendation and the needs of individual, non-professional ("retail") investors. The latter mismatch is potentially caused by the **receipt of "inducements" by** investment advisors **from** investment firms to recommend a certain financial instrument or investment product **to** a retail client.

Before delving into the debate, a few terminological clarifications are necessary:

"Inducements"	The term is used by EU law to describe "*fees, commissions or any monetary or non-monetary benefits paid or provided by*" anybody else except the client to the investment advisor in relation to the provision of investment advice (Art. 24(7)(b) MiFID II).
"Fee-only", "Fee-based", or "Commission-based" advice	Depending on who is directly paying for the investment advice service, three categories are traditionally distinguished: • fee-only, where the only remuneration of the advisor is the fee perceived from the client; • fee-based, where the main remuneration of the adviser is the advice fee charged to the client, but minor "commissions" can also be provided by third-parties; • commission-based, where the advisor is entirely or mainly paid by third parties other than the client (through "inducements").

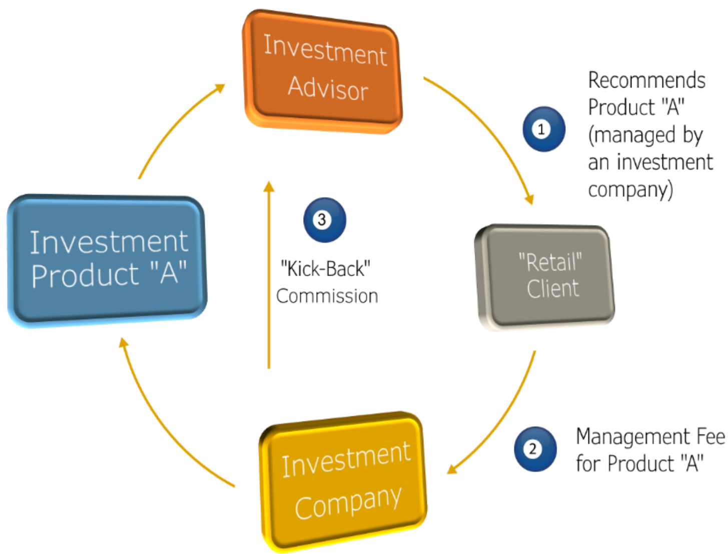
[55] Beckmann, Salvatore Mare, 'Formal and Informal Household Savings: How Does Trust in Financial Institutions Influence the Choice of Saving Instruments?" (n 1), p. 14.
[56] Gentile, Linciano, Soccorso, 'Financial Advice Seeking, Financial Knowledge and Overconfidence: Evidence from the Italian Market' (n 44), p. 11.
[57] *Ibidem,* at the same time, some authors found literature indicating that trust "*is positively correlated with financial literacy, which in turn some studies found to be positively associated to financial advice seeking*", see Alemanni, Angelovski, Di Cagno, Galliera, Linciano, Marazzo, Soccorso, 'Do Investors Rely on Robots? Evidence from an Experimental Study' (n 33).
[58] See the research review done by Moloney on investor education as a tool of investor protection in Niamh Moloney, *How to Protect Investors: Lessons from the EC and UK* (2010) Cambridge University Press, 376.
[59] BETTER FINANCE, A major enforcement issue: mis-selling of financial products https://betterfinance.eu/wp-content/uploads/publications/Misselling_of_Financial_Products_in_the_EU_-_Briefing_Paper_2017.pdf



“Independent” advisor / advice	The term is used by EU law to describe any investment advisor that does not accept or retain “inducements” for the provision of the investment advice (Art. 24(4)(a)(i), read in conjunction with Art. 24(7) of MiFID II).

***Note**: The fact that an “independent” advisor does not charge the client does not mean the advice service is not paid for. The essential distinction between “independent” and “non-independent” advice relies in who is directly paying the advisor:*

- *if it’s the client receiving the advice, the advice is considered “independent”;*
- *if it’s a third-party (such as investment product manufacturers), the advice is considered “non-independent”; however, in most cases it is still the client that ultimately bears the cost of advice, which is bundled in the total cost figure of the investment product.*



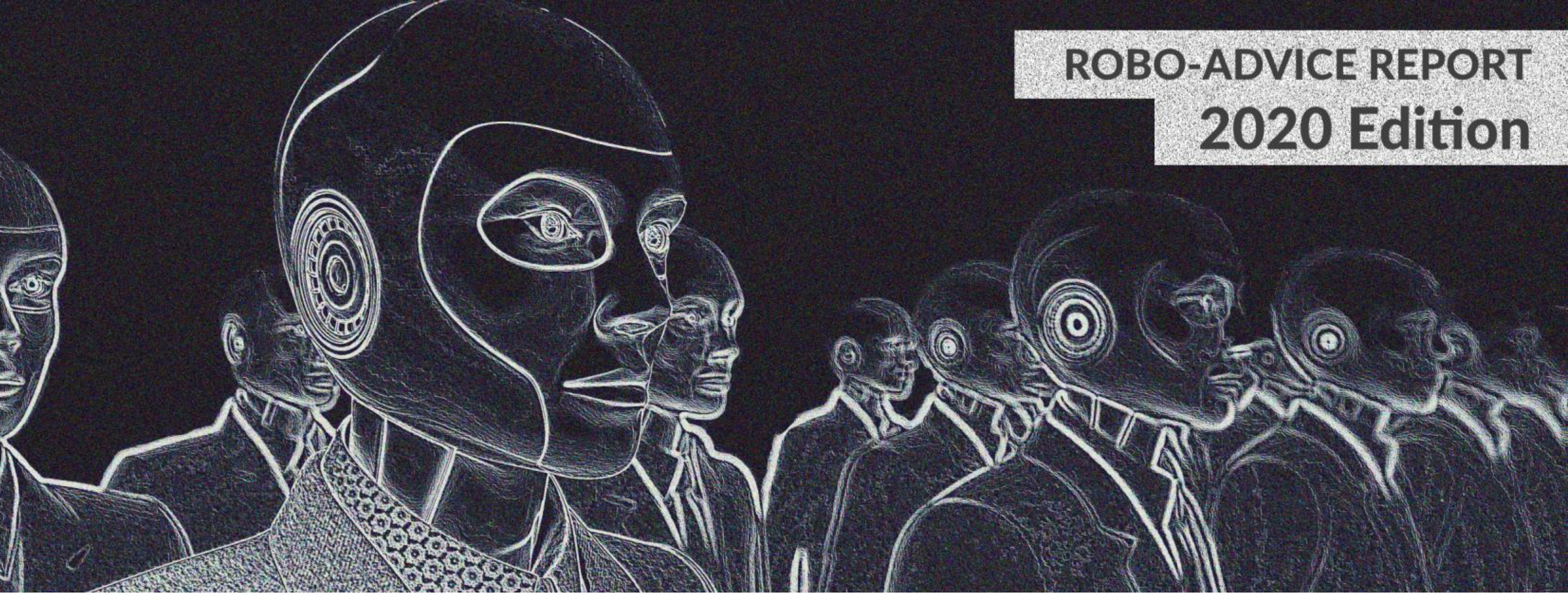
A common model is that by which an investment product manufacturer (“Investment Company”) distributes a product (“Investment Product A”) through an investment advisor, under agreement to receive a commission if the latter recommends and sells product “A” to the retail client (1). The retail client will pay a periodical “management fee” to the investment company (2), of which the investment company will “kickback” a share (typically half or more of the “management” fee) to the investment “advisor” (3).

Source: BETTER FINANCE own composition

As shown in the ***Independent investment advice disclosure table*** (p. 29) most robo-advisors’ business models do not involve the receipt of “inducements” (these are “fee-only”). Therefore, these can be deemed to deliver **independent investment advice**,[60] thus eliminating the issue of conflicts of interest in the retail distribution chain.

While BETTER FINANCE acknowledges that the debate on whether “inducements” do cause a conflict of interest is not one-sided, we believe that the receipt of incentives (fees, commissions, other types of

[60] See, for instance, PWC, “Robo Advisory Moves Forward in Italy”, www.pwc.com/it, p. 23, available at: https://www.pwc.com/it/it/publications/assets/docs/robo-advisory-italy.pdf.



benefits) from investment firms by investment advisors for recommending certain financial products is inconsistent with the obligation to act in the client's best interests (Art. 24(1) MiFID II).[61] Several other authors highlight that one of the key issues in financial advice is the "*conflict of interest arising from compensation schemes and lack of separation between sales and advice*",[62] or that "*a very particular type of conflicts of interest is the one caused by the receipt or payment of inducements*".[63]

Moreover, even EU law itself labels such practices as "non-independent" advice and seems to suggest that retaining inducements for investment advice to retail clients can be a **source of conflicts of interests** (Art. 23(1) MiFID II)[64] or even **impair with the** general **obligation to act in the client's best interests** (Art. 24(10) MiFID II).[65]

So far, EU law did not fully ban the receipt of inducements by investment advisors when dealing with **retail** clients, as the regulators in the UK and the Netherlands did. Since 2014, UK- or NL-based advisors advising "retail" clients are no longer allowed to be "remunerated" for their advice service by anybody else than the client itself.[66] Pursuant to MiFID II, investment advisors can accept inducements, but:

- if the advisor retains the *inducements*, he cannot call himself "independent";
- if the advisor passes on the remuneration to the client, or does not accept inducements, he will be deemed "independent".

In a perfect market without information asymmetry,[67] inducements could be adequately weighted by the investor in assessing the recommendation received from the advisor. However, the reality is

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[61] BETTER FINANCE Response to the ESMA Consultation paper on inducements: https://betterfinance.eu/wp-content/uploads/BETTER-FINANCE-Response-ESMA-CE-06092019.pdf.

[62] Veerle Colaert, Thomas Incalza, 'Conflicts of Interest and Inducements in the Financial Sector' in Veerle Colaert, Danny Busch, Thomas Incalza (eds.), *European Financial Regulation: Levelling the Cross-Sectoral Playing Field* (2020) Hart Publishing, 377 – 394, 377.

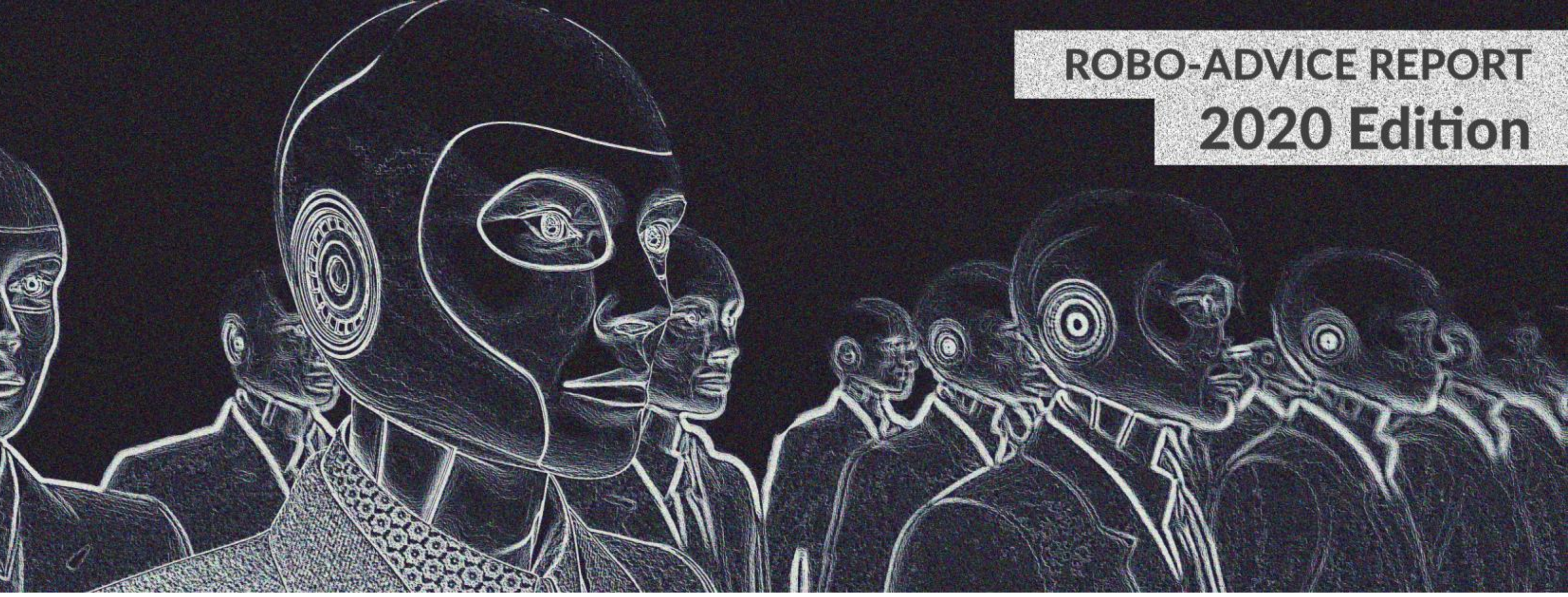
[63] Michael Haliassos, Alexander Michaelides, 'Asset and Debt Participation of Households: Opportunities and Challenges in Eliminating Borders' in Ester Faia, Franklin Allen, Michael Haliassos and Katja Langenbucher (eds.), *Capital Markets Union and Beyond* (2019) MIT Press, 113 – 126, 118; See also Marie Eve-Lachance, Ning tang, 'Financial Advice and Trust' (2012) 21 Financial Services Review, 209-226, 209.

[64] The first paragraph of Article 23 MiFID II requires investment services providers to take "*all appropriate steps*" to prevent or manage conflicts of interest, including those "*caused by the receipt of inducements*".

[65] Paragraph 10 of Article 24 MiFID II obliges investment firms to not adopt remuneration arrangements, sales targets or other schemes that would incentivise its staff to recommend products if other more suitable products are available, being deemed to conflict with the duty to act in the clients' best interest.

[66] See, for the Dutch ban on inducements, De Brauw, 'New Ban on Inducements for Investment Firms' (De Brauw Blackstone Westbroek, 13 January 2014) available at: https://www.debrauw.com/legalarticles/new-ban-inducements-investment-firms/; see also Maria Nikolova, 'ESMA Does Not Recommend Complete Ban on Inducements for Retail Products Across the EU' (financefeeds.com, 1 April 2020), available at: https://financefeeds.com/esma-not-recommend-complete-ban-inducements-retail-products-across-eu/.

[67] Based on the neo-liberal economic theory according to which all capital market agents have access to the same information and act as "rational" agents, attempting to optimise their risk-adjusted returns; however, the rational behaviour of "retail" investors is hampered by the complexity and asymmetric access to information – see Alexander Kern, *Mis-selling of Financial Products: Marketing, Sales and Distribution* (June 2018), European Parliament, PE 618-996, p. 8.



different, and studies show that "retail" investors are unaware of this conflict of interests. For instance, in the Dutch market, between 92% and 95% of consumers **do not read** or **read superficially** the *services statement* or the *qualitative statement of costs* where inducements are disclosed.[68] Research on Italian households shows even grimmer results: 82% of respondents were **convinced** that advice is for free (37%) or did not know whether the adviser is paid or not (45%).[69]

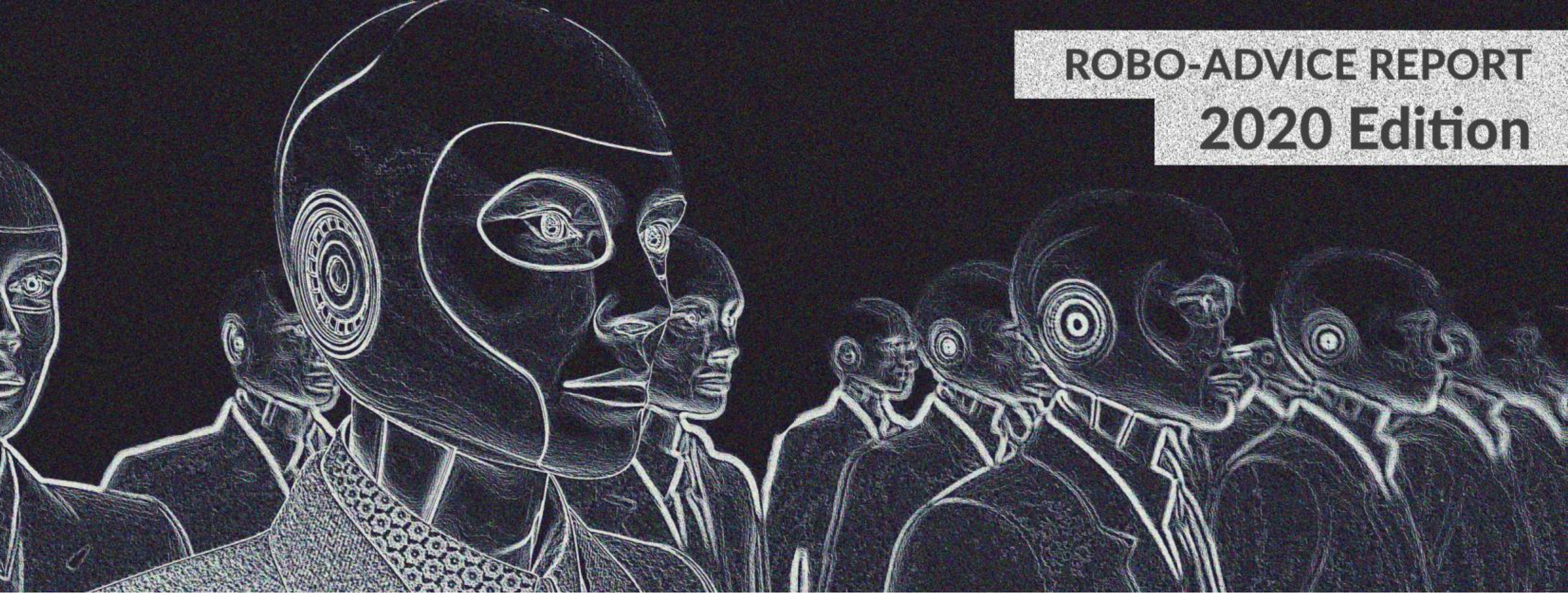
Moreover, the issue becomes even more complex when distinguishing between securities and insurance-based investment products. In short, if the rule under MiFID II (securities markets) is that inducements are not allowed except for "non-independent" advice, in insurance distribution inducements are by default allowed, and exceptionally banned.[70]

To date, BETTER FINANCE has not found publicly available evidence of any robo-advisor receiving any monetary or non-monetary benefit ("inducements") for recommending a certain financial instrument or product. The research team analysed whether the robo-advisors selected for "mystery shopping" provide independent advice or not based on their regulatory disclosures.

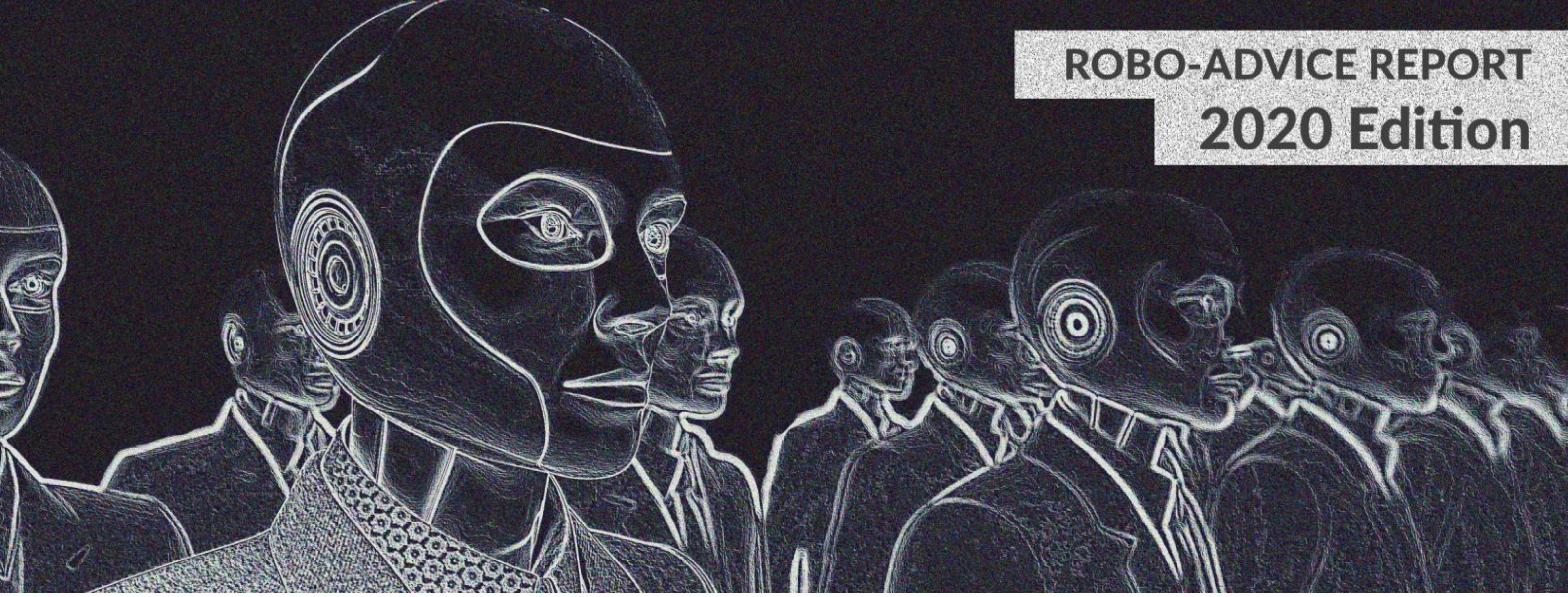
However, an investment firm providing investment advice (in this case, robo-advisors) **must** disclose whether the investment advice is provided on an independent basis or not (Art. 24(4)(a)(i) MiFID II). MiFID II does not create the assumption that advice is either independent or non-independent, save where it states otherwise. This means that platforms or traditional advisors that do not disclose whether the advice is independent or not are not taking into account a key disclosure requirement under MiFID II, but otherwise could provide both equally. Therefore, there are two possibilities when the robo-advisor does not specify what type of advice is provided:

- Assume that advice is independent, because otherwise it would imply that many more other disclosure requirements under MiFID II and MiFID II DA are breached (the robo-advisor must disclose the nature, exact amount or calculation method of the inducement, as well as the third-party that provides it, and must identify it under the conflicts of interest disclosure);
- Indicate that the platform does not specify what type of advice is provided, meaning it could be equally independent or non-independent.

[68] See BEUC, *The Case for Banning Commissions in Financial Advice* (September 2019), p. 7, BEUC-X-2019-046, available at: https://www.beuc.eu/publications/beuc-x-2019-046_the_case_for_banning_commissions.pdf.
[69] Gruppo di Lavoro CONSOB, 'La Digitalizzazione Della Consulenza in Materia di Investimenti Finanziari' (n 28), p.14.
[70] In this sense, see Veerle Colaert, Thomas Incalza, 'Conflicts of Interest and Inducements in the Financial Sector' in Veerle Colaert, Danny Busch, Thomas Incalza (eds.), *European Financial Regulation: Levelling the Cross-Sectoral Playing Field* (2020) Hart Publishing, 377 – 394, 382.



Independent advice disclosure table		
EU platforms	***Website disclosure***	***Investment advice (results)***
Easyvest	*“Easyvest does not receive any commission” “Life insurance: Management fees (…) on which the fund manager who does not pay any commission to Easyvest or its insurer”.*	No additional information
Easyfolio	*"Because, unlike many banks or financial advisors, we are completely independent when it comes to product selection."*	No additional information
Growney	*“A reduction in the potential for conflicts of interest also follows the fact that we do not accept commissions or benefits from third parties also reduces the potential for a conflict of interest”.*	No additional information
Quirion	*“(…) We are guaranteed to receive no commissions and are completely independent. (…) without additional costs, hidden fees or commissions”.*	No additional information
Whitebox	*(…) No sales charges or hidden fees. We are completely independent in our investment decisions: We do not have any products of our own and do not accept kickbacks or other payments from third parties, neither from product manufacturers nor from our custodian bank”.*	No additional information
Indexa Capital	*“Indexa does not receive any commission for recommending products from* [index fund manager] *or other index fund managers”*	No additional information
Yomoni	No indication	No additional information
Investify	“Measures to avoid conflicts of interest: (…) Regulations on the acceptance, granting and disclosure of benefits as well as their disclosure to the client and their basic full forwarding to the client.”	No additional information



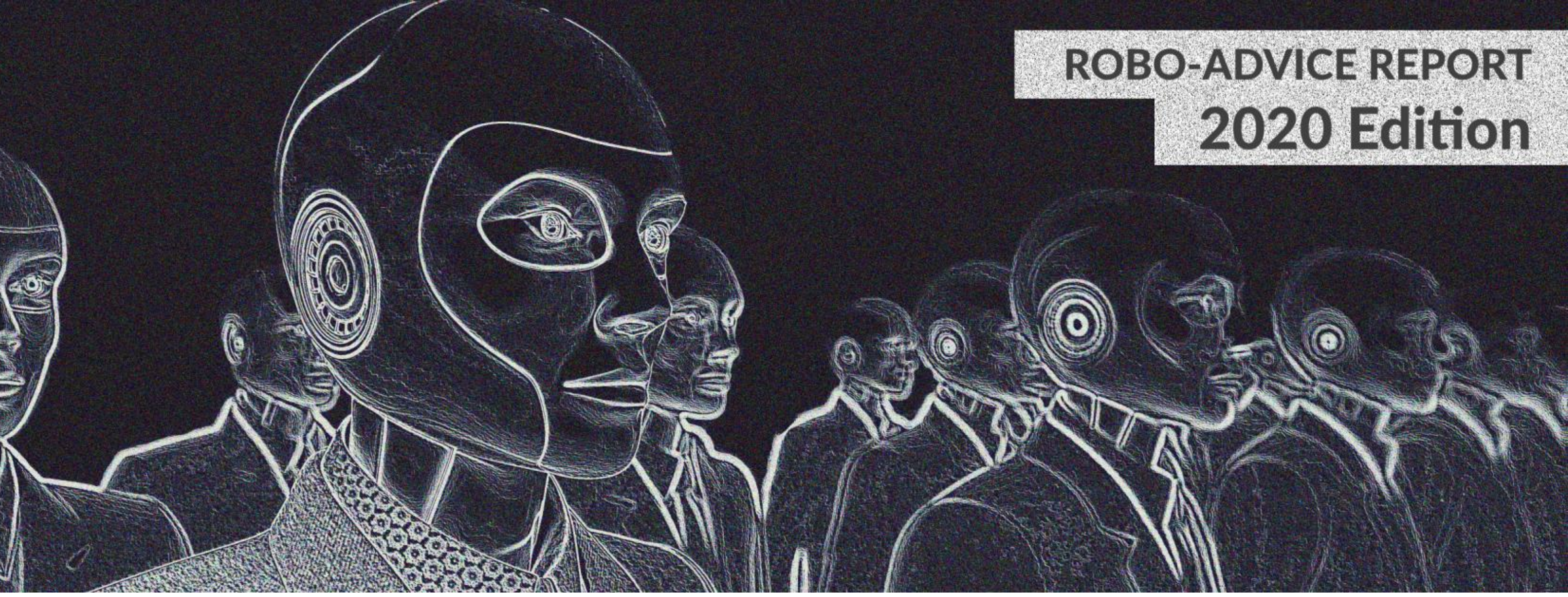
Finanbest	No indication	*“At Finanbest we have ensured that the managers apply "institutional" or "clean" class fees, which are well below the average for the sector”*.
Nalo	*« Sans rétrocommission : "Nous investissons l'épargne de nos clients exclusivement sur des ETF, qui ne versent pas de rétrocommissions ou rétrocessions.* *Nous sommes donc totalement impartiaux dans la façon dont nous gérons les portefeuilles*".	No additional information
Finax	*“*no fees from the profit achieved* **no hidden charges”*	No additional information
Euclidea	"*Independent by nature* (…) *select the best ETFs, no hidden cost* (…) *Transparent: our MiFID 2 reports will speak plain and simple* (…) *in total absence of conflict of interest and without hidden costs*".	No additional informationn

Source: BETTER FINANCE own composition based on mystery shopping

The table above summarises the research done on the MiFID II disclosures related to investment advice. Most robo-advisors disclose (and, in a subjective interpretation, take pride in) the fact that no commissions, inducements, “kick-backs” or other incentives are retained to recommend certain investment products and that the product selection is “independent”.

Most often, this information can be found on the website of the provider in the ***Costs*** section and only in one case the recommendation simulation (or advice) is accompanied by the same disclosure. No piece of EU law prescribes exactly where, or the moment when, the disclosure must be done, nor that it has to be done, i.e. to explicitly state that no inducements are retained. In this sense, we can assume that all platforms provide independent investment advice. However, we have observed that 2 out of 12 EU-based platforms do not clearly specify whether the investment advice provided is on an independent basis or not, in accordance with Art. 24(4)(a)(i) MiFID II. Unfortunately, four others (of those who do make a reference to non-receipt of commissions) do not adequately indicate that advice is independent and what this entails, as required by Art. 52 MiFID II DR. Finding such information proves, on many occasions, very difficult, as the research team had to “dig” deeply into legal documentation to access it

Two disclosures deserve special attention:



(a) <u>“institutional” or “clean” share class fees</u>: these terms pertain to the finance jargon and describe:
   - on one hand, a fee category applied to professional (“institutional”) clients, which are generally much cheaper than those applied to “retail” clients;
   - on the other hand, a “clean” class is a term mostly used in the UK and the Netherlands to describe fee categories that exclude the commissions, fees, or kick-backs paid to the investment advisor, meaning that inducements are not possible for these classes of funds ;

(b) <u>“No in-house investment products”</u>: on many occasions, those who advise or sell financial products are employees (staff) of the product manufacturer, thus escaping the rules on investment advice under MiFID II; if, pursuant to Article 24(10) MiFID II, they cannot be incentivised to recommend one in-house product over another, if the latter would better fit the client’s needs, these agents are still naturally inclined to recommend in-house products over third-party products, for which there is no restriction or ban on sales arrangements; in this sense, the mention that “*no in-house investment products*” (“*we do not have any product of our own*”) are offered by the Swiss-based platform (TrueWealth) is important and an example of good practice in light of the *independence* of the advice service as it shows the absence of any source of conflicting interest of the seller/advisor with that of the client.

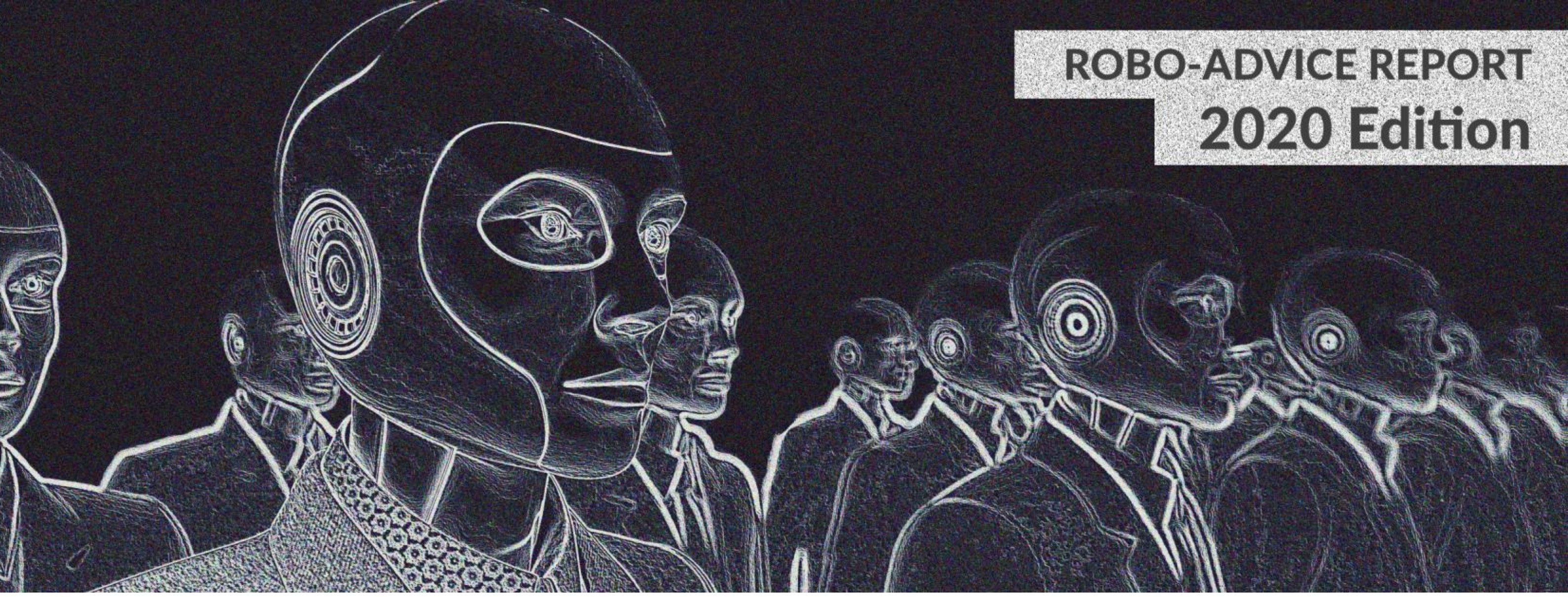
Methodology

This report intends to add to the existing research by testing Robo-advisors to analyse their features and by replicating the experience of two individual investors and their engagement with the different platforms. Since investing should not be a full-time job for EU citizens as savers and investors, the usability and understandability of the services on offer should not depend on or involve any research that could or would not be carried by an individual investor. More specifically, this research aims to examine Robo-Investment providers for their reliability, user-friendliness, transparency, costs and suitability for retail investors through “mystery shopping”. Algorithm testing was introduced as part of BETTER FINANCE’s work in 2018 and, following its successful reception, continued to be part of the research in 2019 and 2020.

The criteria for the two profiles are the same since the 2018 BETTER FINANCE Robo-advice research in order to provide consistency and comparability across the two years.

Investor Profiles

In order to perform the algorithm testing, we used two investor profiles with the following characteristics:



I. **Millennials,** with a shorter investment horizon but a higher risk appetite,
II. **Baby-boomers**, with a long-term goal, more savings to invest but also a less risky approach

The initial investment amount is of €10,000 for the Millennial and €100,000 for the Baby-boomer[71]. Considering how many years an average employee in the European Union would need to save in order to accumulate the previously mentioned amount to be invested, we chose the age of the two profiles based on this criterion[72]. Hence, the millennial would accumulate around €10,000 by the age of 30[73] and the Baby-boomer would have accumulated €100,000 by the age of 50. The investment goal of the millennial is to raise money towards a real estate property over 5 years' time. Considering that the millennial is more financially literate, he is willing to take higher risks for higher returns in short-term markets.

Millennial

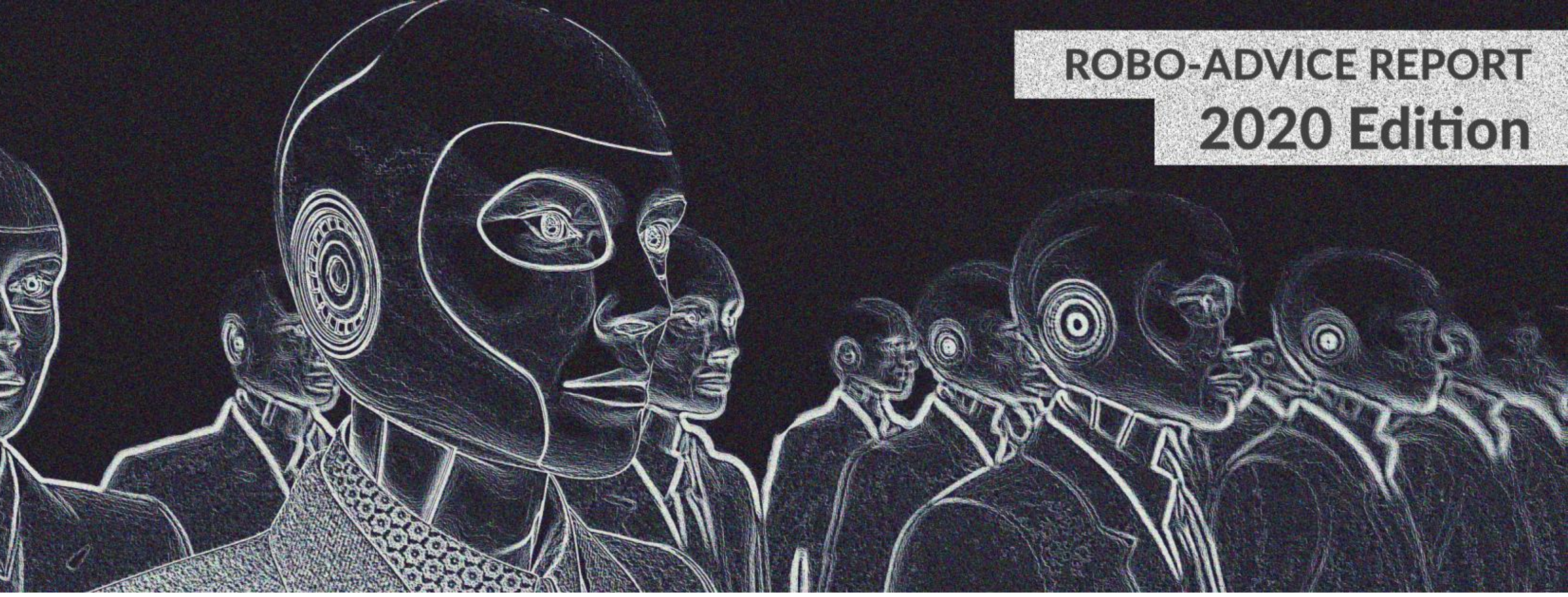
- Single
- No children
- Master's degree in banking and economics
- Financially literate[74]
- No real practical experience with investments

Baby-boomer

- Married
- With grown-up children
- Degree in engineering
- Not financially literate
- Some experience with investments (pension savings, life insurance)

The investment goal of the baby-boomer is planning for retirement. She knows that the poor return of her occupational pension plan needs to be adjusted with additional savings.[75] She has an investment

[71] Net of liabilities.
[72] Based on Eurostat data, the average monthly net income in the EU is 1,500 EUR – see here. In addition, we use an annual income increase rate of 2% based on an assumption used in the Bocconi study – see A. Berardi, C. Tebaldi, F. Trojani, 'Consumer Protection and the Design of The Default Investment Option of a Pan-European Pension Product' (2018) SDA Bocconi School of Management.
[73] Modest savings ratio of 1:9 of the income (10% per month).
[74] The objective degree of financial literacy can be different to the *self-assessment* described below.
[75] BETTER FINANCE Report on the Real Returns of Long-Term and Pension Savings, 2020 edition: https://betterfinance.eu/wp-content/uploads/The-Real-Return-Long-Term-Pension-Savings-Report-2020-Edition.pdf.



horizon of 20 years and aims for a more conservative investment with lower risk tolerance compared to the Millennial.

Additional details to our investor profiles have been added to correct the errors (divergences in recommendations) that may stem from filling out the questionnaires:

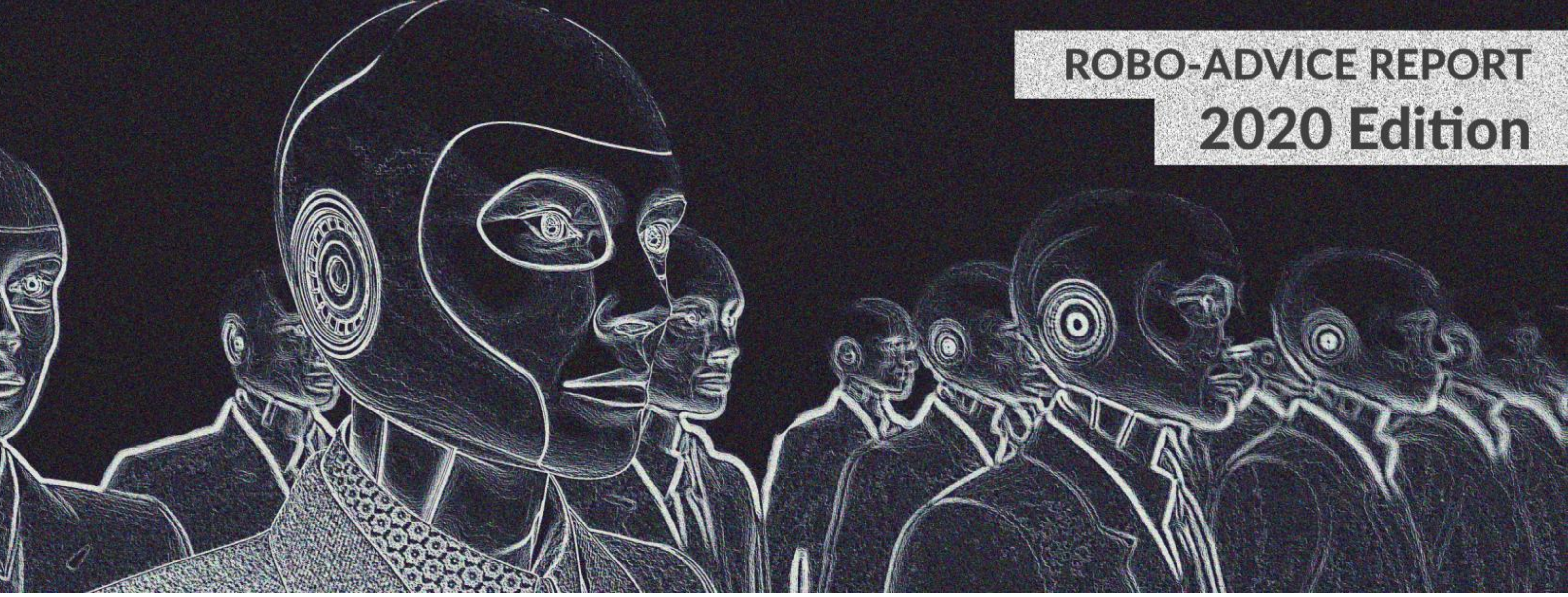
- risk tolerance:
  - *millennial*: redeem investments if the value suddenly drops 50%;
  - *baby boomer*: redeem investments if the value suddenly drops 20%;
- loss absorption capacity:
  - *millennial*: can sustain a 40% loss of his initial investment.
  - *baby-boomer*: can sustain a loss of 20% of her initial investment.
- self-assessment:
  - *millennial*: considers himself financially literate and an aggressive investor (that can take risks for higher rewards); wants to invest in equities;
  - *baby-boomer*: considers herself to have moderate knowledge of capital markets, wishes a balanced investment (not too much risk but not too low returns); wants more stable investments;
- propensity to follow advice: neutral.

Based on past years' experience, the details prepared for each investor profile did not always suffice to answer all questions from the different Robo-advisors; whenever the questionnaires required additional information, it has been developed strictly aligned with each profile.

Pre-determined Recommendations

The algorithm testing aims to determine whether the investment advice received for the same profile differs from one platform to another. This edition improves the methodology and adds a pre-determined recommendation for comparison purposes. The research team used a *Model Investor Questionnaire* - developed by a team of academics and researchers behind the Orange Envelope project[76] (hereinafter "OE") – to determine our two investors' risk profiles and obtain a portfolio allocation that would serve as **a point of comparison** for each platform analysed (the ***reference allocation***).

[76] See Annex II describing in detail the Orange Envelope project; in short, it is a non-profit organisation set up by researchers and academics that will run a portal for pension savings tracking, providing research, dashboards, analyses, and simulations for individual pension savings; for more information, see https://www.oranzovaobalka.sk/web/en/; the Orange Envelope does not provide financial services as per Annex I, Section I, of MiFID II.



Note: The reference allocation based on the Model Investor Questionnaire ***is not a benchmark*** *for the suitability or quality of the other recommendations received; in other words, if the asset allocation of a real robo-advisor differs from the reference allocation, it does not mean that one or the other is wrong. The reference allocation is used only for research purposes to help the research team put in a comparative light the portfolio allocations of each Robo-advisors and of the entire group. Moreover, the reference allocation* ***should not be understood as optimal, nor better than any other recommendation received,*** *nor should it be understood as an offer for or an actual investment, legal or fiscal advice for any person reading this report. The reference allocation is a mock one, based on mock profiles, and should be treated as such.*

Model Investor Questionnaire

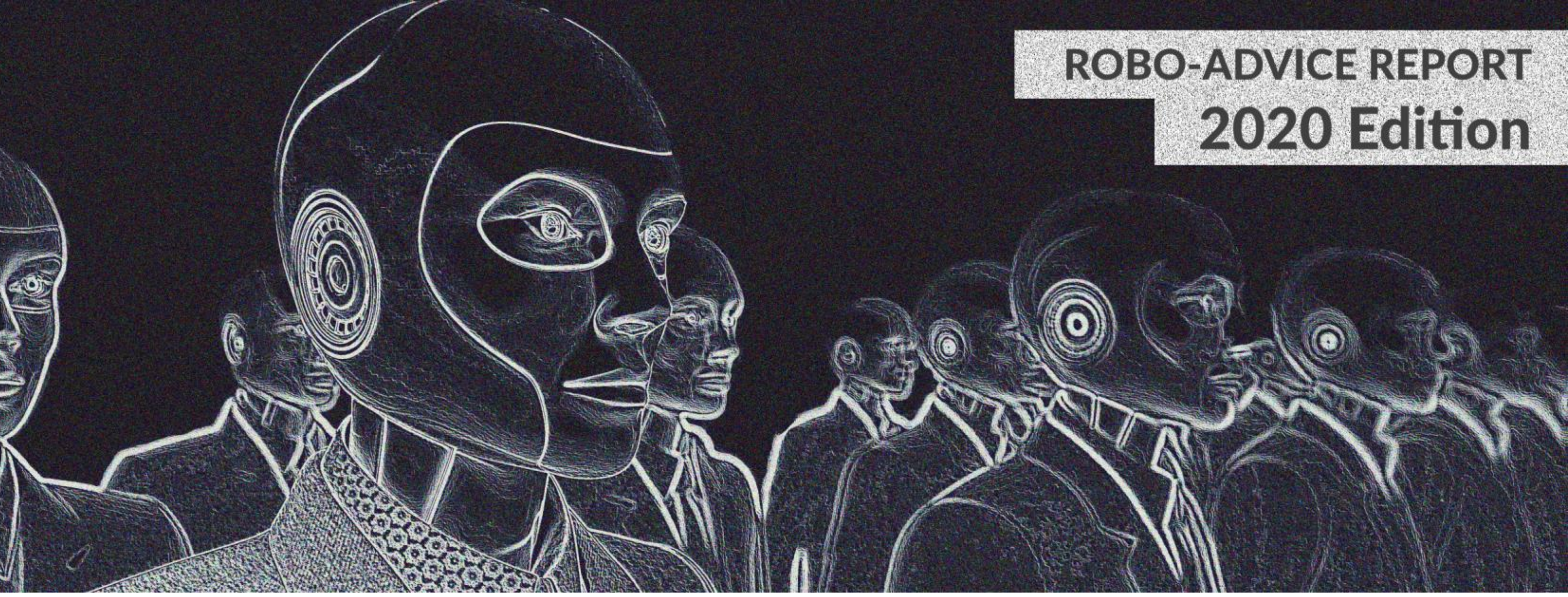
The researchers from the OE found that questions dependent on previous answers can generate biased answers and incorrect statements because the client is kept directed by previous answers and not necessary in an objective way. A solution lies in the combination of subjective (behavioural) and objective questions, which cross-check the client in a way adjusts to "*What I think and feel should fit to what I know and have*". The questionnaire uses cross-examination questions where "feelings" are adjusted by the "reality".[77] In terms of structure, the questionnaire comprises 10 questions (5 behavioural, "emotions" focused, and 5 objectives, examining the reality of the financial situation, knowledge and experience of a client).

The investment questionnaire evaluates the risk-profile and financial knowledge of a client using 8 conditions to confirm the alignment between the subjective opinion and objective reality (cross-checking). The OE researchers determined, on the basis of this questionnaire, five investor profiles by risk-return class, described in the table below.

Table 7. Risk-return class and equity shares by investor profile

Investment Profile	Risk-Return Class - lower interval	Risk-Return Class - upper interval	Minimum equity share	Maximum equity share
Conservative	1	3	0%	20%
Balanced	2	4	10%	45%

[77] This means that there are sequences of objective and subjective questions where the misalignment in the answers given by the respondent are reflected in the overall score, and risk profile, as "conditional" assessment; to give an example, if (a) the answer to the question "*What types of investments have you already owned?*" (objective question) is less than "funds", (b) the answer to the question "*How long will your intended investment take to reach investment goal?*" (subjective question) is less than 1 year and (c) the answer to the question "*What risk-return profile (class) on the scale 1 to 7 would You assign to the investment below?*" (objective question) is less than "SRRI 4", the profile should not be higher than "balanced" regardless of the scores given to the answers to other questions.



Dynamic	*3*	*5*	*35%*	*75%*
Aggressive	*4*	*6*	*60%*	*100%*
Speculative	*5*	*7*	*85%*	*100%*

Source: OE composition, 2019

As such, the two investor profiles have received the following risk-return class and portfolio composition:

Table 8. Investor profiles according to the Model Questionnaire

	Profile	Risk-return class	Min-max equity shares
Millennial	Aggressive	4-6	60% - 100%
Baby boomer	Dynamic	3-5	35% - 75%

Source: BETTER FINANCE based on OE data

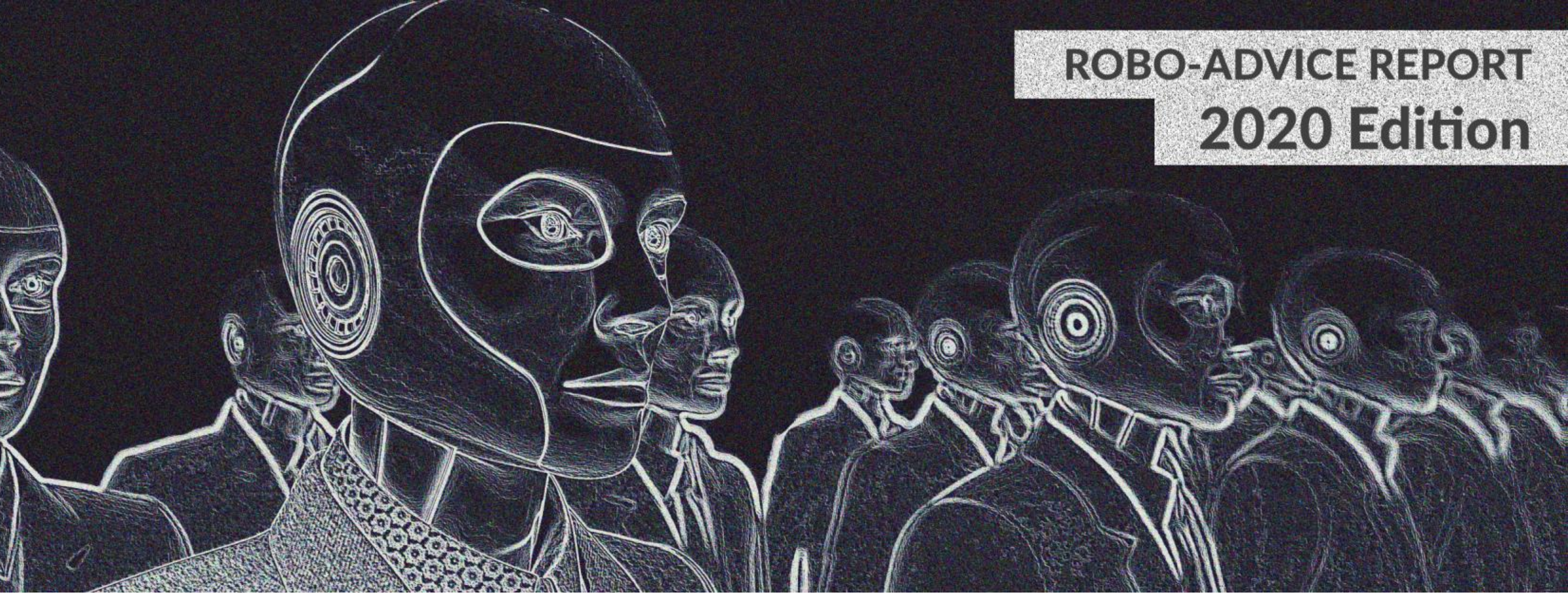
The two client profiles prepared by the research team were assigned a *Dynamic* (baby boomer, 3/5) and *aggressive* (millennial,4/6) investor profiles:

- the portfolio composition for the millennial should contain at least 60% equity exposure (direct or indirect, through funds); in terms of products, the summary risk-return profile (SRRI) should be between 4 and 6 (on a scale from 1 to 7);
- the portfolio composition for the baby boomer should comprise between 35% and 75% equities (direct or indirect) and the product's risk-reward profile should be between 3-5 (on a scale from 1 to 7).

SELECTION OF ROBO-ADVISORS

As highlighted in other reports, "*A detailed analysis of independent robo-advisors, i.e. startups, in Europe is difficult as hardly any firm publishes data on AuM*".[78] Therefore, this year the report does not take into consideration an AUM (asset under management) value of at least 30 Million euros as selection criteria of the new platform. The platforms that have been retained from previous year report are **Easyfolio, Easyvest, Growney, Indexa Capital, Investify, Quirion, Sigfig, White box and Yomoni.** However, this year it wasn't possible to perform the algorithm testing of the following platforms analysed in our previous research: **Wealth simple, Feelcapital, Scalabel Capital, Ellevest, Wealthfront, Betterment and Nutmeg,** due to strict requirements of the platforms to create an account with personal and sensitive information (ID cards, social security numbers, bank account).

[78] Kaya, 'Robo-advice – A True Innovation in Asset Management' (n 7), p. 8.



During the research and work leading up to the 2020 Research Report, the BETTER FINANCE team noted that an increasing number of Robo-advice platforms are now requiring more details from potential investors than in previous years. This leads to potential investors having to give away sensitive personal data such as social security number, copy of ID card, phone number and bank account, just to do a test-run of the platform.

In order to select new platforms for this year report, BETTER FINANCE team has researched Robo-advisors in Europe, North America, Asia and Oceania. Of this first search, only platforms that comply with the following criteria have been selected:

- The Robo-Advice is **independent** from financial industries.
- The platform does not require to create an **account** with personal and sensitive data as (ID cards, social security number, bank account) in order to receive the investment advice.
- **Minimum investment**, lower or equal to 10.000 euros

As in any market with potential, start-ups eventually end up acquired by established players. For example, in 2019 **Goldman Sach**s took a stake in Robo-adviser **Nutmeg** as part of a funding round,[79] and **BlackRock** bought a minority equity stake of **Scalable Capital**.[80] Earlier in 2016, the private bank **Hauck & Aufhauser** acquired a stake in **Easyfolio**,[81] and **Allianz** bought a stake in **Moneyfarm**.[82] Moneyfarm, now a pan-European Robo-advisor already active in the UK and Italy, acquired the German platform Vaamo, covered in the 2018 BETTER FINANCE Robo-advice report.

The final list of platforms tested in this "mystery shopping" research comprises*: Easyvest (BE), Easyfolio (DE), Growney (DE), Quirion (DE), White box (DE), Indexa Capital (ES), Yomoni (FR), Investify (LU), Sigfig (US), Sixpark (AUS), Finanbest (ES), Nalo (FR), Finax (SK)*[83]*, StashAway (SG), Endowus (SG), TrueWealth (CH), Euclidea (IT).*

The selected platforms are supervised by national authorities in 11 countries of which 14 in Europe, 1 in Australia, 2 in Singapore and 1 in US.

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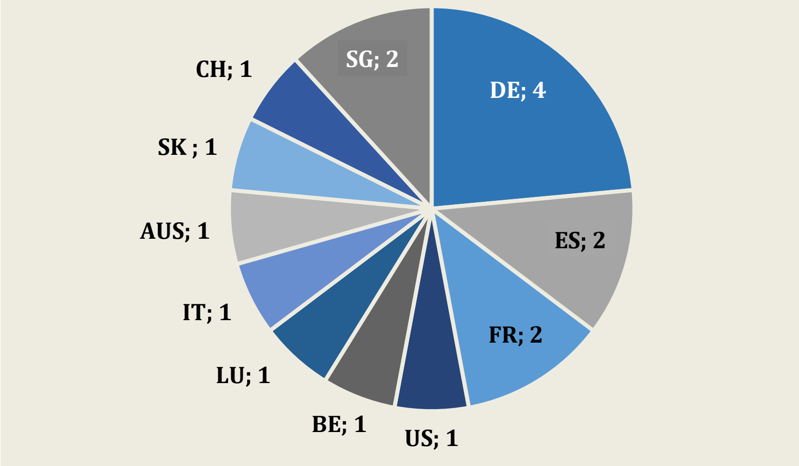
[79] Elliot Smith, 'Glodman Sachs Takes Stake in Nutmeg' (Citiwire.co.uk, 22/01/2019) available at: https://citywire.co.uk/new-model-adviser/news/goldman-sachs-takes-stake-in-nutmeg/a1193965

[80] David Ricketts, 'BlackRock Acquires Stake in Robo-advisor' (FN London, 20/06/2020), available at: https://www.fnlondon.com/articles/blackrock-acquires-stake-in-robo-adviser-20170620

[81] Hauck & Aufhäuser, 'Future Market Robo-Advisory' (accessed 10/12/2020), available at: https://www.hauck-aufhaeuser.com/en/about-us/easyfolio-and-hauck-aufhaeuser

[82] Attracta Mooney, Hugo Greenhalgh, 'Allianz Buys Stake in Robo-Adviser MoneyFarm' (FT.com, 6/09/2016) available at: https://www.ft.com/content/f140a26c-8182-11e6-8e50-8ec15fb462f4.

[83] Available also in Croatia, Czechia (Czech Republic), Hungary, Poland, Slovakia.



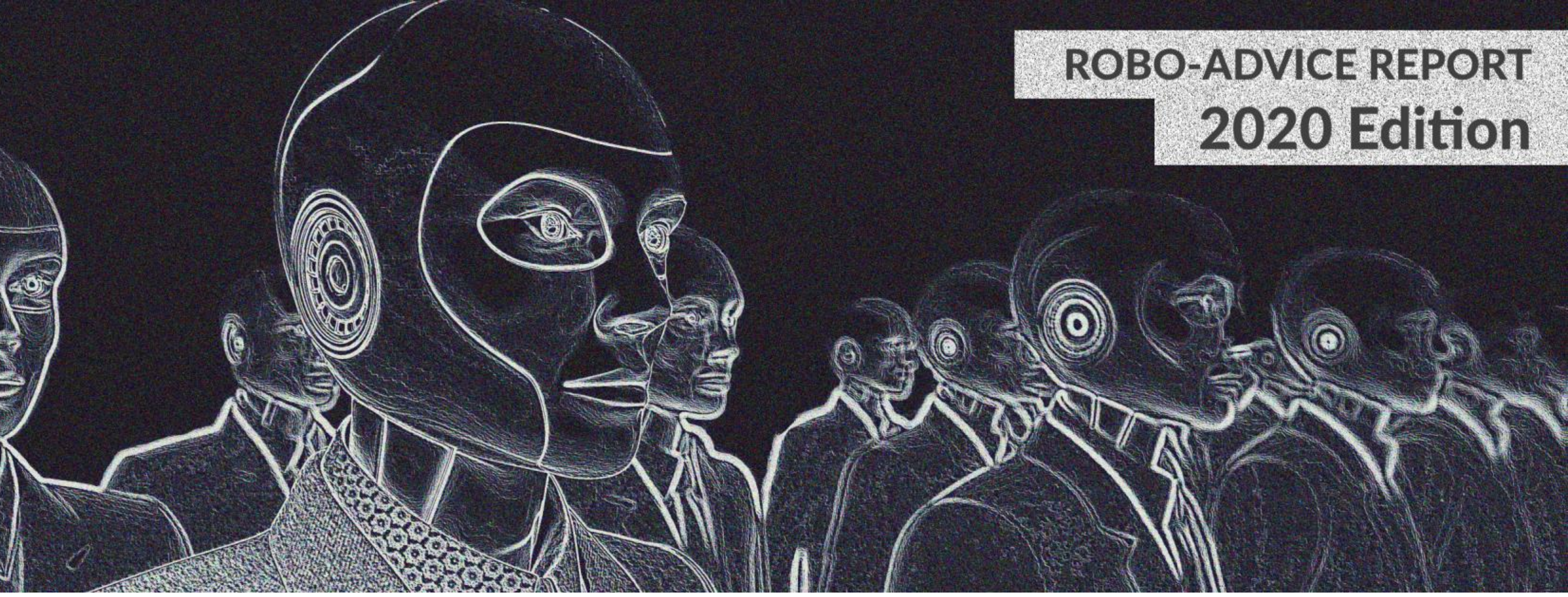
Graph 9. Geographical distribution

Source: BETTER FINCE own research and composition

ALGORITHM TESTING AND EVALUATION CRITERIA

Mystery shopping

The research team accessed the Robo-advisors' platforms and went through the questionnaire process to generate an investment recommendation twice: once for the "millennial" profile and once with the "baby boomer" profile. Through this process, the research team analysed and aggregated data on several elements and reported them under the "*What we found*" section. **This report does not aim to single out the best Robo-advice platforms, but to establish whether Robo-advice lives up to its promises to individual investors and delivers suitable recommendations**. The factors scrutinised while testing the robo-advisors are designed to determine to which extent the Robo-advisors satisfy 4 important elements for the individual investors: **accessibility** (minimum investment), **user-friendly interface**, **transparency**, **fees and advice suitability**. Even if the central approach is to carry out the observation from the perspective of the layman investor, this type of research activity is necessarily subjective.



Results

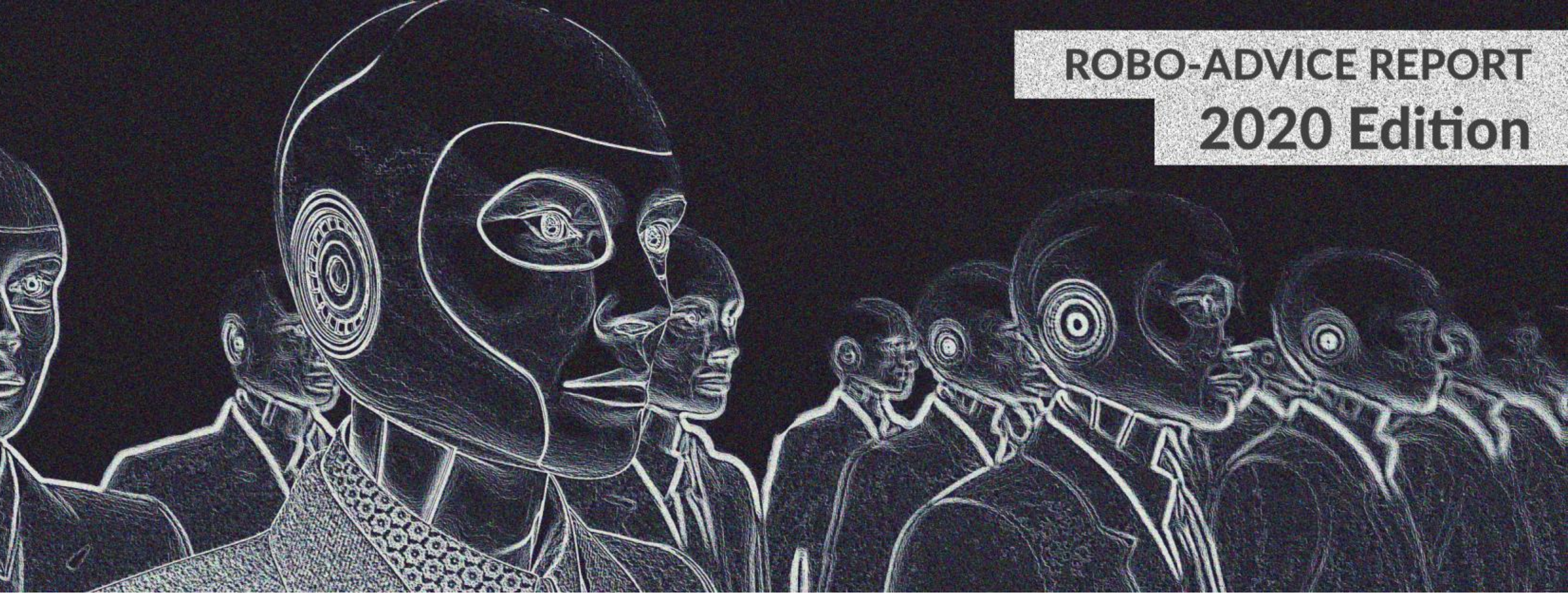
Note: For transparency purposes, BETTER FINANCE disclosed in the section above (see ***Selection of Robo-advisors****) the names of the European and non-European platforms subject to mystery shopping in this report. However, in order not to disadvantage robo-advice platforms, this section censors the names of the Robo-advisors and focuses on the* ***actual results*** *of our mystery shopping exercise.*

Fees

Notwithstanding all the different pros and cons of Robo-advice, the success of the concept hinges also on the capacity to keep costs low. And in this respect Robo-advisors do not disappoint! Whichever way you look at it, Robo-advisors are far cheaper than equivalent services provided by banks or traditional financial advisors.

Table 10. Robo-advisors' fees

Platforms	Source	Annual asset-based management fees		Annual Underlying ETF fees		Custodian, depositary, or other fees		Total annual fees	
		M	BB	M	BB	M	BB	M	BB
Europe									
Easyvest	Results	1.00%	0.60%	0.30%	0.30%	N/A	N/A	1.30%	0.90%
	Website	1.00%	0.60%	0.30%	0.30%	N/A	N/A	1.30%	0.90%
Easyfolio	Results	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Website	0.59%	0.59	0.23%	0.23%	N/A	N/A	0.97%[c]	0.99%[c]
Growney	Results	0.53%	0.23%	0.20%	0.21%	0.15%	0.15%	0.88%	0.59%
	Website	N/A	N/A	0.19%	0.19%	N/A	N/A	0.87%[b]	0.57%[b]
Quirion	Results[d]	0.48%	0.68%	N/A	N/A	N/A	N/A	N/A	N/A
	Website[d]	0.48%	0.68%	0.17%	0.17%	N/A	N/A	0.65%	0.85%
Whitebox	Results	0.97%	0.62%	0.22%	0.21%	N/A	N/A	1.19%	0.83%
	Website	0.95%	0.75%	0.20%	0.20%	N/A	N/A	1.15%[b]	0.95%[b]
Indexa Capital	Results	0.43%	0.40%	0.13%	0.13%	0.24%*	0.24%*	0.80%	0.77%
	Website	0.44%[a]	0.39%[a]	0.13%	0.13%	0.24%*	0.24%*	0.81%	0.76%
Yomoni	Results	N/A	N/A	N/A	N/A	N/A	N/A	Total 1%	Total 1%
	Website	0.70%	0.70%	0.30%	0.30%	0.6%[e]	0.6%[e]	1.60%	1.60%
Investify	Results	0.60%	0.43%	0.16%	0.16%	0.40%	0.37%	1.16%	0.96%

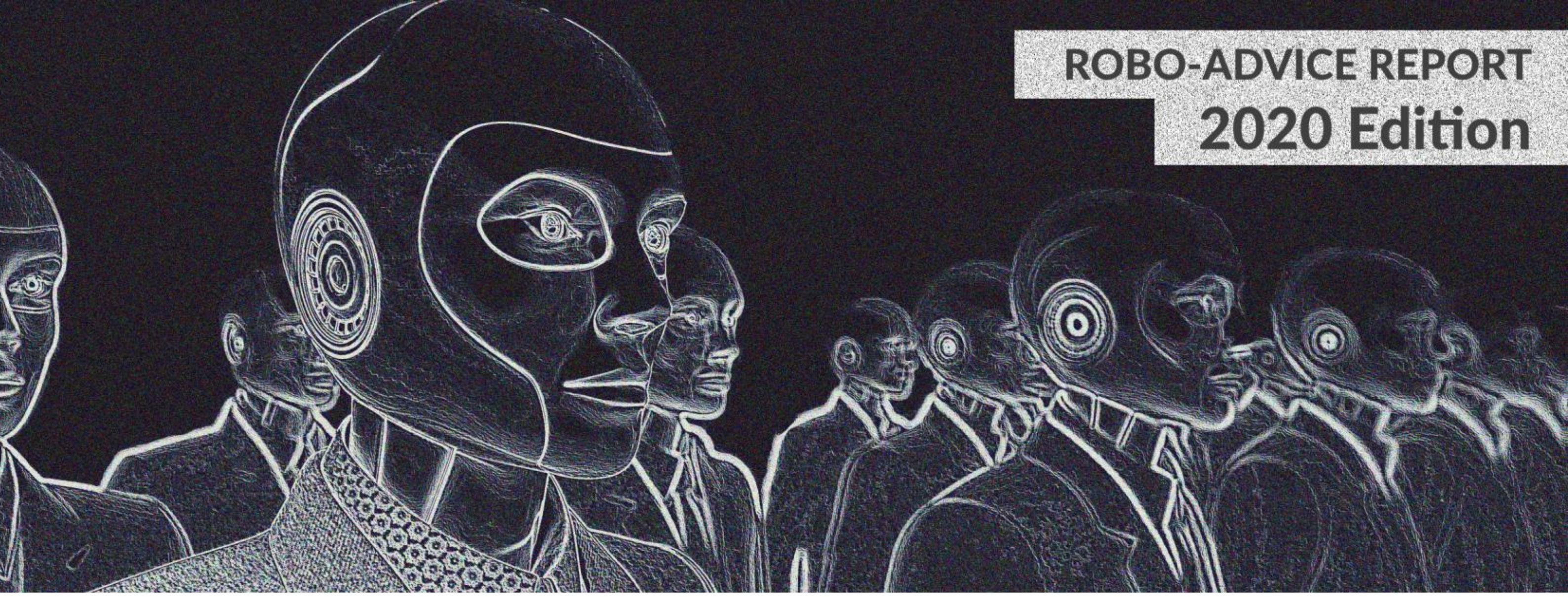


	Website	1%[f]	1%[f]	0.16%	0.16%	N/A	N/A	1.16%[b]	1.16%[b]
Finanbest	Results[g]	0.39%	0.39%	0.30%	0.30%	0.13%	0.13%	0.82%	0.82%
	Website[g]	0.39%	0.39%	0.28%	0.28%	0.13%	0.13%	0.80%	0.80%
Nalo	Results	0.55%	0.55%	0.25%	0.25%	0.85%[e]	0.85%[e]	1.65%[!]	1.65%
	Website[h]	0.55%	0.55%	0.25%	0.25%	0.85%[e]	0.85%[e]	1.65%	1.65%
Finax	Results	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Website	1.2%[i]	1.2%[i]	0.20%	0.20%	N/A	N/A	1.40%	1.40%
Euclidea	Results	N/A	N/A	0.35%	0.31%	N/A	N/A	N/A	N/A
	Website	0.6%[j]	0.6%[j]	N/A	N/A	N/A	N/A	N/A	N/A
TrueWealth	Results	0.51%	0.50%	0.20%	0.19%	-[k]	-[k]	0.71%	0.69%
	Website[l]	0.50%	0.50%	0.20%	0.19%	-[k]	-[k]	0.71%	0.69%
USA/AUS/SG									
SigFig	Results	0.00%	0.25%	N/A	N/A	N/A	N/A	N/A	N/A
	Website	0.00%	0.25%	0.11%	0.11%	N/A	N/A	0.11%	0.36%
Sixpark	Results	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Website	Fixed	0.50%	0.25%	0.25%	N/A	N/A	N/A	0.75%
StashAway	Results	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Website	0.80%	0.50%	0.20%	0.20%	N/A	N/A	1.00%	0.70%
Endowus	Results	0.60%	0.60%	0.40%	0.50%	N/A	N/A	1.00%	1.10%
	Website	1.00%	1.00%	0.55%	0.55%	N/A	N/A	1.55%	1.55%

Source: BETTER FINANCE own composition; [a] The annual management fees vary depending on the investment sum - the figure displayed corresponds to the "mystery shopper" profile; see provider website for details; [b] Sum of all available fees on the website, according to the "mystery shopper" profiles; [c] The researchers found a difference between the total ongoing charges figure presented on the website for the product and its KIID; [d] The first year is free of charges (management fees); [e] Wrapper fees (charged by the insurer or account holder); [f] All-in service cost (incl. custody fees); [g] Two types of fee models applied: one based on a performance fee and one "flat fee"; the research team reports the flat fee figures; [!] The researchers found two different total fee figures in the simulation; [h] Disclosed for a portfolio allocation of 50% capital guaranteed funds and 50% ETFs (unit-linked); [i] Includes costs of portfolio management and administration (administration fee and custody of financial instruments; [j] The advisor offers to service offers, the research team chose the cheaper one; the fees are net of VAT; [k] Custody fees and other charges included in the management fee; [l] Annual management fee ranges between 0.25% and 0.5% *Depositary and custody fees differ depending on the jurisdiction; the fees displayed are for Belgium;

Generally, most Robo-advisors covered in the research provide to potential clients a simplified and easy-to-understand fee structure, generally consisting of a combination of an "all-in-one" management fee and an average of the underlying fund fees. Robo-advisors typically adopt a simple fee structure that translates into lower fees than those charged by "human" financial advisors or private bankers.

However, the Robo advice fees are still almost all based on the amount of money managed ("assets under management"), which is an incentive to get new inflows, but less to achieve performance. Also for what it concerns the platforms that are independent from financial institutions, the alignment of



interests with clients is better (lack of conflicts of interests allows for the selection of low fee investment options such as index ETFs) but not complete".

Bar a couple of exceptions, Robo-advisors typically do not charge other fees such as entry fees, custody fees, transaction fees, performance fees, wrapper fees, etc. which are often to be found in standard "human" financial advice and private banking services. Generally, Robo-advisors are considered to be fees-only instead of fee-based. They difference resides in the fact the "automated advisor" is compensated only by the fees charged to clients and not also by additional commissions gained by selling a specific product (which characterize a fee-based or commission-based advice)[84]. Although, several Robo-advisors distinguish themselves from "traditional advisor"[85,86] for being fees-only, as they do not receive commissions, it is difficult to check concretely whether the platform is receiving commissions or not.

The automation of the advice process allows to have lower fixed costs, thus generating a competitive pricing. But the real trick in keeping costs low, lies in the fact that most platforms use low-cost exchange-traded index funds (ETFs). Because ETFs are publicly traded financial instruments that replicate the evolution of a stock market index in real time, their fees are minimal.

With overall fees (management fee + average underlying fund) between 0.55% and 1.65% in Europe and between 0.11% - 1.55% in US, Australia and Singapore, Robo-advisors compare very favourably with traditional players who typically charge fees far above 1%. **A downward trend over time in overall fees charged by Robo-advisors can also be observed, especially in Europe where the lower-end fees went down (Table 11).**

Table 11. Fee variation (2019 – 2020)		Overall fee change (Service + ETF) M	BB
Robo 1	Results	N/A	N/A
	Website	0.00%	0.00%
Robo 2	Results	N/A	N/A
	Website	N/A	N/A
Robo 3	Results	0.01%	0.01%
	Website	-0.07%	-0.07%
Robo 4	Results	N/A	N/A
	Website	0.44%	0.23%

[84] Barclay Palmer, 'Fee-Based vs Commission-Based: What's the Difference?" (Investopedia.com, 06/09/2020) available at: https://www.investopedia.com/articles/basics/04/022704.asp
[85] See https://smartasset.com/.
[86] Kevin Voigt, 'Fee-Only Financial Planner vs. Fee-Based: What's the Difference?' (Nerdwallet.com, 30/10/2020), available at: https://www.nerdwallet.com/blog/investing/fee-only-fee-based-financial-planner-difference/.

Robo 5	Results	0.05%	0.05%
	Website	-0.02%	-0.02%
Robo 6	Results	-0.02%	0.00%
	Website	-0.27%	-0.22%
Robo 7	Results	-0.40%	-0.60%
	Website	0.00%	0.00%
Robo 8	Results	-0.02%	-0.03%
	Website	N/A	N/A
Robo 15	Results	N/A	N/A
	Website	0.00%	0.00%

Source: BETTER FINANCE own composition

6 out of 9 total assessable platforms have decreased their costs compared to 2019. Also, 3 Robo-advisors have not changed their fees since last year. The decreased level of fees varies from 0.02% to 0.60% which show the capacity of automated advisors to provide a service that is much more competitive compared to the traditional "human" advisors.

Our findings once again illustrate that these automated financial advice services are on average less expensive than their traditional counterparts and can offer individual investors better value for money. In large part thanks to these low fees, BETTER FINANCE believes that Robo Advice can play a crucial role in attracting retail investors back into equity markets.

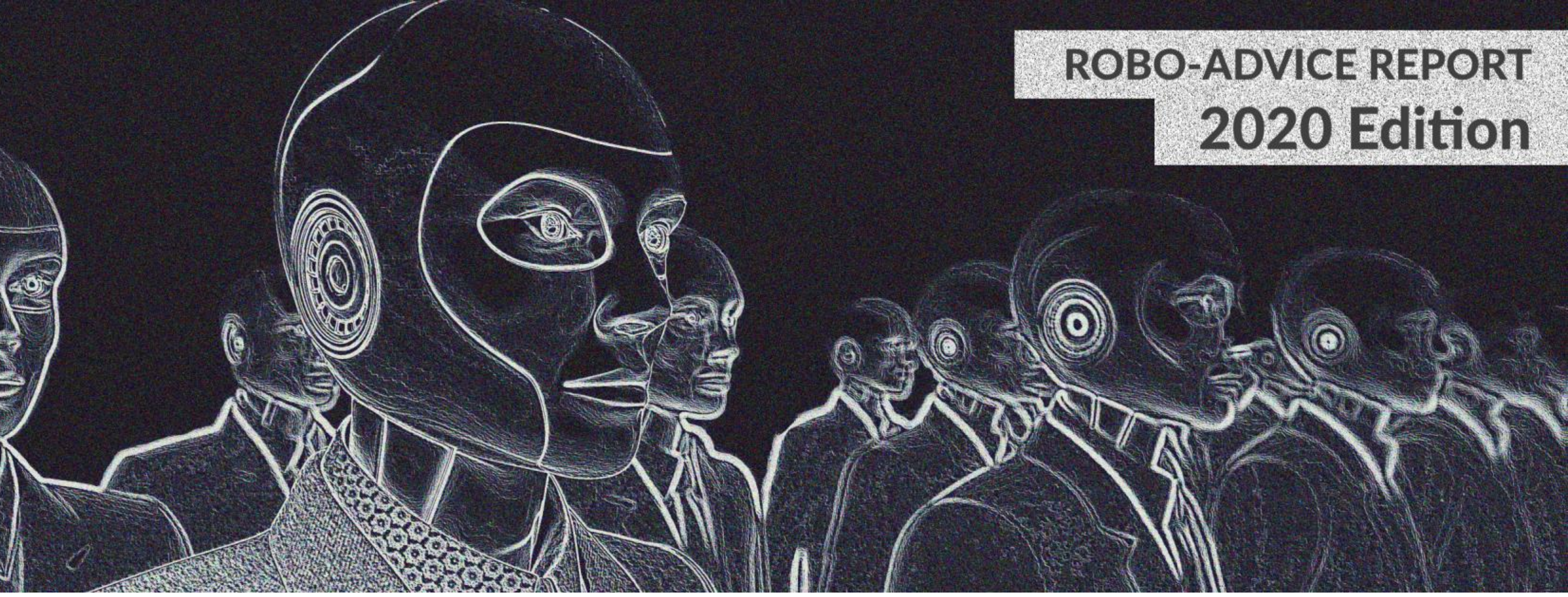
Fee Differences between Robo Advisors

When looking at fees, BETTER FINANCE only considered the fees disclosed by the Robo-advisor together with the proposed investment advice as well as the more generic fee information provided on the website. No other source of information was considered for the purpose of this section.

It is important to point out that some of the platforms only provided more generic fee information on their websites and failed to include the breakdown of fees in the results of the proposed investment advice. For other platforms the fee information provided with the results differed somewhat from the generic advice from the website. For the sake of this report, BETTER FINANCE prioritised the more adapted fee information given with the results over that of the website. When no information was provided with the results, the generic fee information was used instead.

To collect all relevant fee information, we:

- looked for the total ongoing charges (i.e. the total amount of fees deducted by the Robo-advisor on an annual basis) in the resulting investment advice proposal from the questionnaire for both investor profiles;
- looked for the average underlying fund fees in the resulting investment advice;



- looked for the total ongoing charges (generic or other) on the Robo-advisor website;
- looked for the average underlying fund fees and/or underlying wrapper fees on the website;
- looked for a breakdown of fees, to ensure all fees (management fees, ETF or underlying funds' fees, custodian fees, etc.) are taken into account;
- added up all relevant fee information (total Robo-advisor' own ongoing charges + average underlying fund and/or underlying wrapper fees) to provide an overview of the costs of Robo-advice for each platform.

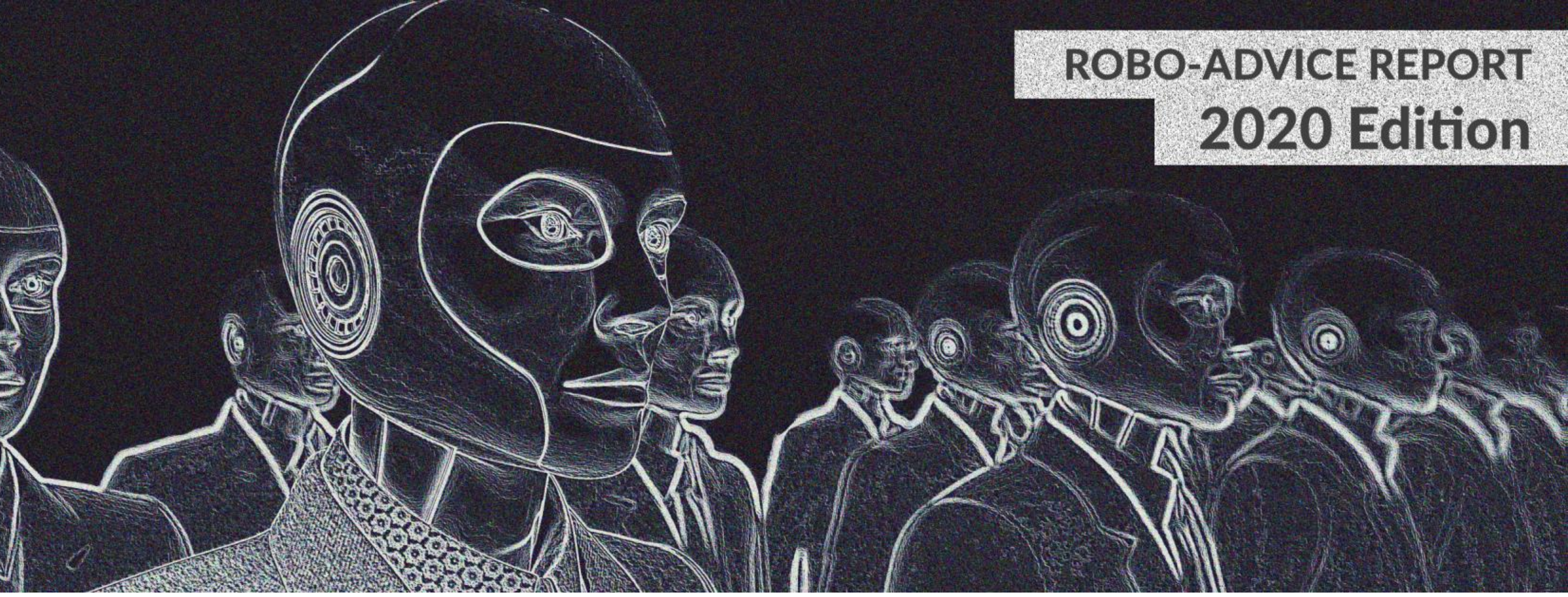
A closer look at the fees allowed this study to identify the players with the most competitive fee structure. Since future returns on investment are unknown and not predictable, it is important to look at fees, since they are a key factor influencing the performance of retail investment products.[87]

Whereas we already covered transparency of the different costs and fees on each platform in the section on transparency, it is worth mentioning that investors would have a better overview of fees and their effect on performance if the platforms disclosed their fees together with the results and investment advice, instead of merely providing generic information on their webpages. It is quite **disappointing to notice that 8 platforms do not disclose fees with the results of the investment advice, especially in the US, Singapore and Australia** where platforms limit themselves to simply mentioning non-customized fees on their websites.

Table 12. Fee disclosure

	Overall Fee provided with Investment Advice (results)		Overall Generic Fee Information provided on Website	
	Millennial	Baby Boomer	Millennial	Baby Boomer
Europe				
Easyvest	1.30%	0.90%	1.30%	0.90%
Easyfolio	N/A	N/A	0.94%	N/A
Growney	0.88%	0.58%	0.89%	0.59%
Quirion	N/A	N/A	0.65%	0.87%
Whitebox	1.24%	0.88%	1.13%	0.78%
Indexa Capital	0.80%	0.77%	0.55%	0.55%
Yomoni	N/A	N/A	1.60%	1.60%
Investify	1.16%	0.96%	1.16%	0.96%
Finanbest	0.82%	0.82%	0.80%	0.80%
Nalo	1.40%	1.65%	1.65%	1.65%

[87] Please see BETTER FINANCE Report on the Real Returns of Long-Term and Pension Savings, 2020 edition: https://betterfinance.eu/wp-content/uploads/The-Real-Return-Long-Term-Pension-Savings-Report-2020-Edition.pdf.



Finax	N/A	N/A	1.40%	1.40%
Euclidea	N/A	N/A	N/A	N/A
TrueWealth	0.68%	0.66%	0.68%	0.68%
USA/AUS/SG				
SigFig	N/A	N/A	0.11%	0.36%
Sixpark	N/A	N/A	N/A	N/A
Stashaway	N/A	N/A	1.00%	0.70%
Endowus	1.00%	1.10%	1.55%	1.55%

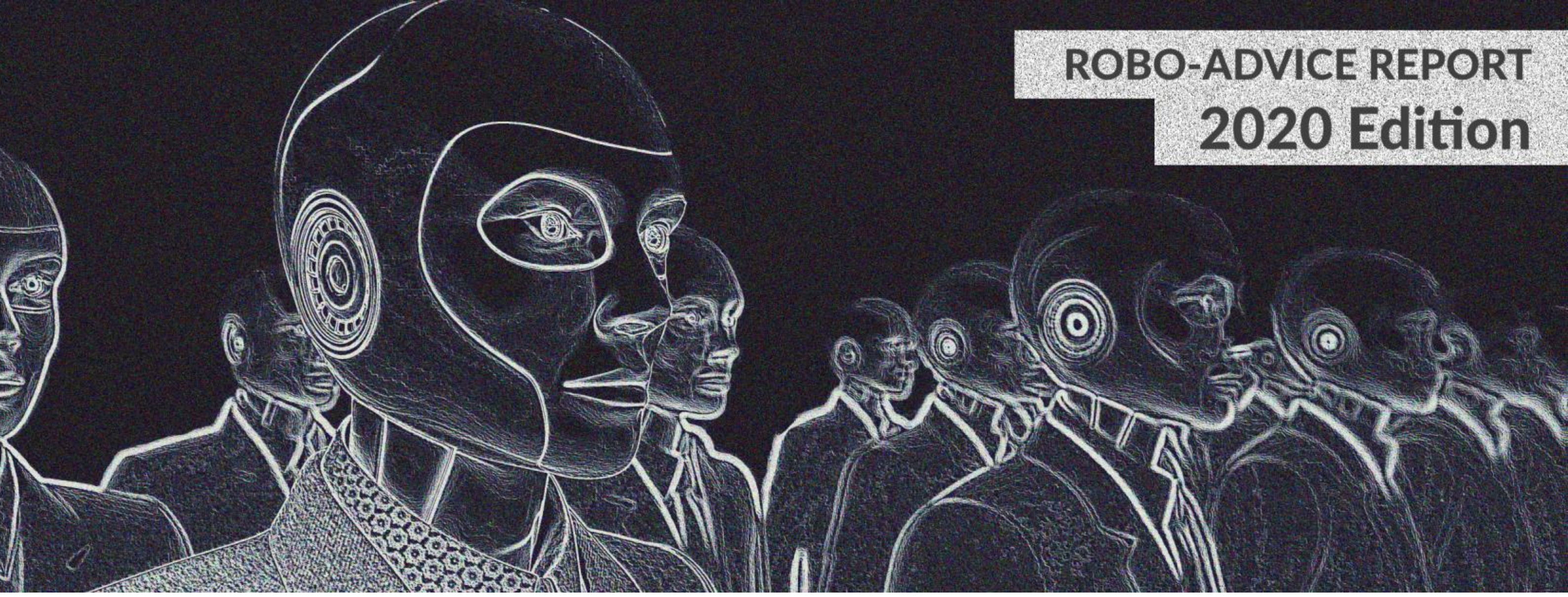
Source: BETTER FINANCE own research based on data from the Robo-advisors

We have noticed that there are some divergences between the overall fee disclosure on the website and the questionnaire results. In the United States, Australia and Singapore it is more complicated to observe the composition of fees as the platforms seems to be less transparent than their European competitors.

As also observed in the previous year's report, **Robo-advice fees remain slightly higher in Europe than for their foreign competitors (US/ Australia and Singapore)** indicating that investment–related fees are overall much higher in Europe. This can be attributed to the fragmentation of the European capital markets and to a lack of product standardisation as well as insufficient competition. In addition, in some countries, the use of an additional wrapper around the selected funds for tax optimisation purposes (e.g., Yomoni) contributes significantly towards higher fees.

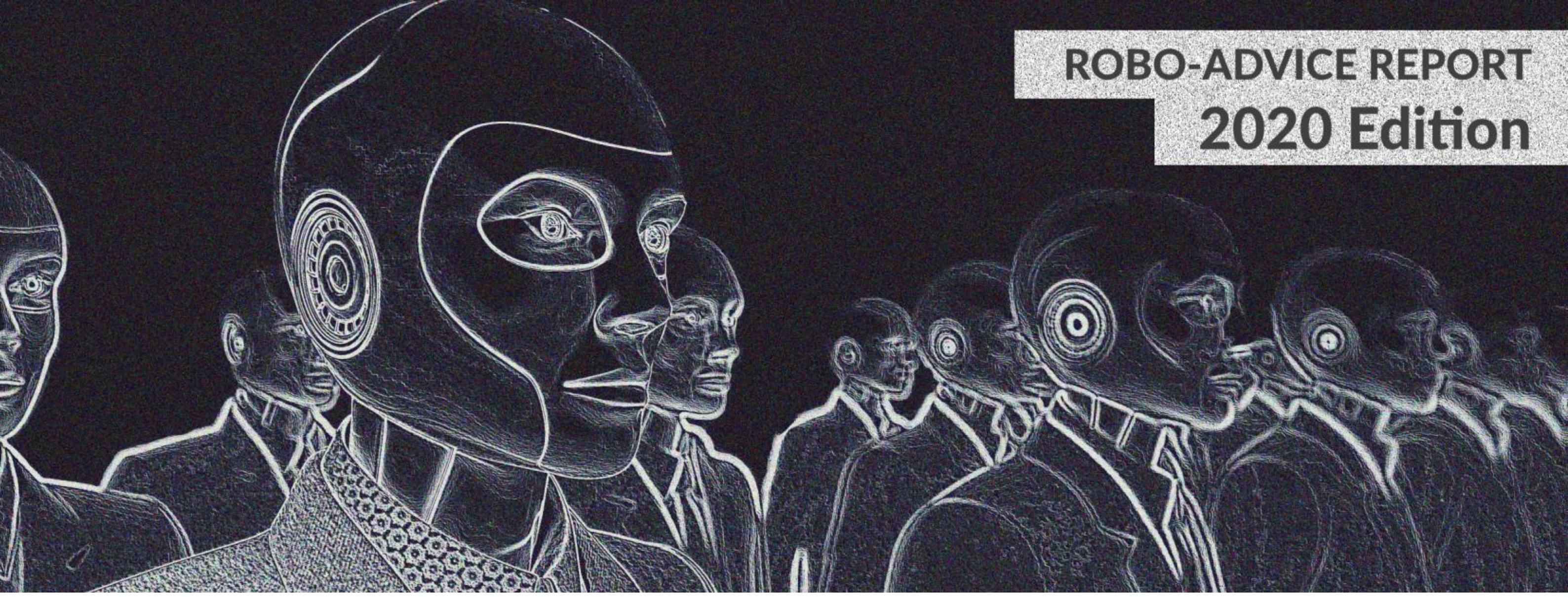
Fee Differences between Investor Profiles

Differences in fees between the different investor profiles on the same Robo-advice platform can most of the time be explained by the business model that reduces the management fee proportionally to the amount of invested capital. Most platforms reduce the management fee significantly as the amount invested goes up, although some exceptions, such as **Robo 4** and **Robo 15** take the opposite approach and allow for individual investors with less disposable capital to access their services for a reduced fee.



MAP OF THE 13 ROBO ADVICE PLATFORMS FEATURING IN THE 2020 BETTER FINANCE REPORT, INCLUDING OVERALL FEES BY INVESTOR PROFILE

Source: BETTER FINANCE own composition



User-friendliness

In this section we want to take a deeper look at the extent to which the 18 Robo-advice platforms are user-friendly and can be easily understood by an average individual investor. We analysed the degree of engagement with the investors combined with information provided by the platform in terms of financial literacy. The platform should provide clear and non-misleading information to help the users through the questionnaire process. **The main challenge for the Robo-advice platforms is to reach a balance between having enough questions to establish the most customised investment advice possible with the need to keep the questionnaire short and simple**. Whereas online client engagement is relatively easy and less time consuming than face-to-face interviews, online clients might easily lose interest in a long online questionnaire and lose focus on some questions.[88]

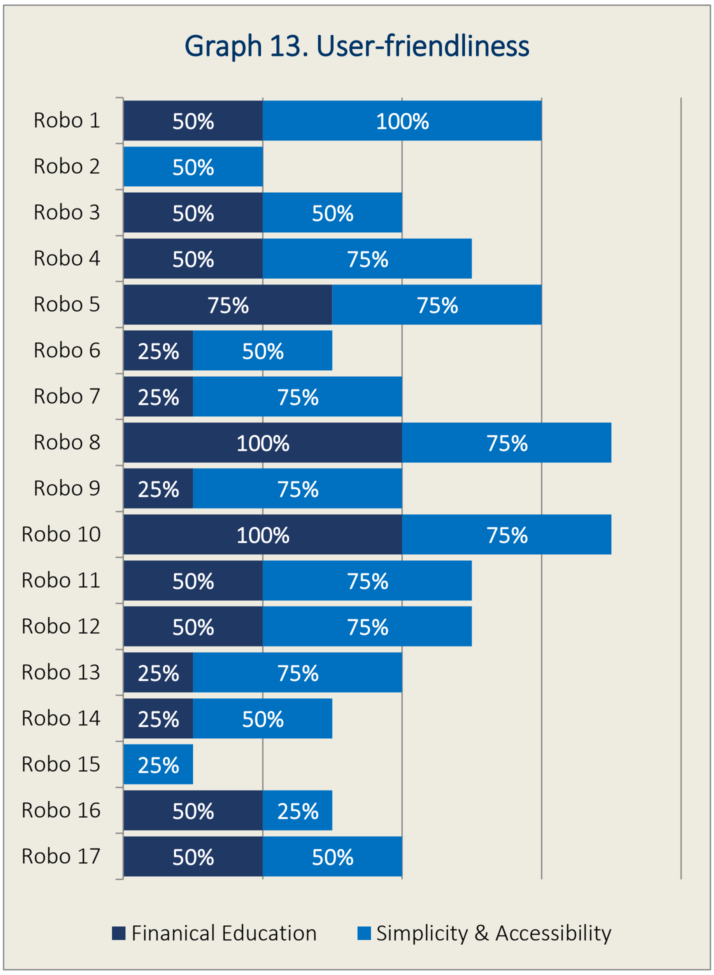
In addition, considering the differences in terms of financial knowledge among individual investors the Robo-advisor should provide definitions of financial concepts which can be easily understood by a layman investor. Financial literacy can be an important tool if integrated in Robo advice platforms, fostering financial inclusion of households and help less financially literate households to invest in the capital market. However, it is important to note that being investor is not a full a time job and explanations of financial matters and concepts need to be simple and easily understandable.

The simplicity and accessibility of the platform	Financial education
• Is the process self-explanatory? • Is the questionnaire easy to use? • Is the website multilingual? • Does the platform provide tutorials on how to use it? • Do users need to register?	• Is there easily accessible information on terms and explanations for the layman investor? • Are definitions and clarifications provided during the questionnaire? • Does the platform include webinars or videos? • Is there a human advisor available for help and questions?

Looking at the platforms analysed this year (graph 13) we can acknowledge that only 2 platforms reached the highest score (Robo 8 and 10) in terms of simplicity, accessibility, and financial education. One platform (robo16) received the lowest score reaching only 25% for simplicity and accessibility.

In general, only 2 platforms provide videos and webinars on financial education material and financial explanations. In addition, some platforms also provide blogs and various articles with the intent of

[88] See Kaya, 'Robo-Advice: A True Innovation in Asset Management' (n 7).



Source: BETTER FINANCE own composition

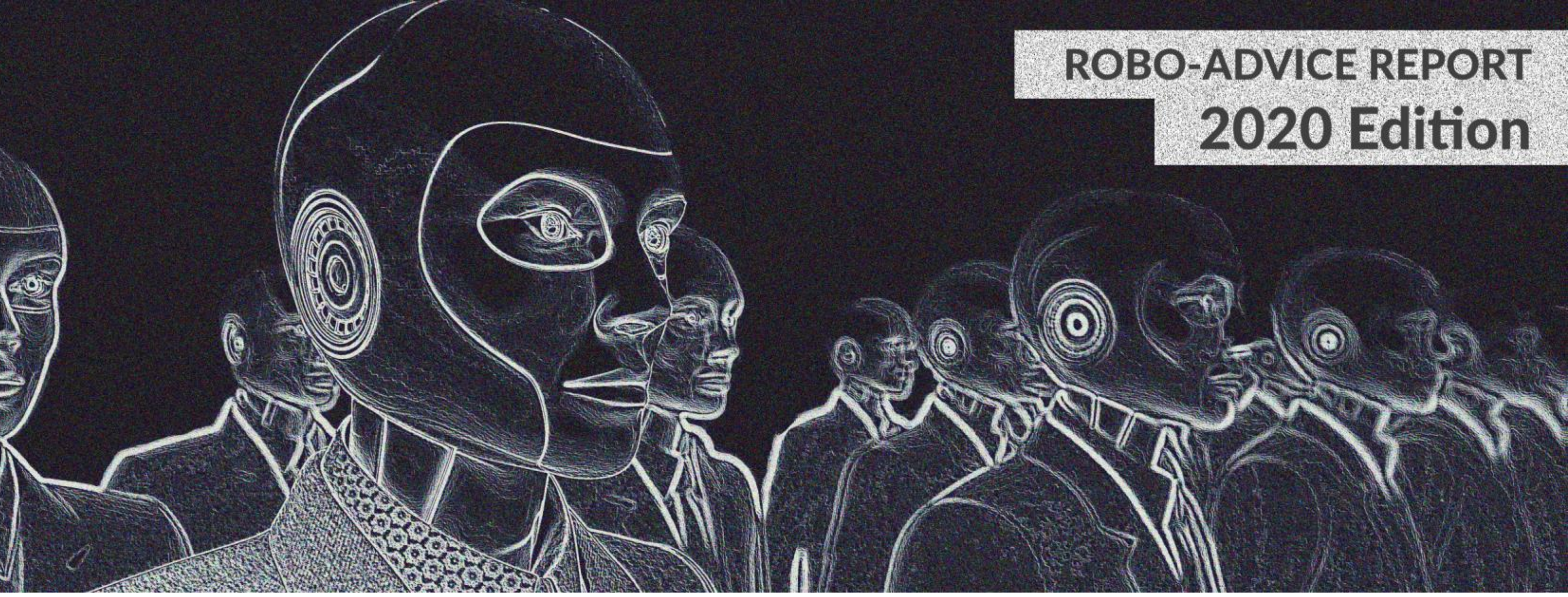
informing investors of the recent evolutions of the financial market. Another interesting feature that has been gradually integrated in Robo-advisor platforms is the possibility for the investor to contact a human advisor. Looking at the platforms under scope, 11 over 17 platforms give the possibility to the investor to contact a human advisor.

Looking at the simplicity of the service, 11 out of 17 platforms provide tutorials or guidelines on how to use the platform.

Another important consideration is the accessibility for the investor to receive an investment advice before having to register or creating an account. As previously mentioned, the research team has not analysed platforms that require the creation of an account that demands sensible and private information (such as bank account, social security number, phone number) in order to receive an investment advice.

However, 5 platforms out of 17 require registering (name, email and password) in order to receive the investment advice.

The registration might seem a less relevant indicator compared to the others, nevertheless we consider that one of the positive features of the services offered by Robo-advisors is the possibility to obtain investment advice and other important information (disclosure of fees, portfolio characteristics and etc.) before having to commit to sing-up to any sort of contract. This enhances transparency and the possibility for the investor to better choose among different automated advice services.



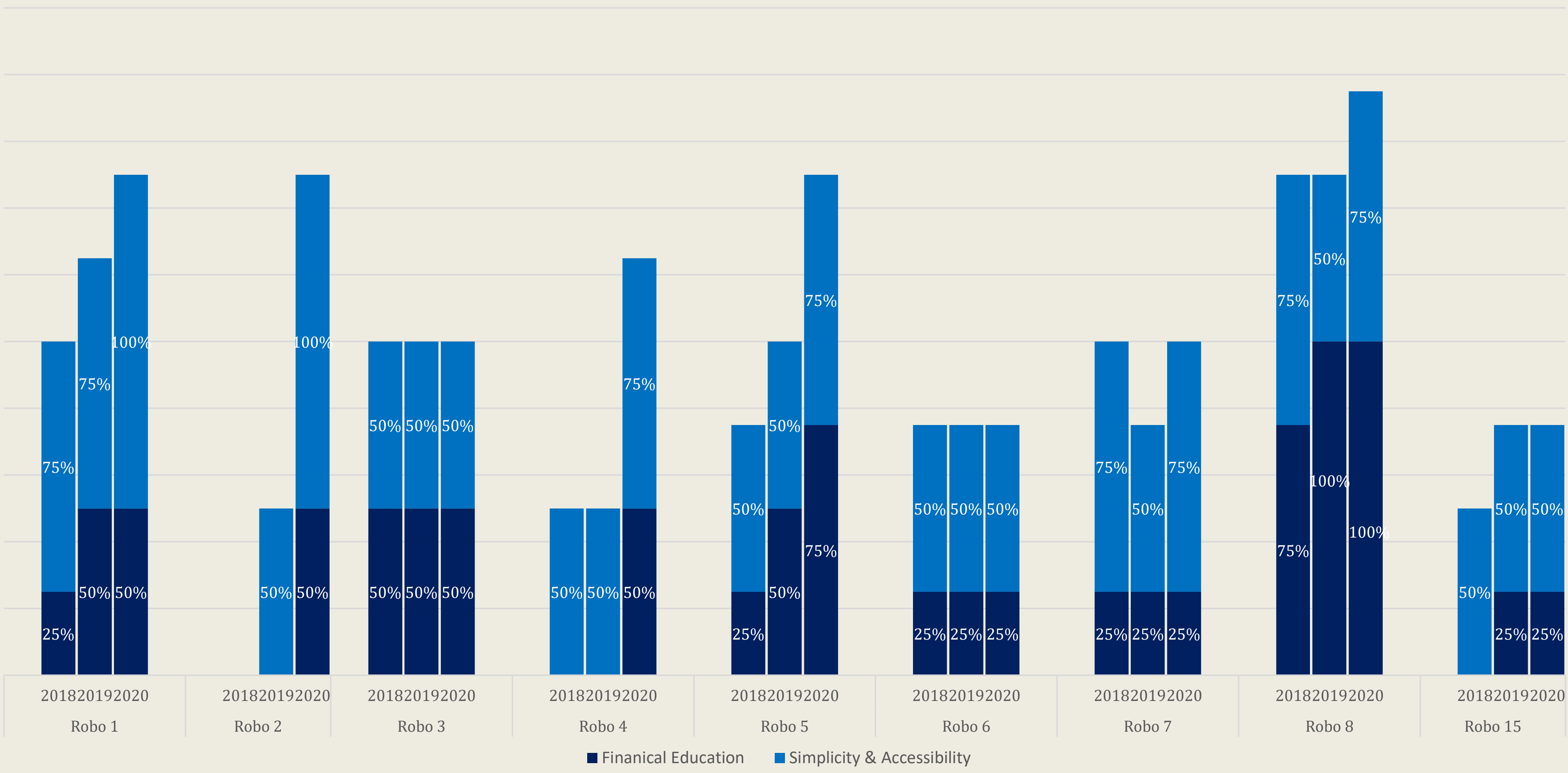
USER-FRIENDLINESS COMPARISON FROM 2018 TO 2020

We checked whether the platforms improved their score from 2018 to 2020 and we found out that some improvements are made overall (Graph 14)[89]. Compared to the previous years it seems that 5 platforms have improved their score in terms of user-friendliness providing additional features such as tutorials on how to use the platform or educational videos and webinars on different financial thematic. Also, the introduction of a human advisor has been observed as a positive improvement of some platforms.

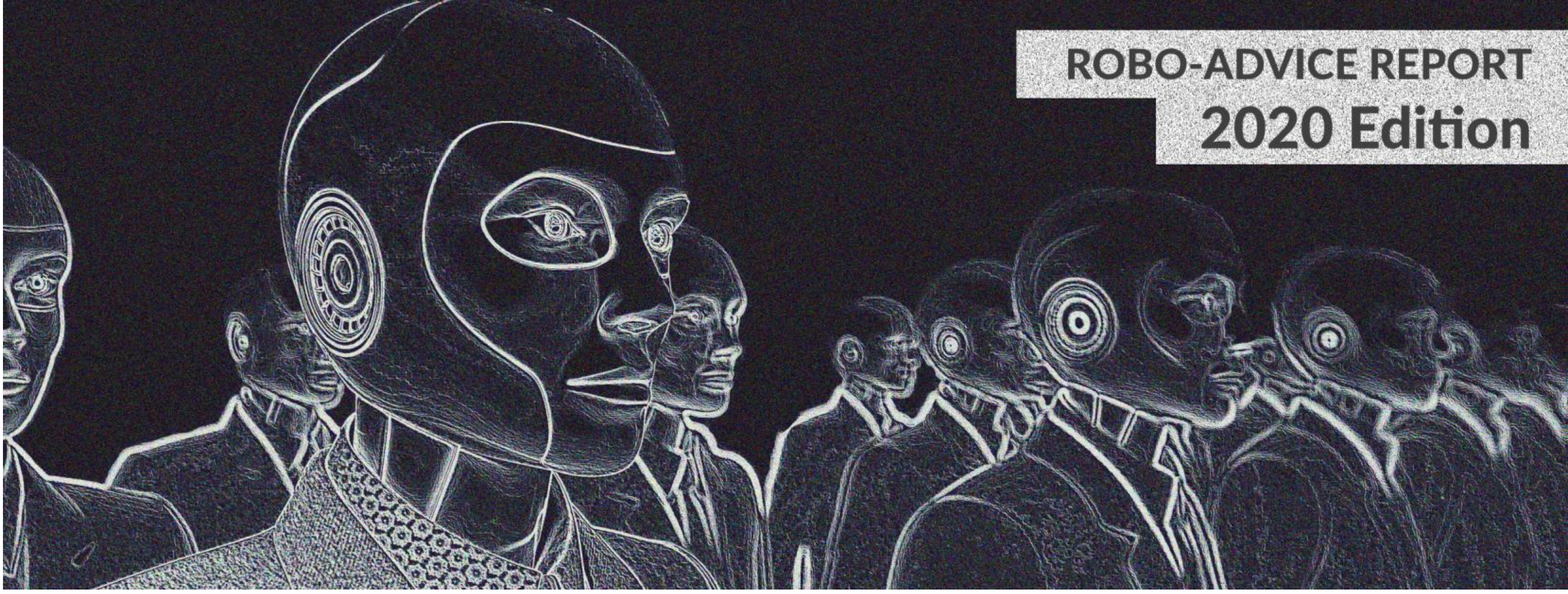
However, very few platforms have improved their questionnaire compared to the previous year according to BETTER FINANCE criteria. The questionnaire is one of the most important elements of the service, allowing for the formulation of tailor-made portfolios based on sufficient and adequate questions to the layman investor.

[89] The comparison does not include the new platforms analysed this year (Robo 9, Robo 10, Robo 11, Robo 12, Robo 13, Robo 14, Robo, 15, Robo 16, Robo 17).

Graph 14. Comparison User-friendliness (2018-2019-2020)



Source : BETTER FINANCE own composition (data for Robo 2 in-2018 is not available) The comparison does not include the new platforms analysed this year (Robo 9, Robo 10, Robo 11, Robo 12, Robo 13, Robo 14, Robo, 15, Robo 16, Robo 17)



Transparency

The cornerstone of a sound financial industry, transparency, has been tested on 4 areas: **fees, portfolio allocation, risk and past performance**. As for the report in 2018 and 2019, this year's research report analyses to what extent clear and intelligible information on these 4 key areas is disclosed to potential investors. This would allow also for a comparison among the 9 Robo-advisors analysed in the previous 2 years.

Transparency of Fees

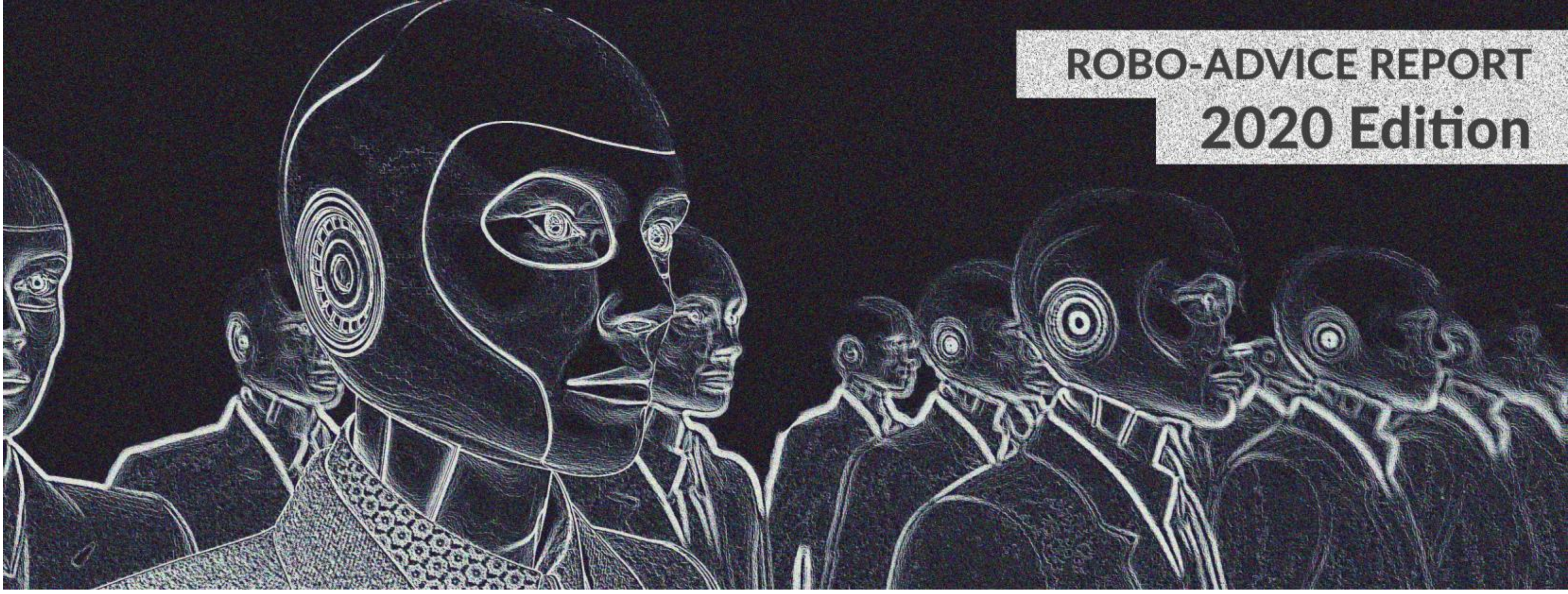
One of the comparative advantages Robo-advisors have over more traditional providers of investment advice is lower fees on average. While the exact overview and comparison of fees is presented earlier in this Research report, this section will focus on the transparency of fees presented to the investors under the following criteria:

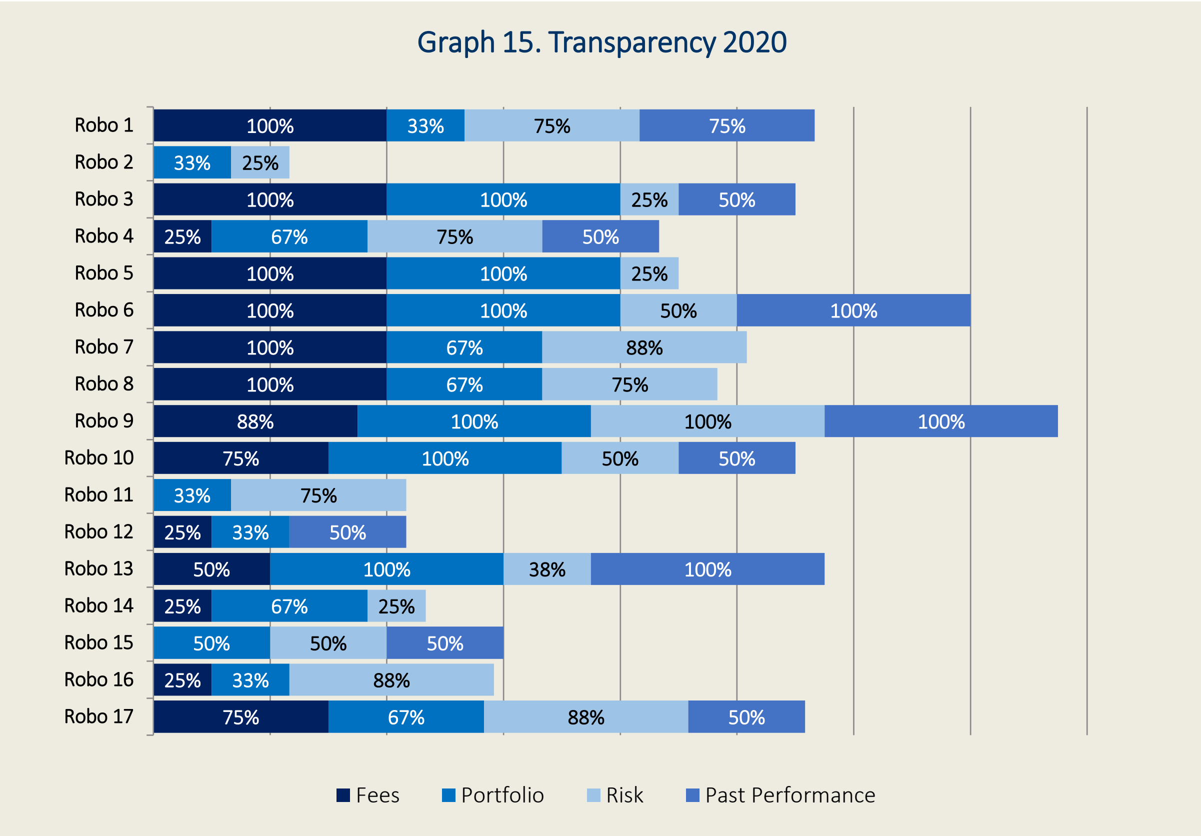
1. Does the platform in question inform the investor about fees alongside the investment advice provided?
2. Are the fees presented in detail? Are they showing the split between service or management fees and underlying fund fees?
3. Do the future performance scenarios and or expected returns take fees into account?
4. Are the fees presented with the result aligned with the fees presented on the website? Do the platforms ensure that fees presented with the results are in line with actual fees presented in "fine print" of through conducting further research on the website?

BETTER FINANCE is not alone in bringing up the important issue of transparency on fees, already mentioned by **the European Commission's Study Distribution systems of retail investment products across the European Union** [90]. Looking at the platforms analysed this year (Graph 15) we observed that 82% of the platforms disclose fees after the questionnaire once the investment advice is presented to the investor.

However, a smaller group of platforms (70%) provide detailed fees information, specifying the composition of the total fee. Less than half of the platforms (44%) specifies that their future scenario projections and expected returns are after fees. When looking at the extent to which the fees presented with the results are in line with the fees presented elsewhere on the website or in the fine print, **only 7 platforms satisfy the 4 requirements (above) set** by the BETTER FINANCE team.

[90] European Commission, 'Distribution Systems of Retail Investment Products Across the European Union: Final Report' (2018) European Commission, available at: https://ec.europa.eu/info/sites/info/files/180425-retail-investment-products-distribution-systems_en.pdf.





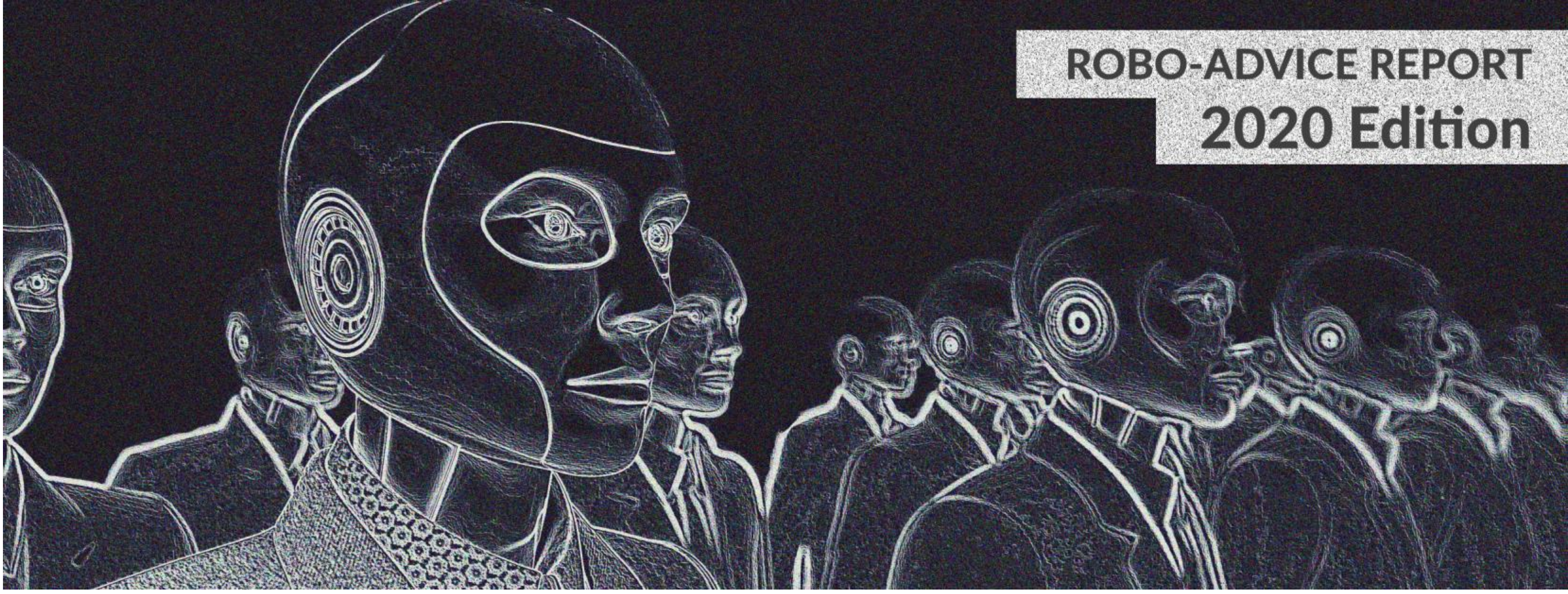
Source: BETTER FINANCE own composition

Portfolio Composition Transparency

We have checked the degree of disclosure with regards to portfolio allocation along the following criteria:

1. Does the platform in question present information on the portfolio composition, including the split between stocks and bonds, further asset class specifications, geographical spread and detailed overview of underlying funds?

A total of 16 platforms out of 17 provide the potential investor with a simple overview of the content and allocation of their investment portfolio. While the degrees to which details are provided vary considerably. For example, 14 Robo advisors provide information on asset class allocation but only 6 give also funds specifications and detailed information.



PAST/ FUTURE PERFORMANCE AND RISKS

Central to the investment advice presented to potential investors by Robo-advisors is the projection of forecasted returns of the investment in question, often referred to as “future performance scenarios”. The reliance on past performance data in such estimates is unfortunate. In addition to being inherently misleading, MiFID II clearly states that *“…such forecasts are not a reliable indicator of future performance”*. A clear warning of their inherent unreliability is therefore seen as absolutely necessary by BETTER FINANCE, as required by the EU financial framework to accompany future performance forecasts (and tested in this study under the risk transparency section). Such warnings are unfortunately missing from the majority of the Robo-advisors covered in this study. They are either completely left out or presented through vague and unsatisfactory formulations.

BETTER FINANCE strongly disagrees with the usage of future performance scenarios and finds the inclusion of the past performance of a proposed portfolio, or of a comparable fund, to be far more useful, enabling the potential investor to assess whether the fund achieved its objectives and take informed decisions. When looking at the Robo-advisors’ transparency as pertaining to historical data, this study has focused on the below criteria:

1. *Does the platform show past performance alongside the investment advice presented to the potential investor?*
2. *Does the platform show past performance against a benchmark for comparison alongside the results?*

In order to ensure that the risk levels of the proposed investments by the Robo-advisors are clearly disclosed to the potential investor – all the more important taking into consideration the “Do-It-Yourself” approach of most Robo-advisors included – this study researches the risk transparency of the different Robo-advisors. The financial literacy level of the investor, crucial to their ability to assess and analyse the information on risk provided by the Robo-platforms in question, plays an important role and is further developed under the chapter on user-friendliness.

In estimating risk transparency, disclosure of said risk on the different platforms has been researched based on the following criteria:

1. Does the platform clearly disclose the risk-level of the advised investment strategy, either set by the Robo-advisor based on input provided by the potential investor, or determined directly by the investor alongside the investment advice?
2. If presented, do future performance scenarios or estimates include best- and worst-case scenarios alongside the investment advice?

3. Does the platform present a clear and visible warning on the potential loss of value of the initial investment alongside the investment advice?
4. Does the platform present a clear and visible warning on the unreliability of future performance scenarios alongside the investment advice?

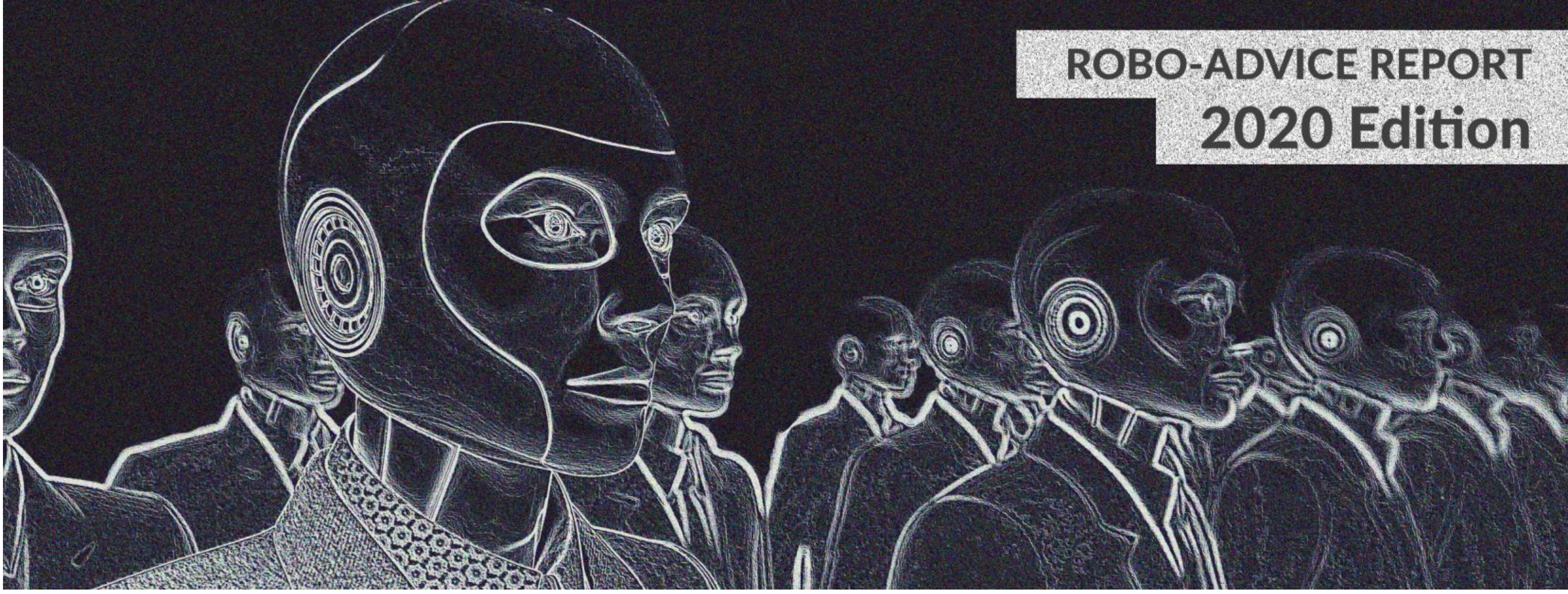
As discussed above, a **prominent warning** on the unreliability of future performance scenarios is required by law, as is a clear warning on potential loss of value. This study thus research to what extent such warnings are presented with the results, and whether they are presented with the investment advice and expected projections of return on the initial investment.

Although it is the responsibility of the potential investor to go over the information provided on the website in order to make an informed investment decision, BETTER FINANCE believes that the responsibility to provide clear and non-misleading information falls squarely on the suppliers of financial services. For this reason, it is not sufficient for the platform to limit itself to providing information somewhere on the website. Consequently, essential information should also be provided as part of the results of the questionnaire.

Regarding future performance scenarios, 14 **out of** 17 platforms include best- and worst-case scenarios but only 10 platforms include past performance scenario in their investment advice. However, **only 5 platforms (28%) specify that the past/future performance scenario are not reliable indicators of the actual performance**. Finally, only 33% of the platforms clearly provide a warning stating that the investment may lose value.

67% of platforms clearly disclose the **risk level of the portfolio** in question, though the underlying details of what the risk level contains in practise varies greatly and leaves much to be desired. In cases where the potential investors themselves set the risk-level, not based on specific tests of risk-carrying ability or preferences through scenarios, such information becomes all the more important. Further details on this are presented in the following section on the suitability of the questionnaires used by the platforms as well as the final investment advice presented.

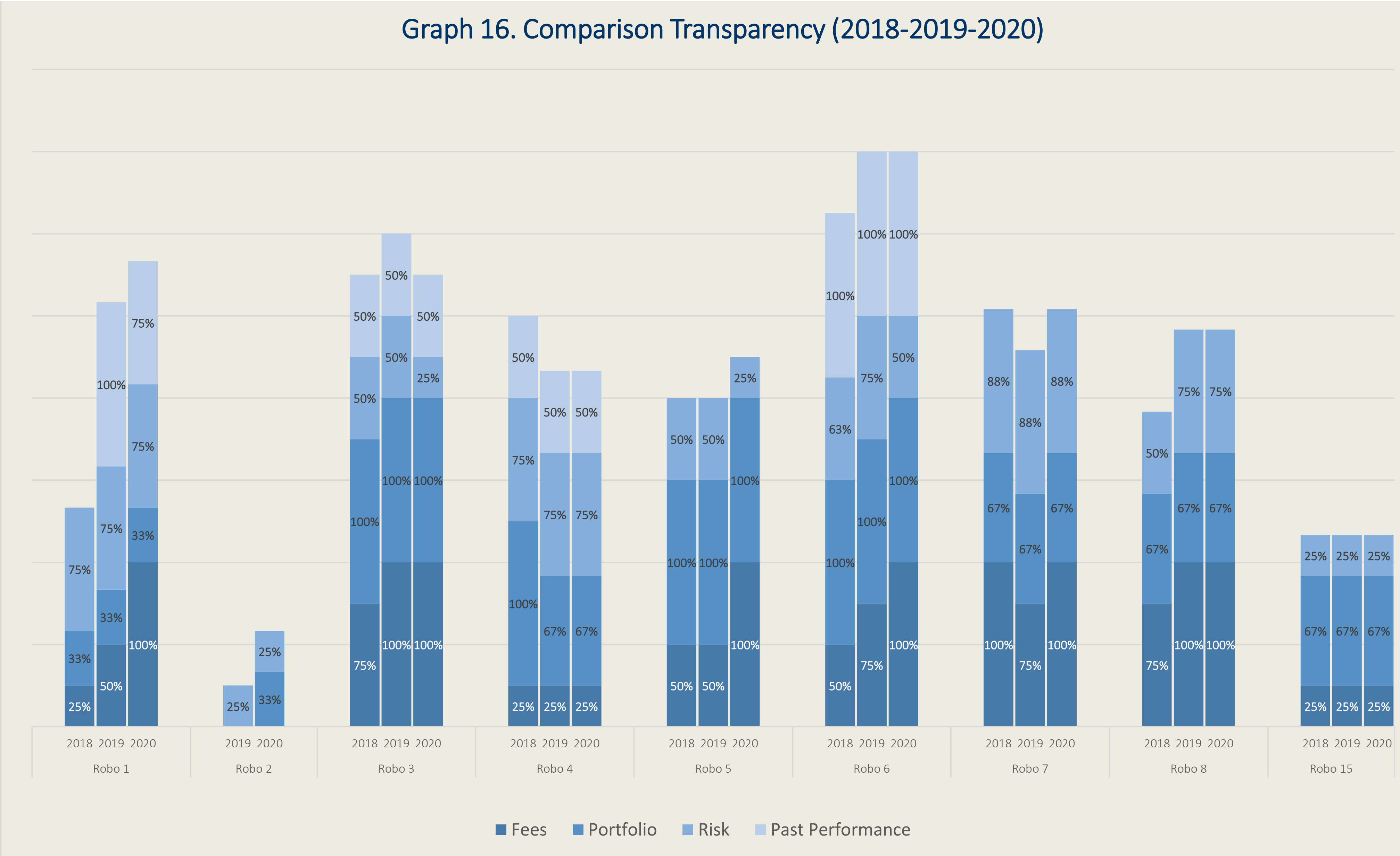
In line with BETTER FINANCE's findings, fair, clear and non-misleading information remains one of the least enforced investor protection rules in the EU.

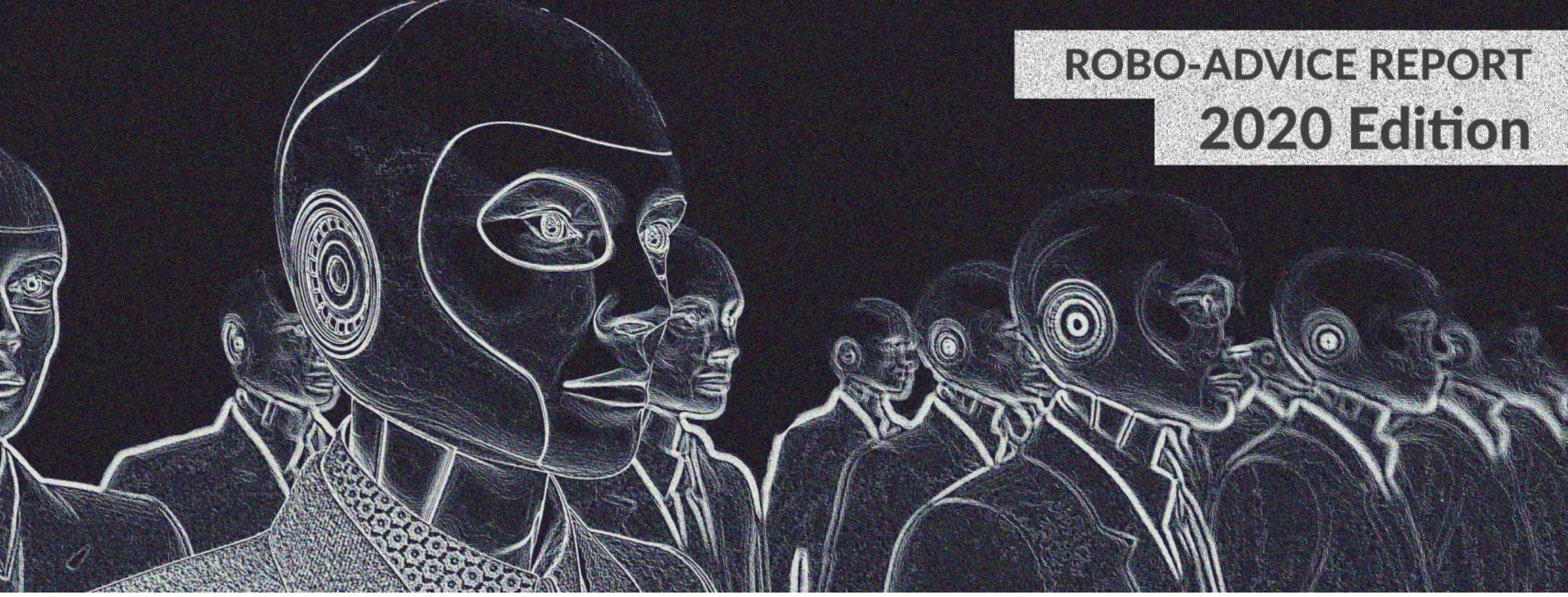


TRANSPARENCY COMPARISON (FROM 2018 TO 2020)

Looking at the 9 platforms (Graph 16)[91] tested over 3 years, from 2018 to 2020, it is possible to observe very little improvements compared to the previous year in terms of transparency. Only 3 platforms appear to have improved their transparency scores. The rest seems to remain unchanged over time or to slightly improve. The most relevant improvements in terms of transparency regards the fees disclosure. More platforms started to disclose fees together with the investment advice and, in 2020, 67% of platforms provide detailed information on the allocation of fees compared to 38% of platforms in 2018. Also, the disclosure of final returns after fees has proven to be an increasing trend with 38% of platforms in 2018, 67% in 2019, and 78% in 2020. Unfortunately, almost no improvement has been made in terms of including warnings and risk disclosure related to the future and past performance.

[91] Please note that the comparison does not include the new platforms analysed only in this year report (Robo 9, Robo 10, Robo 11, Robo 12, Robo 13, Robo 14, Robo, 15, Robo 16, Robo 17). Data for Robo 2 in 2018 is not available. So, for the year 2018, the sample is based on 8 platforms compared to the 9 platforms for 2019 and 2020.


Graph 16. Comparison Transparency (2018-2019-2020)
Robo 1
Robo 2
Robo 3
Robo 4
Robo 5
Robo 6
Robo 7
Robo 8
Robo 15
2018
2019
2020
Fees
Portfolio
Risk
Past Performance



Divergences in portfolio composition and expected returns

In our view, the differences in investment advice should be qualitative and reveal the knowledge and experience of an advisor in the **choice of concrete investments**, **holding strategy** and **diversification**. As such, the same client should be recommended by any advisor a portfolio that falls under the same risk-return parameters since it must be suitable and aligned with his investor profile.

However, this year again the research shows that there is a significant divergence between the investment advice provided for the two profiles. In this section we are going to analyse the following indicators for the two profiles (the Millennial and the Baby-boomer):

1. **Proposed portfolio allocation,** further distinguishing whether the instruments are:
    a. direct investments (equities, bonds, RETIS)
    b. Indirect Investments (UCITS, AIFs etc)
2. **Expected returns on investment.**
3. **Correlation between the expected return on investment and the equity allocation.**

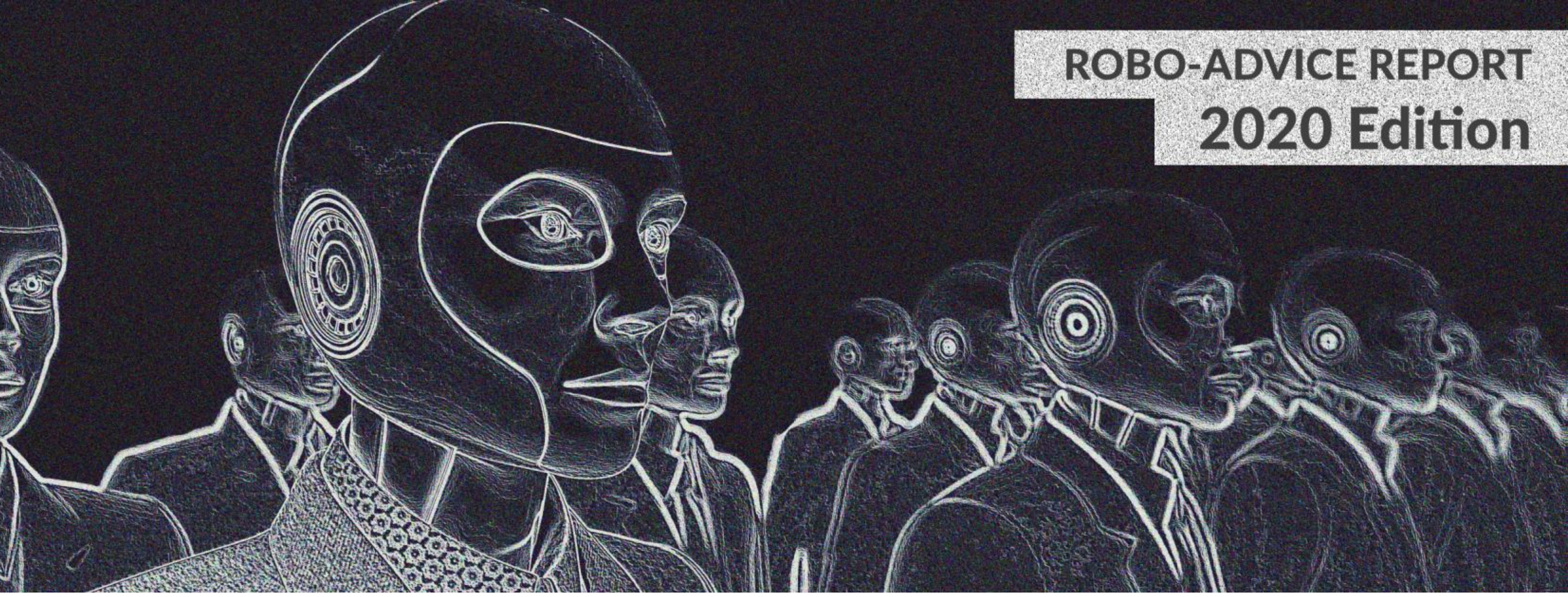
As highlighted above, in the sub-section on inducements, algorithm-based advice engines can be corrupted for many purposes, especially in the pre-contractual phase (before the client commits any money). One of the reasons can be to present high profit estimations to attract the client to subscribe. MiFID II does not prescribe any parameters or estimation formulae, only requires estimations to be "economically sound".

The purpose of the ***expected returns*** analysis is not to calculate how precise or methodologically sound the growth rates are – as there is no possibility to accurately predict the future – but only to give an objective point of comparison for the return estimations made by the robo-advisors.

In addition, we are going to compare the results of this year with the results of last year's Robo-advice report (2018) in order to assess whether the divergencies remain for the same platforms. It is important to point out the following:

First, not all Robo-advisors present results for the indicated investment horizon for the baby-boomer and the millennial. For those who calculated performance forecasts on less or more than 20 years for the Baby-boomer (BB) and less or more than 5 years for the Millennial (M), the research team had to estimate and calculate the cumulative results with regards to the target date BB (2039) and M (2024).

Some of the expected returns were presented in different time horizons compared to what is desired by the investor profiles. Therefore, for certain Robo-advisors, BETTER FINANCE has recomputed the expected returns according to the desired investment horizon of the profiles (5 years for the M and 20 years for the BB). The platforms that required these recalculations are: Robo 5, Robo13 and



Robo 14 for the Millennial profile and Robo 1, Robo 4, Robo 5, Robo 8, Robo 9, Robo 10, Robo 13 and Robo 14 for the Baby boomer.

Last, some Robo-advisors focus on fees and annual growth rates, which is highly **misleading since they do not take investment horizons into account**. In some cases, a net return per year is shown, solely based on the risk profile of the potential investor (putting particular emphasis on the low level of fees), and disregarding whether the target date is 5 or 20 years in the future.

Proposed Portfolio Allocation

As a reminder, the research team used a model investor questionnaire developed by a team of academics and obtained a generic risk profile and portfolio allocation for each investor (see **Methodology** above):

Table 17. Investor profiles

	Type	Risk-return class	Min-max equity shares
Millennial	Aggressive	4-6	60% - 100%
Baby boomer	Dynamic	3-5	35% - 75%

Source: BETTER FINANCE composition based on MBU data

Our comparison portfolio compositions recommend an equity allocation between 60% and 100% for the millennial and between 35% and 75% for the baby boomer. Moreover, the risk-return class of the portfolio should be between 4 and 6 (out of 7) for the millennial and between 3 and 5 (out of 7) for the baby boomer.

One of the first aspects the research team observed is that, seemingly, **none of the Robo-advisors recommend investing directly in financial instruments (such as equities and bonds),** but use a strategy or indirect exposure to these asset classes through packaged products. The only direct holdings – apparent from the available information – are in cash reserves.

Second, we observed that half of the European robo-advisors in this sample recommend alternative investments (*note: alternative to equities and fixed income*), such as property, infrastructure, commodities or gold. While a few robo-advisors recommend the millennial investor to hold some cash reserves, others recommend using the cash reserves on the money market (through money market funds) to obtain additional interest for that capital.

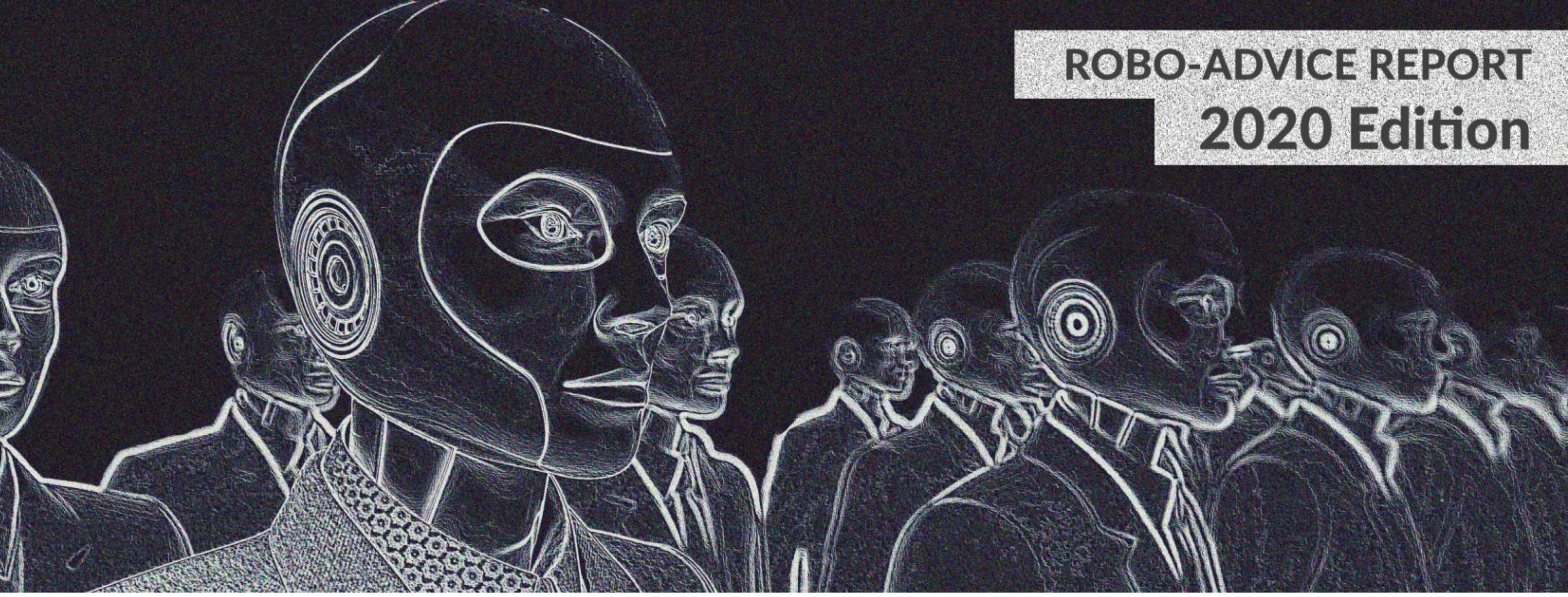


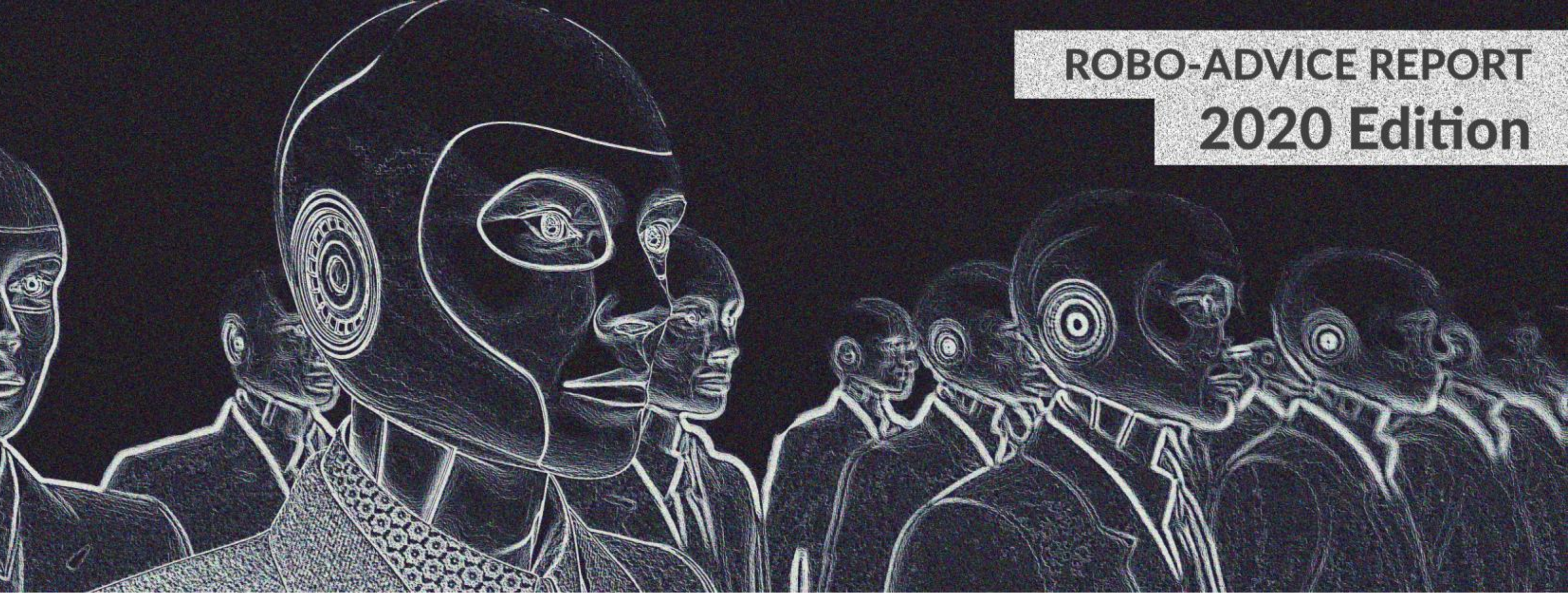
Table 18. Portfolio composition - Millennial

	ETFs/ other funds			Direct holdings
EUROPE	Equity	Fixed income	Other	Cash and other
Robo1	59%	39%	-	2%
Robo2	50%	50%	-	-
Robo3	30%	70%	-	-
Robo4	50%	50%	-	-
Robo5	70%	29%	1%	-
Robo6	46%	54%	-	-
Robo7	*22%**	*18%**	*60%**	-
Robo8	32%	55%	13%	-
Robo9	46%	54%	-	-
Robo10	28%	41%	31%*	-
Robo11	30%	70%	-	-
Robo12	43%	33%	24%	-
Robo13	16%	44%	16%	26%
USA/AUS/SG				
Robo14	84%	16%	-	-
Robo15	n/a	n/a	n/a	-
Robo16	72%	27%	-	1%
Robo17	100%	-	-	-

Source: BETTER FINANCE composition based on robo-advisors' data. N/A: data non available; *used also capital-guaranteed funds

In terms of equity-bond shares, we can observe that 11 out of the 14 European robo-advisors recommended an equity exposure below or equal to 50% of the investment. In our view, such an approach is quite prudent, which does not reflect the *aggressive* risk profile of the millennial investor. Although, theoretically, Robo1 does recommend close to 60% of equity investments, we can consider it almost the same (59% vs 60% min) as our *reference allocation*. From the non-European robo-advisors, all fall under our comparative equity allocation.

No financial advisor, including robots, can be expected to recommend the exact same portfolio allocation (equities %, bonds %, other %, cash %). Nevertheless, in generic terms, the research team is surprised to see that the recommended equity exposure ranges from 16% to 89% for the same investor profile.



Unfortunately, our report is not the only one to have found such a divergence: a FINRA report[92] in the US (2015) comparing seven "digital advisers'" recommendations for the same 27-year-old investor profile (saving for retirement) observed:

- equities: from 51% to 90%;
- fixed income (bonds): from 10% to 40%
- other (real estate, cash, commodities): from 0% to 16%.

However, the particularity of Robo-advisors is that these offer to the client the possibility to change its allocation and investment strategy, to tweak it to its pre-defined preferences and even tweak it until the return estimations match its desired outcome. In addition, we have observed that one of the platforms allows for life-cycling, which would further decrease in 5 years the equity allocation from 28% to almost a half. The same unfortunate findings are valid for the baby-boomer investor as well.

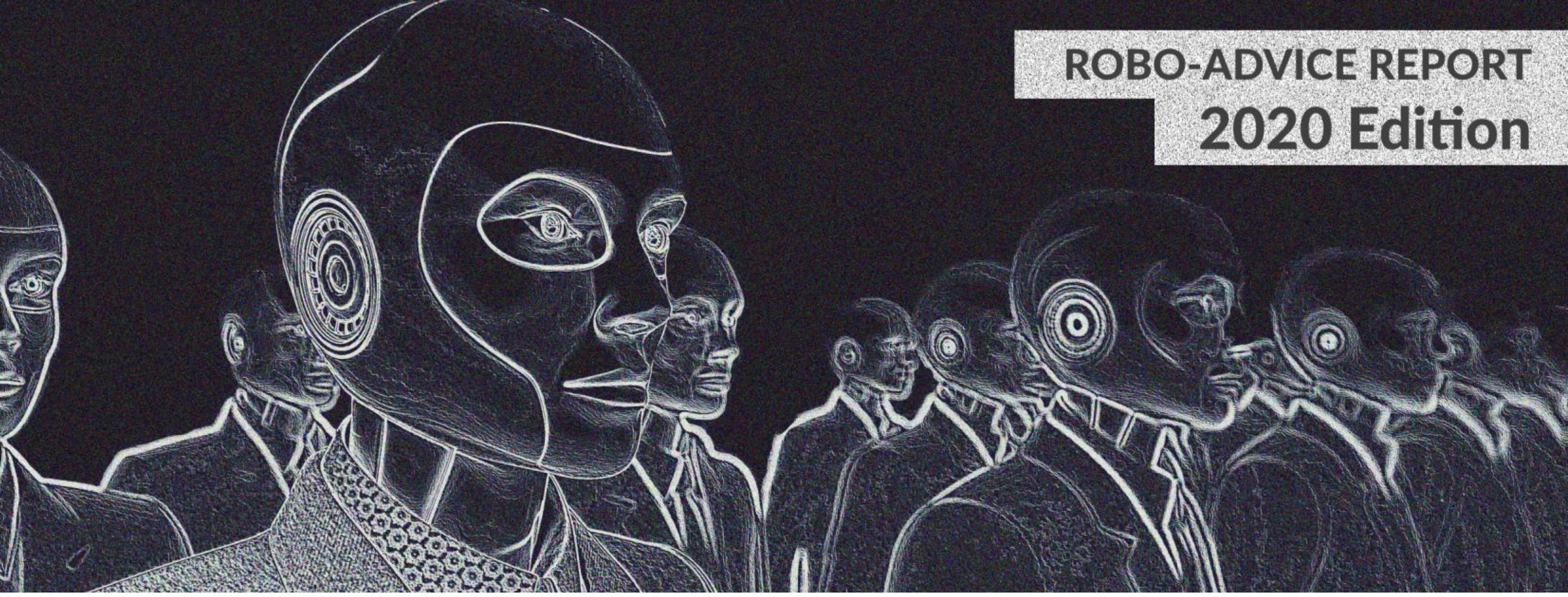
Table 19. Portfolio composition - Baby boomer

	ETFs/ other funds			Direct holdings
	Equity	Fixed income	Other	Cash and other
EUROPE				
Robo1	90%	8%	-	2%
Robo2	60%	40%	-	-
Robo3	50%	50%	-	-
Robo4	35%	65%	-	0%
Robo5	30%	69%	1%	-
Robo6	45%	55%	-	-
Robo7	22%	18%	-	60%
Robo8	32%	55%	13%	-
Robo9	46%	54%	-	-
Robo10	95%	5%	-	-
Robo11	40%	60%	-	-
Robo12	25%	53%	23%	-
Robo13	9%	41%	13%	37%
USA/AUS/SG				
Robo14	67%	33%	-	-
Robo15	n/a	n/a	n/a	-
Robo16	6%	78%	15%	1%
Robo17	0%	100%	-	-

Source: BETTER FINANCE composition based on robo-advisors presented data

The research team expected to see an equity allocation ranging between 35% and 75%, but 8 out of the 14 platforms recommend an equity exposure outside those intervals. The extremities, present here

[92] See FINRA Report on Digital Investment Advice (n 39), Fig. 2, p. 4.



as well, are 9% and 95% for the equity allocation. **However,** the two upper extremes (90% and 95%) could be considered to fit the profile as these implement a *life-cycle approach*, meaning that the portfolio composition is changed and decreases from *high risk* to *low risk* as time passes by and the maturity of the investment approaches.

Moreover, having filled in the questionnaires, three robo-advisors "calculated" the same investor (risk-reward profile) for both the millennial and baby boomer and recommended the same portfolio composition.

RETURN FORECASTS AND RISKS

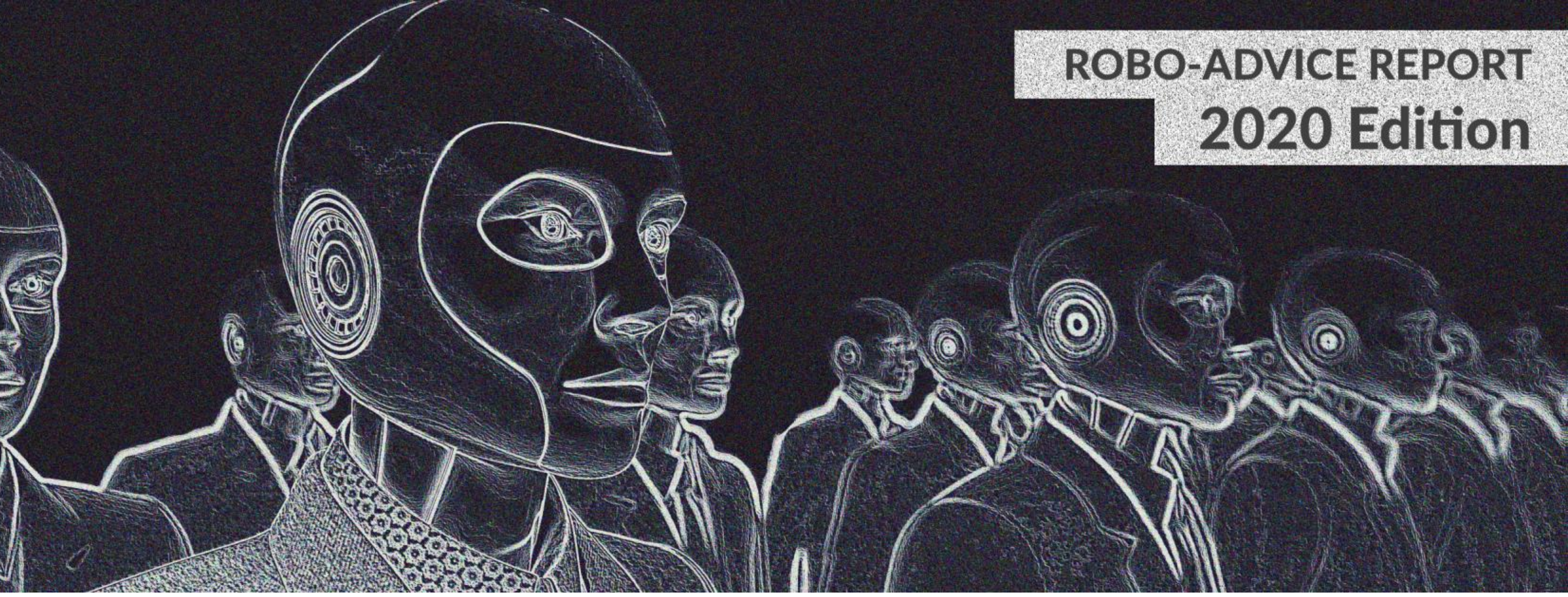
One important aspect the research team paid attention to during the "mystery shopping" exercise were the return estimations presented by Robo-advisors. As explained above, **the purpose** of this section **is not to invalidate** the return estimations, just **to provide a simple comparison** between Robo-advisors.

This comparison is important considering conduct of business rules in the pre-contractual phase towards retail investors. BETTER FINANCE stresses the importance of not exaggerating or over-estimating returns for commercial purposes. Moreover, as some platforms disclose *performance scenarios* (optimistic, pessimistic), and some do not, it is important to be able to compare such figures.

In addition, this part of the analysis is not meant to assess in detail the return estimations and the correlation with the portfolio composition, but instead to give a clear picture of how divergent and misleading return forecasts can be: the two platforms with almost the same equity allocations present four, very different, return estimations (Millennial); same stands for the baby-boomer results. These results are very misleading for the individual, non-professional investor as it can be observed that a cautious risk-reward profile with 50% of capital invested in equities is expected to return – on the same period – more than twice than a portfolio with 89% of its capital invested in equities.

Table 20. Return estimation comparisons

	Millennial (5y)			Baby boomer (20y)		
	European platforms					
	Equity	Risk	Projection	Equity	Risk	Projection
Robo1	59%	6/10	5.59%	90%	9/10	6.10%
Robo3	30%	n/a	2.43%	50%	n/a	2.80%
Robo4	50%	Cautious	4.95%	35%	Defensive	3.00%
Robo5	70%	n/a	4.30%	30%	n/a	1.60%
Robo6	46%	n/a	2.13%	45%	n/a	2.20%
Robo7	22%	5/10	5.02%	22%	5/10	3.30%
Robo8	32%	3/7	4.54%	32%	3/7	6.20%
Robo9	46%	3/7	4.60%	46%	3/7	4.60%



Robo10	28%	Medium	3.57%	95%	Medium	7.40%
Robo11	30%	Conservative	4.13%	40%	Cautious	4.70%
Robo12	43%	n/a	3.47%	25%	n/a	3.20%
Robo13	16%	2.5/10	1.80%	9%	2/10	1.20%
USA/AUS/SG						
Robo16	72%	Aggressive	12.80%	6.00%	Conservative	1.80%
Robo17	100%	Very aggressive	6.70%	0.00%	Very conservative	5.60%

Source: BETTER FINANCE own research based on robo-advisors' platforms

It is possible to observe that high divergences in terms of expected returns and associated risk arise among platforms for the same investor profile. **Annual growth rates vary from 1.80% to 12.8% for the Millennial, and from 1.60% to 7.40% for the Baby Boomer thus confirming the incoherent expected returns for the same investor profiles**.

For what it concerns the risk associated to the investment advice, the results show clear divergences on how the Robo-advisors evaluate the risk of the investor. For the Millennial we can find investment advice with very low risks (2.5/10) to "*very aggressive*" risk. The same considerations are valid for the Baby Boomers, with platforms that suggest "*conservative*" investment or at low risk (2/10) to highly risky portfolio (9/10).

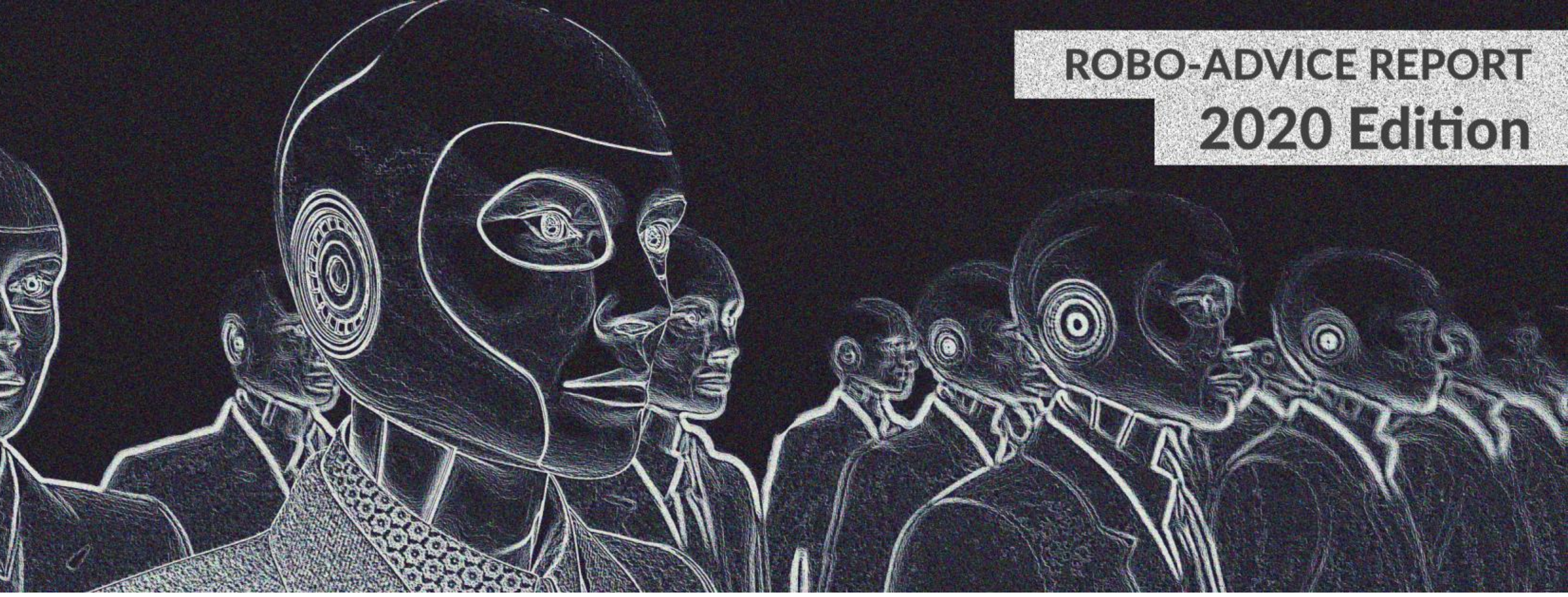
In addition, for some platforms there is no correlation between the risk and the annual growth rate proposed to the investor profile. For the Millennial, Robo 4 and Robo 11 assigned conservative/cautious risk with quite high annual growth rates (projections) 4.65% and 4.13% respectively.

Once again, there is a clear disassociation between the equity allocation in the portfolio, risk and the expected investment gain for the Millennial and the Baby Boomer. This stands as clear proof that, not only future performance scenarios are based on the discretionary assumptions of financial advisors, but that performance forecasts have the potential of being highly misleading for investors.

Table 21. Return estimation comparison (2018 – 2020)

Annual growth rate comparison	2018		2019		2020	
	M	BB	M	BB	M	BB
Robo 1	4,86%	6,14%	4,28%	6,10%	5,59%	6,10%
Robo 2	5,65%	3,37%	**N/A**	**N/A**	**N/A**	**N/A**
Robo 3	4,80%	2,05%	3,37%	6,12%	2,43%	2,81%
Robo 4	2,40%	1,47%	6,08%	4,14%	4,95%	2,96%
Robo 5	4,37%	1,53%	2,01%	0,92%	4,30%	1,60%
Robo 6	2,35%	4,54%	2,72%	2,77%	2,13%	2,17%
Robo 7	2,11%	3,95%	10,91%	5,80%	5,02%	3,33%
Robo 8	6,20%	6,77%	13,70%	6,21%	4,54%	4,74%
Robo 15	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Source: BETTER FINANCE own composition based on past years' research

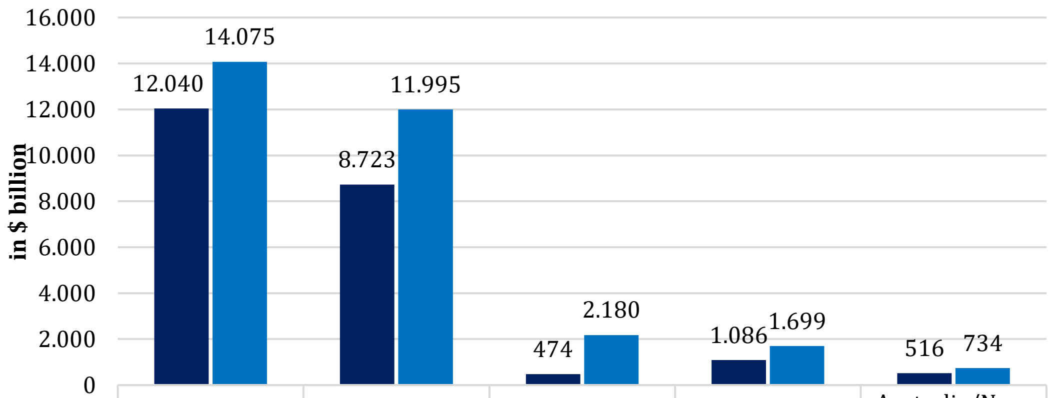


Also looking at the comparative table on annual growth rate among the 9 platforms analysed across 3 years (2018-2019-2020) it is possible to observe different projections for the same investment profiles (M and BB). Even if market conditions and changes on equity allocation for the proposed investment can affect the calculation of the expected returns each year, the comparative table confirms that individual investors cannot rely on future performance as very high differences and divergent expected returns are provided by the same platforms for the same investor profile across the 3 years.

Sustainable Investing

In this year's report, we looked at Robo-advisors also from the point of view of the sustainable investor. Investment strategies that include Environmental, Social and Governance (ESG) criteria have attracted more and more investors in recent years. Research found that three-quarters of investors are interested in sustainable investing with the most interest shown by millennials and women.[93]

Graph 22. Global Sustainable investing assets 2016-2018



	Europe	United States	Japan	Canada	Australia/New Zeland
2016	12.040	8.723	474	1.086	516
2018	14.075	11.995	2.180	1.699	734

<u>Source</u>: Global Sustainable Investment Alliance: 2018 Global Sustainable Investment Review.

Sustainable investing has significantly gained in popularity in recent years among institutional and individual investors globally. In 2018 the entire market for Europe, the US, Japan, Canada and

[93] Attracta Mooney, 'Rising Investor Interest Pushes ESG Funds Past $1tn' (FT.com, 17/11/2018) available at: https://www.ft.com/content/f1e98ec7-083e-3b95-8c6b-ecc4810b988e.

Australia/New Zealand reached $30.7 trillion, which represents a 34% increase in 2 years. These countries have experienced rapid growth in terms of sustainable asset values. [94]

Even if Europe did not experience the same rapid growth (11%) in 2016-2018 compared to previous years or the other regions, it accounts for the biggest share, representing almost half of the total for the 5 regions under consideration.[95] Therefore, we could expect that the European market is reaching maturity, compared to the other markets that are growing at a faster pace.[96]

Considering the increasing demand for sustainable products, are Robo-advisors taking sustainable investment options on board? Are they providing a suitable sustainable investing option to their clients?

Looking at the 18 Robo-advisors analysed in 2020, we observed that **only 6 platforms** (Robo3, Robo4, Robo9, Robo 10, Robo14, Robo13) **provide also sustainable investing to their clients**. BETTER FINANCE teams tested the same risk profiles (Millennial and Baby Boomer) by selecting the sustainable portfolio proposed by the platforms.

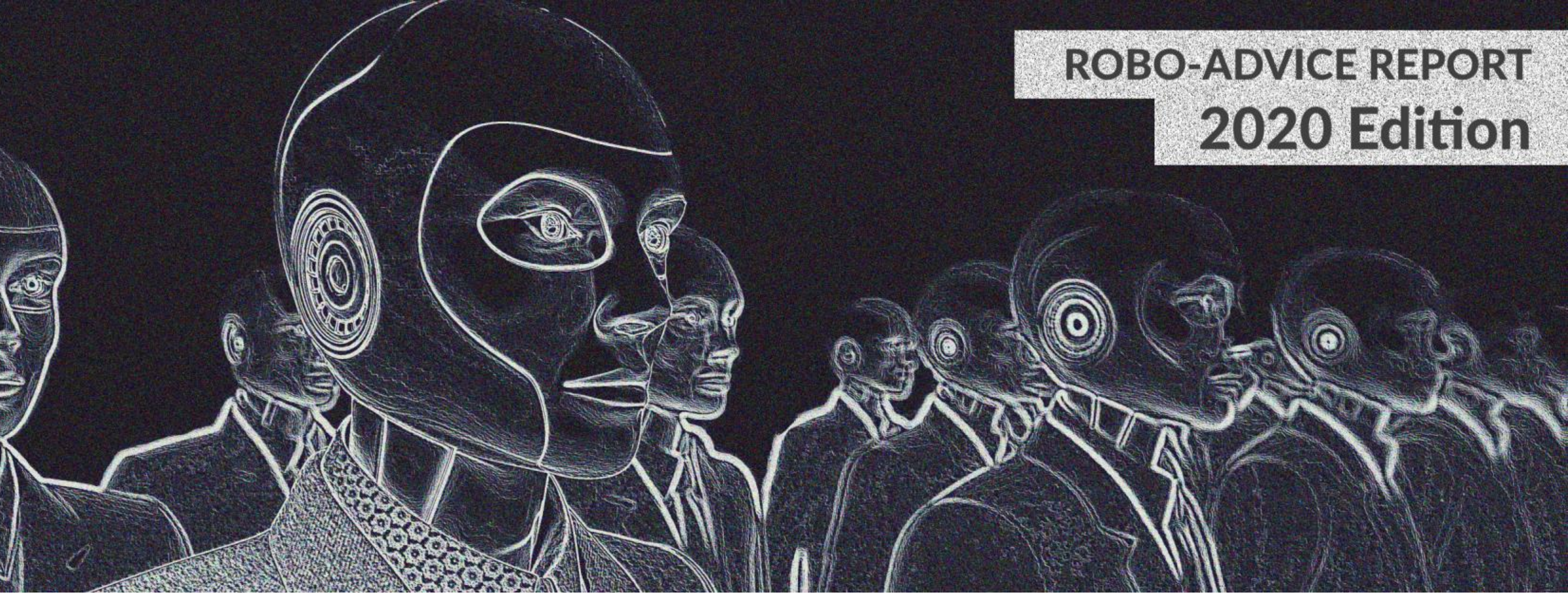
It is interesting to note that **none of the platforms ask about the sustainability preferences of the client during the questionnaire**. Only few platforms ask whether the client wants to invest sustainably or not at the beginning of the questionnaire, but most of the platforms under scope allow for tweaking the their portfolio from “traditional” to “sustainable” once the investment advice is provided.

Only one platform (Robo 13) requires filling a general form in order to be recontacted by an expert and receive information on ESG products proposed by the platforms. Therefore, no specific assessment could be performed.

It is interesting to note that for most of the platforms choosing an ESG or sustainable investment does not result in a change of fees, equity allocation or the expected returns compared to a “traditional” investment considering the same investor profile. However, on the 2 platforms that provide detailed information on the asset allocation, it is possible to observe that the list of proposed investments changes into ESG sustainable funds or sustainable ETFs.

One platform, (Robo 9) does not recommend any suitable ESG investment to the Millennial (probably) due to unavailable sustainable products matching that specific risk profile. Another platform, instead, does not propose any sustainable investment in combination with the selection of a retirement provision.

[94] Global Sustainable Investment Alliance, *The 20178 Global Sustainable Investment Review*, available at: http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf.
[95] *Ibid.*
[96] *Ibid.*



For Robo 3, the selection of a sustainable investment generates a slightly different expected return for the millennial and no considerable changes for the Baby Boomer.

The only platform that changes completely the asset allocation and the annual return of the investment when selecting a sustainable investment is Robo 14 for both profiles. For the Millennial, the annual return is lowered from 1.8% to 1.5% and from 1.2% to 1.1% for the Baby Boomer. Also, the equity allocation goes from 16% to 13% for the Millennial and it remains at 9% for the Baby Boomer. However, the selection of a sustainable portfolio comes at higher costs. Fees increase for both profiles, from 0.68% to 0.71% for the Millennial and from 0.66% to 0.89% for the baby boomer.

To conclude, the sustainability assessment of Robo-advisors is quite disappointing showing that most of the platforms do not ask specific questions on the sustainability preferences of the clients and lack adequate transparency in terms of environmental, social and governance characteristics included in the proposed investment. In addition, in several platforms it is difficult to understand what is the main difference between a traditional and a sustainable portfolio as relevant information is not disclosed.

Suitability

Being held at the same legal and professional standards as "human" advisors, automated platforms must fulfil certain criteria in order to deliver investment recommendations. These criteria, concerning the *information that needs to be collected* from the investor and the characteristics of the proposed investment sum up to the quality of ***suitability*** of the recommendation. As such, two platforms have been eliminated from this assessment as: one clearly disclosed it does not provide advice and the second did not provide sufficient information to qualify as advice.

First, the research team analysed whether the investor questionnaires satisfy certain information gathering requirements, such as:

- Financial Situation: Income, expenses, liquid and illiquid assets, debt and actual risk carrying ability, etc.
- Personal Situation: Level of education, age, marital status, dependence persons (children), years until retirement etc.
- Level of financial literacy: Previous knowledge and experience with investing and the products on offer, etc.
- Desired level of risk

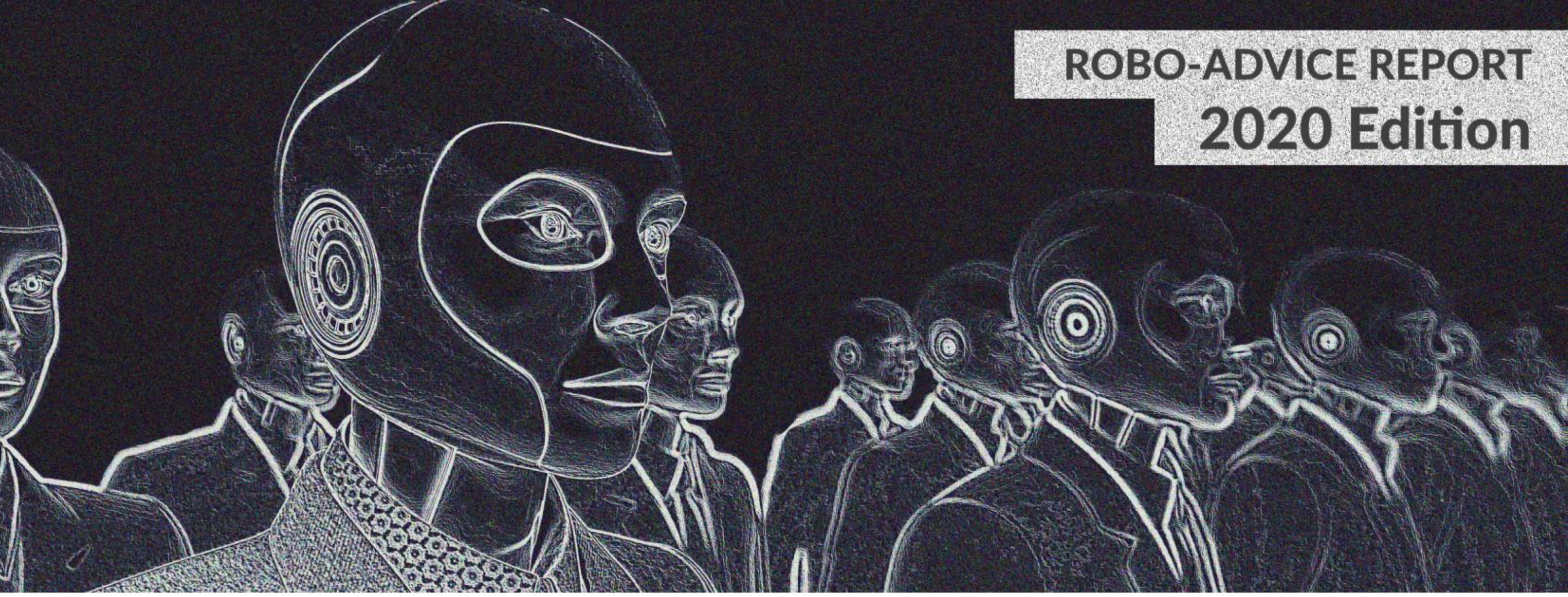
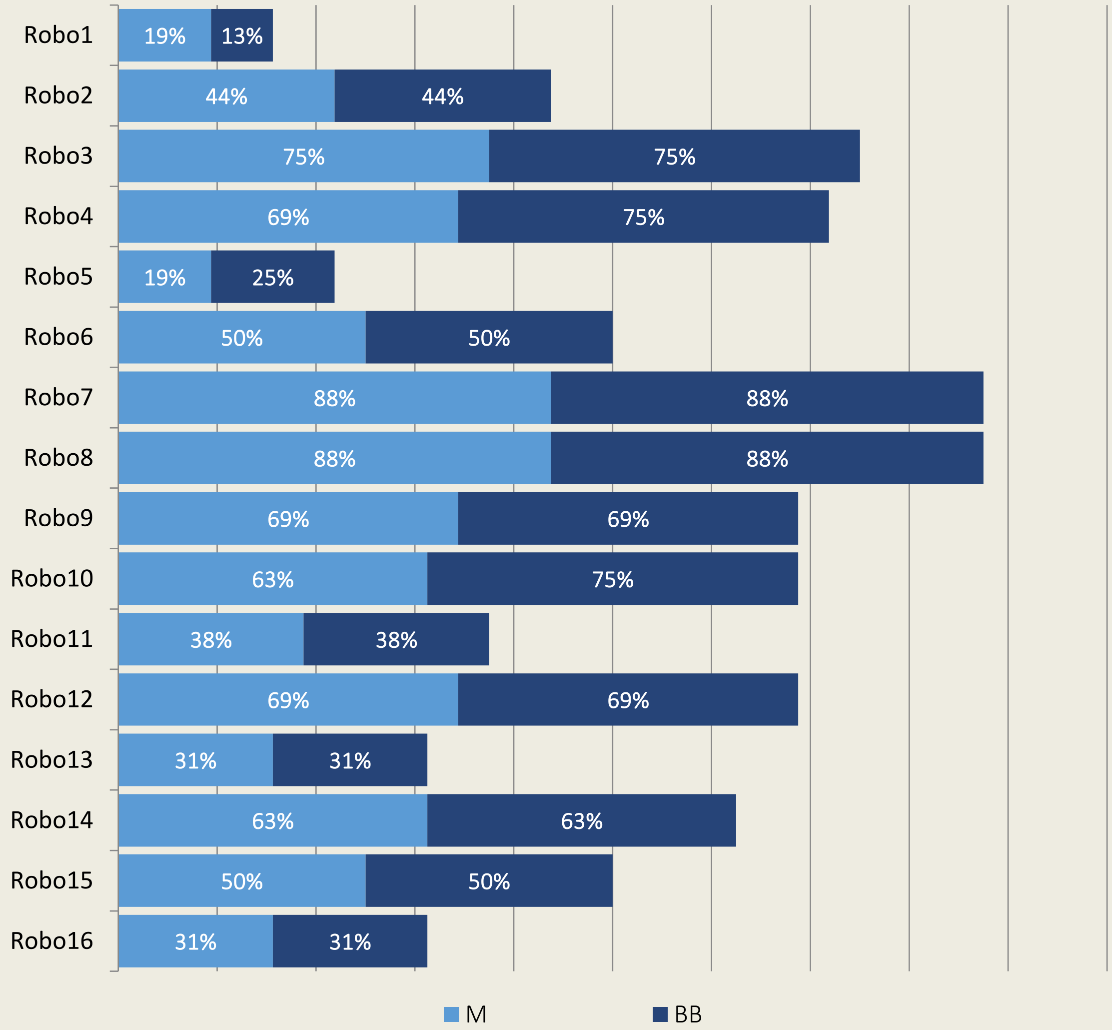


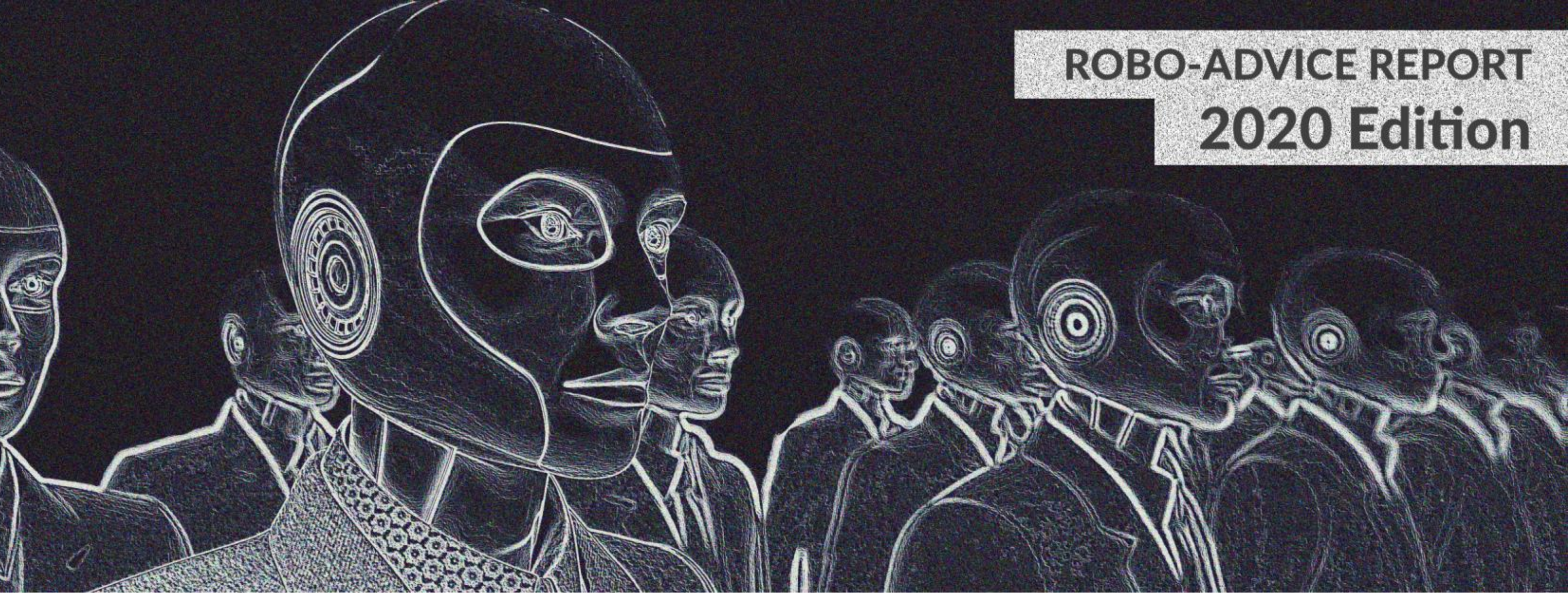
Figure 23. Questionaire Suitability 2020



Source: BETTER FINANCE own composition

Second, the research team also analysed whether the investment recommendations are suitable for each "mystery shopper" risk profile, meaning whether:

- the portfolio allocation is suitable for the risk profile of the investor.
- the recommended investments are diversified.



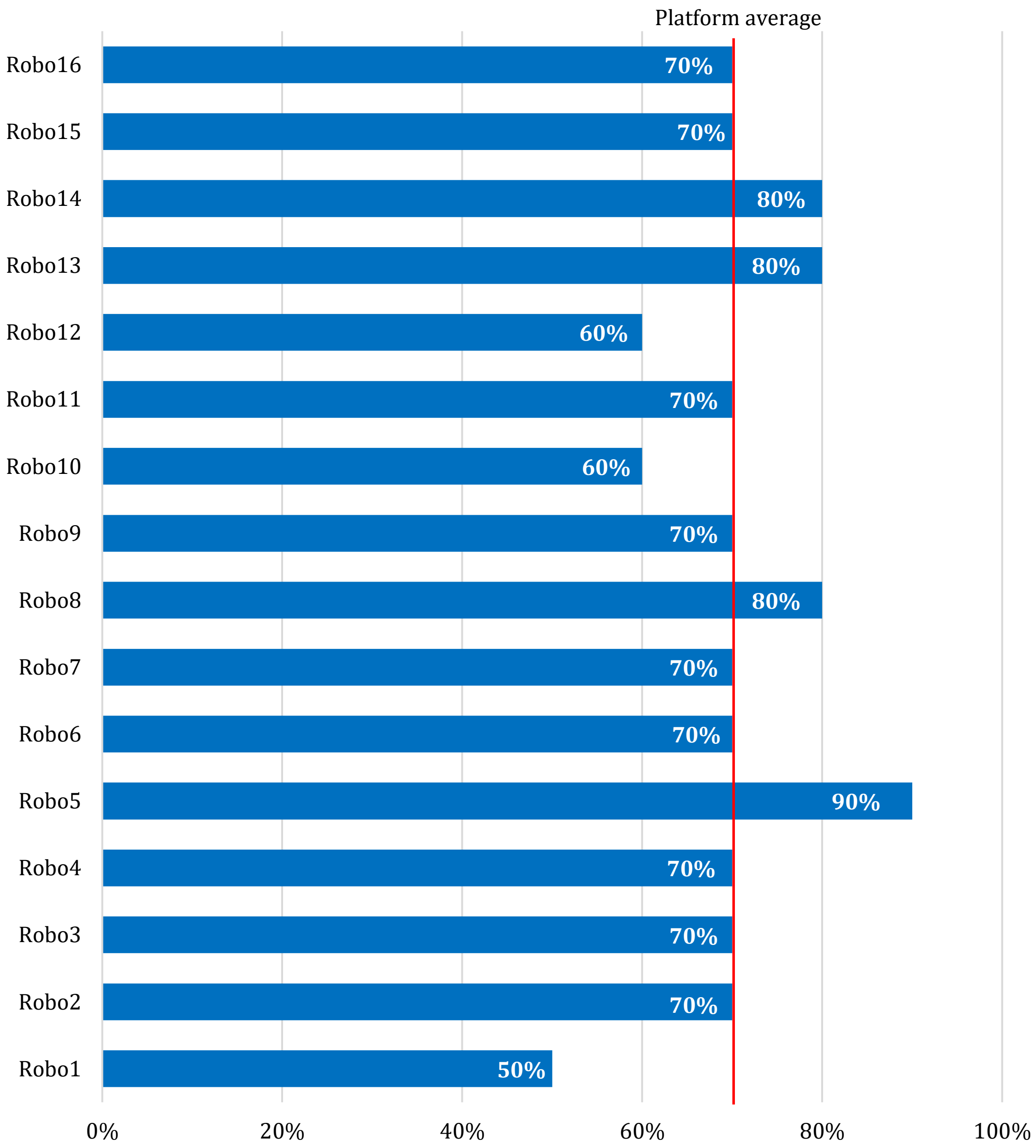
- whether the portfolio (incl. instruments) is aligned with the investor's ability to bear losses.
- whether the proposed investments are complex or not.

This assessment is simplified for three reasons: first, only one of the Robo-advisors provides sufficient information as to perform a thorough, in-depth assessment of the recommendation (SRRIs of the underlying investments, volatility, ability to reach the intended results and alignment with the holding period); second, to enable an overall comparison between the platforms.

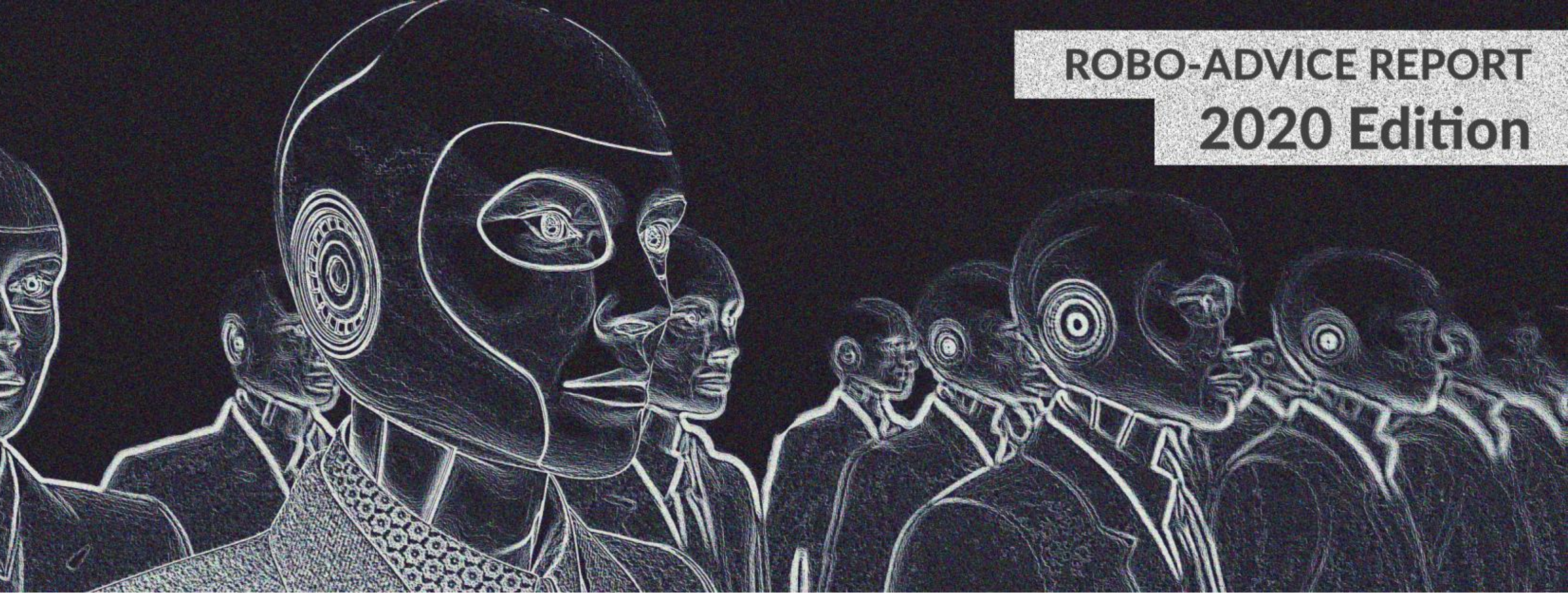
The scoring system awards either 0 or 1 point for each criterion above, except for *diversification*, for which from 0 to 2 points are awarded. Each analysis is performed by investor profile (millennial and baby boomer) and by platform. To obtain the results, the research team first calculated how many points of the maximum 5 (in %) each platform obtained by investor profile.

Further, each platform was awarded an average point (arithmetic average of the two profiles). The Figure x below presents the results.

Figure 24. Suitability 2020



Source: BETTER FINANCE own composition



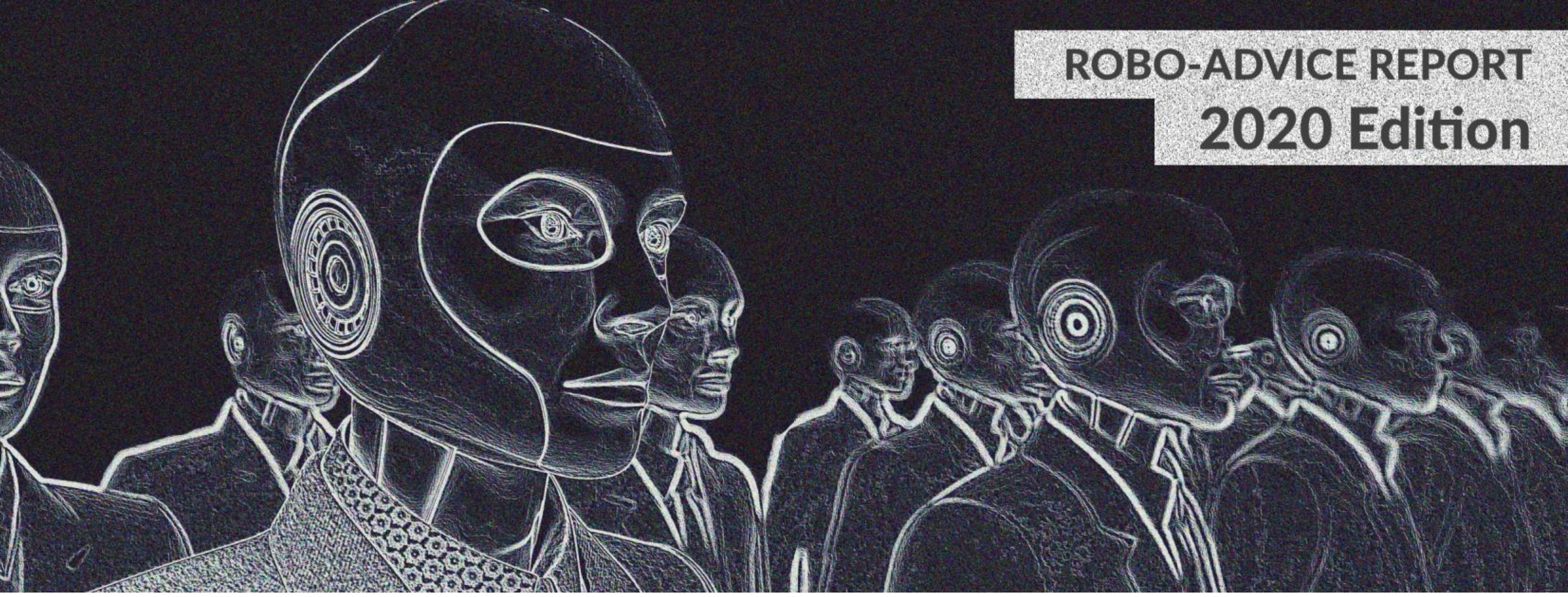
It is important to note that the millennial “mystery shopper” made it easy for all platforms to score well on the risk bearing capacity as the research team found no evidence to support an argument that the proposed portfolios are too risky. Concerning the baby boomer “mystery shopper”, only in one case we found that the proposed instruments and recommended portfolio allocation would have exposed the investor to a risk of loss much higher than the investor’s possibility.

All platforms scored one point on complexity, as none of the instruments proposed were misaligned with the investor profiles, i.e. to be complex or too risky products.

On diversification, four platforms scored more (2 out of 2) compared to the others as the portfolios comprised not only equities and bonds, but also property or infrastructure investments, commodities, gold, which may reveal a more complex and thorough advice process. Nevertheless, only one platform proposed full exposure to equities (100%), but the research team did not give 0 points as the types of ETFs used – from a geographic, focus and sectoral point of view – were sufficiently diverse. Same goes for the baby boomer: one platform proposed full exposure to bonds (100%), but these were sufficiently diverse (sovereign, corporate, emerging markets etc) to obtain at least one point.

The only aspect where the majority of Robo-advisors did not get any points are on the alignment of the portfolio composition with the risk profile: based on our pre-determined allocation, we compared the equity quota and found that only four platforms (for the millennial) and six (baby boomer) obtained one point in this respect. Is it important to mention that one platform proposed the baby boomer an allocation of equities much higher than her risk profile, but the research team awarded one point as it uses a life-cycling strategy, with a constant decrease of the equity allocation towards bonds.

Out of the 16 Robo-advisors analysed, seven (44%) are ranked at the peer average, obtaining 3.5 out of 5 points for the two profiles. One platform scored all points (for the millennial) and 4 out 5 for the baby boomer (averaging 90%).



Policy Recommendations

Following four consecutive years of research on Robo-advice by BETTER FINANCE, four main areas of concern stand out: **(i) investor protection awareness (ii) investment advice (iii) disclosure** and **(iv) sustainable investing.**

RAISE AWARENESS OF INVESTOR PROTECTION REGIMES

Our research suggests that the propensity of "retail" investors to seek advice and take financial action (invest) is determined by the level of financial literacy and trust in capital markets. These two factors act more as complements and can reduce the vulnerable position of "retail" savers and their perceived lack of protection.

However, we believe that EU citizens have little knowledge of the regulatory framework protecting their rights and interests. As such, many may feel deterred or demotivated to invest being unaware of the body of EU and national laws balancing their weak position towards finance professionals. If EU households would feel more protected and empowered, the willingness to seek advice and take financial action – formal investments into capital markets – would significantly increase.

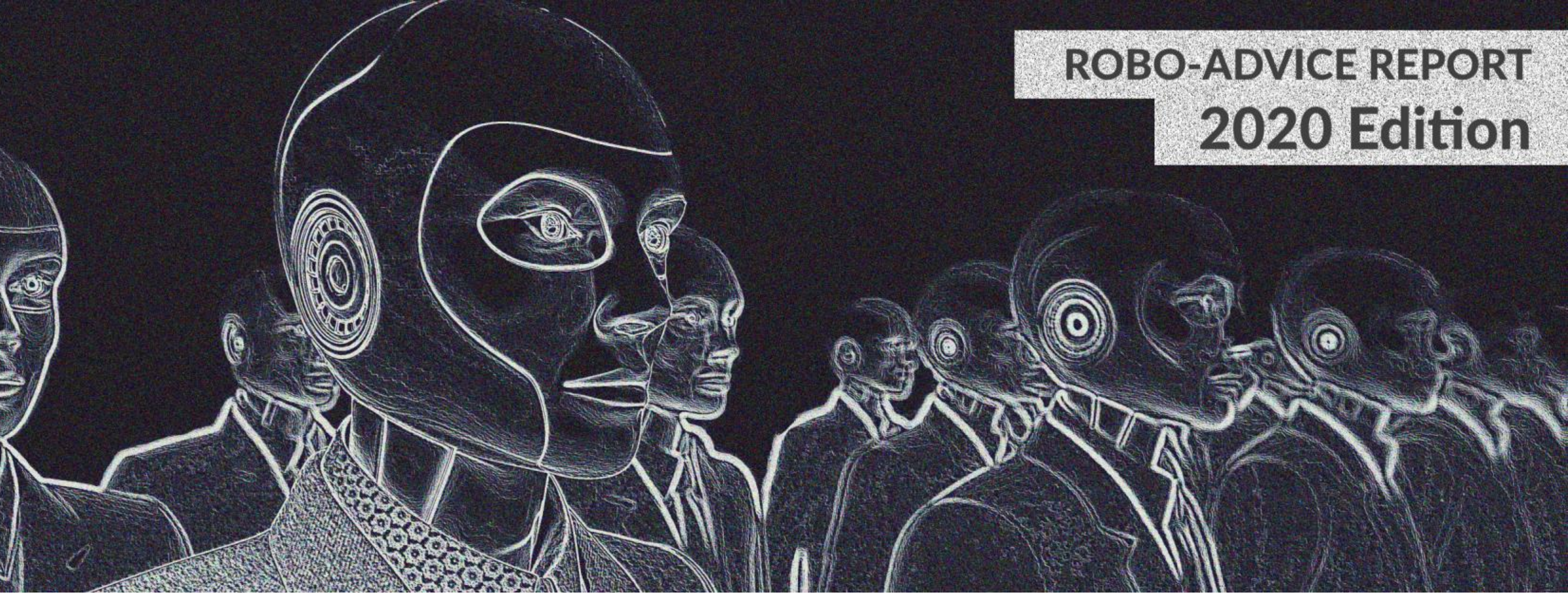
> "*Respondents who trust the European Union are more likely to invest in capital markets and diversify their savings*".[97]

The European Securities and Markets Authority ("**ESMA**") and the European Commission ("**EC**") have already taken action to improve the level of financial literacy of EU individual investors and their trust in capital markets.

In addition to these efforts, ESMA should consider coordinating a pan-EU investor protection awareness programme, aimed at informing "retail" investors of the sets of rights that protect them when seeking for advice and investing in capital markets and citing examples of successful enforcement cases. The programme would simply reassure "retail" investors that investment services are regulated and that they benefit from a good investor protection regime that is being enforced.

The programme could copy the successful project of the EC on passenger rights ("**Your Passenger Rights**") and duplicate the mobile application with simple, user-friendly interfaces and descriptions of the main rights EU citizens have when using investment services or investing in capital markets.

[97] Elisabeth Beckmann, Davide Salvatore Mare, 'Formal and Informal Household Savings: How Does Trust in Financial Institutions Influence the Choice of Saving Instruments?" (1 August 2017) https://mpra.ub.uni-muenchen.de/81141/1/MPRA_paper_81141.pdf.



"People need to know what their rights are!"[98]

However, such a campaign would not supplement adequate regulations and enforcement tools, public and private: it would merely complement the investor protection framework at EU level.

Investment Advice

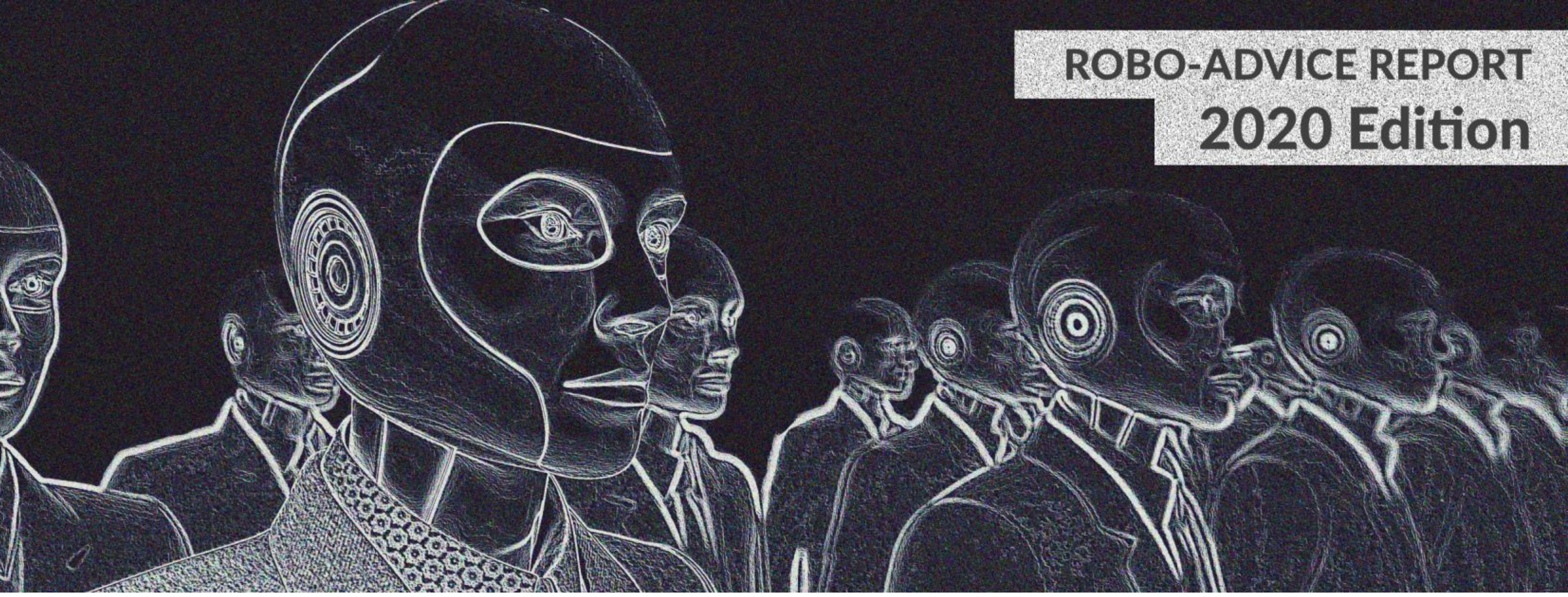
For the third time in a row, the findings our Robo-Advice report show that several platforms provide investment advice that seems inconsistent with the investor and risk profile of the mystery shoppers. In addition, the strong discrepancy in terms of investment gains and high dispersion of asset allocation for the same investor profile is concerning. This may stem from how the investor questionnaires are designed or how the background information of the mystery shoppers is analysed. Therefore, **ESMA should consider policy actions to improve such processes, such as developing more detailed guidelines on investor questionnaires, on asset allocations or risk profiles.**

For instance, ESMA could require investment advisors to use the same scale to measure the risk profile of the client and assign an equivalent portfolio. Such scale should not be new and could use the Committee of European Securities Regulators (CESR) Guidelines for the SRRI (UCITS KIID).

In addition, since there is lack of consistency as regards terminology BETTER FINANCE would like again to invite regulators and other interested stakeholders to agree on a standardised terminology, in particular on how to define concepts such as "investment advice", "personal recommendations", "product selling", "guidance", "planning", "fee-only", "fee-based" and "commission-based".

In addition, the MiFID II framework should be much clearer regarding investment advice and the necessary disclosures to clients or potential clients. In light of these technological developments and the change from "traditional" advice processes, the definition of "investment advice" comprised in Art. 4(1)(4) MiFID II should be amended to specify exactly when a recommendation is considered "advice", what "personal" means, and what criteria are attached to it. Second, the provisions of Art. 24 MiFID II regarding the disclosure of independent/non-independent advice should be amended to make it clear: (i) when exactly, in what format and medium, can an investment firm be considered to fulfil its disclosure obligations: the "provision in good time" is not sufficient and may allow the circumvention of the obligations enshrined in Art. 24; (ii) the implementing provisions of Art. 52 and Art. 53 of MiFID II DR should be amended as to specify that the disclosures related to investment advice must be separate from other disclosures (i.e. should not be put together with the policies on conflicts of interest as per

[98] European Commission, *Passenger Rights Campaign* (ec.europa.eu, accessed 2 November 2020) available at: https://ec.europa.eu/transport/themes/passengers/campaign_en.



Art. 16(3) MiFID II), should be clearly distinguishable and prominently shown to clients or potential clients, in the same manner as the cost, risk and performance requirements are to be made pursuant to Art. 44 MiFID II DR.

Human centric Artificial Intelligence (AI)

If on the one hand, the use of algorithm and Artificial Intelligence (AI) and automated decision-making (ADM) produce several advantages as increased accuracy, speed and reduced costs, on the other hand the risk associated with these new technologies can create financial and non-financial damages to consumers. The use of these technologies in finance without meaningful human control and oversight can trigger significant loss of transparency, accountability and arbitrary discrimination (as in the use of AI and ADM in the insurance). These risks could further undermine EU citizens low trust in the financial system and financial services. The element of trust is also underlined in the general comments of the *the Draft Report with recommendations to the Commission on Digital Finance*[99] in the context of ensuring that operators, consumers and supervisors are able to have confidence in digital finance.

In order to regain the trust of consumers and financial service users the Commission should:

- propose a legislative framework for AI-powered automated decision making (ADM) to ensure that they are fair, transparent and accountable to consumers and do not harm EU citizens' fundamental rights.[100]
- undertake an in-depth fitness check of all relevant EU legislation in the insurance and financial sector in order to propose legislative updates where necessary.

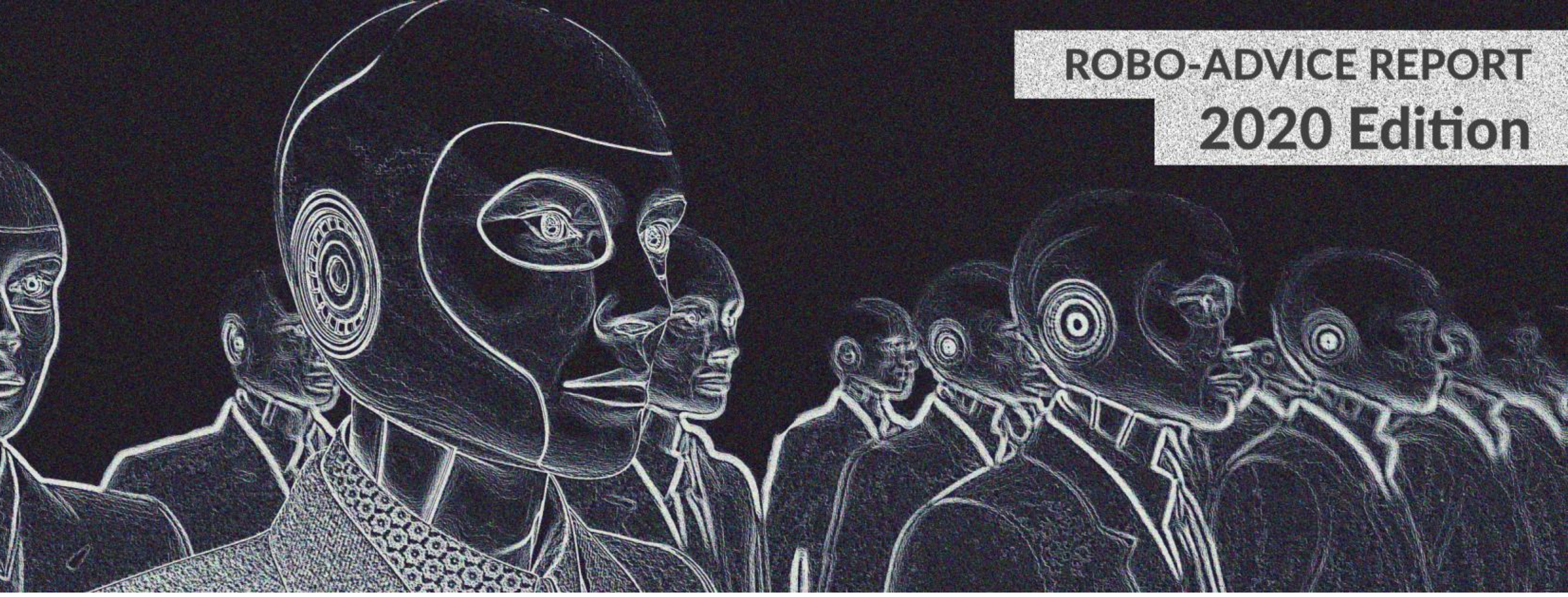
For example, specific rules should be also developed to address the pricing problem in the insurance sector. The use of algorithm may generate substantial risks to consumer as discrimination or unfair practices. Some group of customers may be directly excluded by the algorithm being determined as too risky (too costly).

Actual cost, risk and performance disclosure

Once more, the investment recommendations display very high divergences in return estimations, which can be misleading. EU law should require investment advisors to present the main characteristics

[99] Report of the Economic and Monetary Affairs Committee (ECON) on Digital Finance: Emerging Risks in Crypto-assets - Regulatory and Supervisory Challenges in the Area of Financial Services, Institutions and Markets, https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2020/2034(INL)&l=en.

[100] BETTER FINANCE is a contributor of the Human-Centric Digital Manifesto for Europe, How the digital transformation can serve the public interest (September 2019): https://www.beuc.eu/publications/beuc-x-2019-053-a-human-centric-digital-manifesto-for-europe.pdf



of the advice (risk, fees, past performance of the portfolio) in a way similar to that of the current UCITS KIID.

Such disclosure is all the more important as – probably – in one-year time the UCITS KIID disclosure regime, which is actual and accurate, may disappear and be replaced with the PRIIPs KID regime.

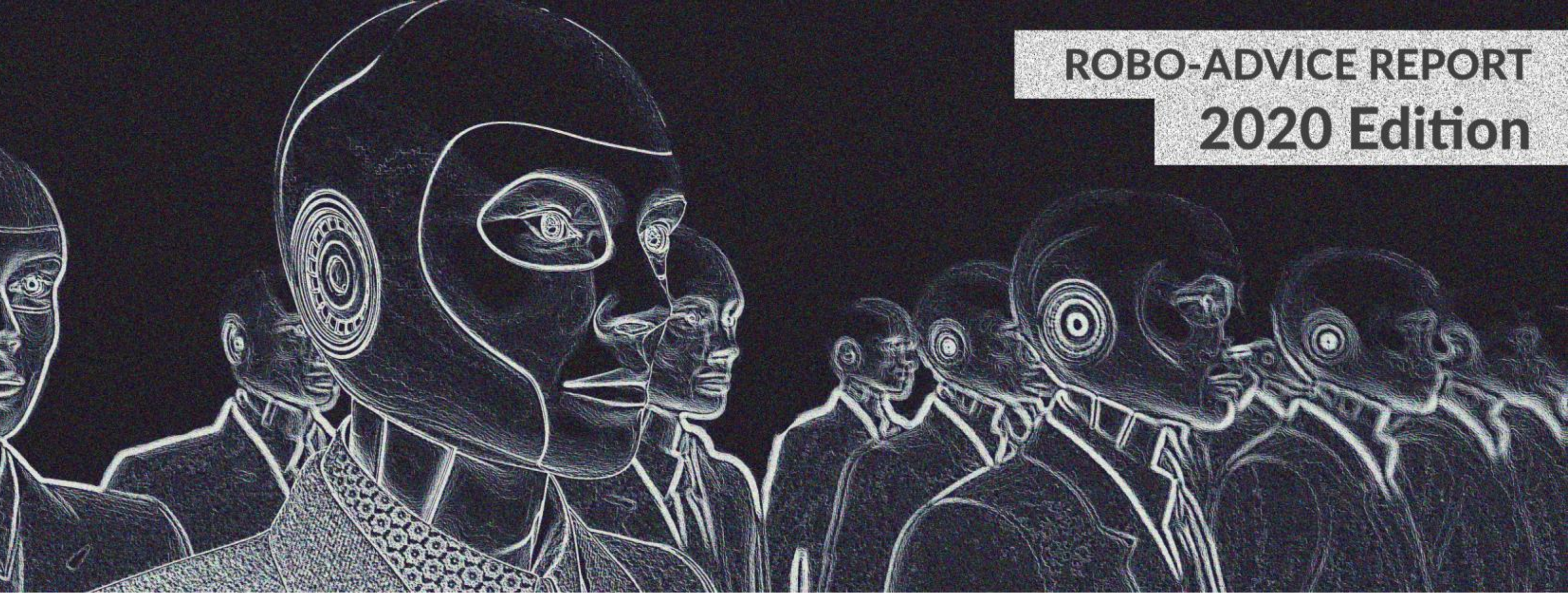
Through the disruptive power of FinTech, market inefficiencies can be addressed and more diversification, including alternative providers, can be brought in a quite oligopolistic market. The EU Commission should consider the following initiatives for EU financial service users:

- **Establishing independent savings products data bases which imply standardized Key Information on actual costs, performances and risks** ("garbage in garbage out").
- These independent data bases (ideally designed and operated by EU and national supervisors) will enable in turn the development of **independent web comparative tools** that would allow and facilitate the comparison of – and choice between different investment products; such as what has been achieved by the Norwegian platform FinansPortalen (now many web comparing tools feed on this Portal).
- **Rethinking mandatory disclosure documents like KIID for online/ smart phone adaptation**, for example using drawdowns for more detailed information.
- **Enabling individual shareholder engagement within the EU by voting or giving power to a proxy with one's smartphone**. At the moment, the voting process is monopolized by financial intermediaries. Such a platform would facilitate access and exercising voting rights for individual shareholders. These recommendations have also been discussed at the "HLF CMU", which released its report on 10 June 2020.

Simplicity and Comparability

Robo-advice platforms still deal with products and services that require clients to be relatively financially literate to really understand the value of their offers. Unfortunately, as proven by the European Authorities' reports on cost and past performance, long-term retail savings are the only EU consumer products for which consumers and Public Supervisors not only don't have a clue as to their future performance, but they don't even know what their past performance has been[101]. Therefore, BETTER FINANCE again calls on EU Authorities to fulfil their legal duty to promote **simplicity** and transparency of investment products.

[101] See BETTER FINANCE's press release and assessment of ESAs reports on cost and past performance.

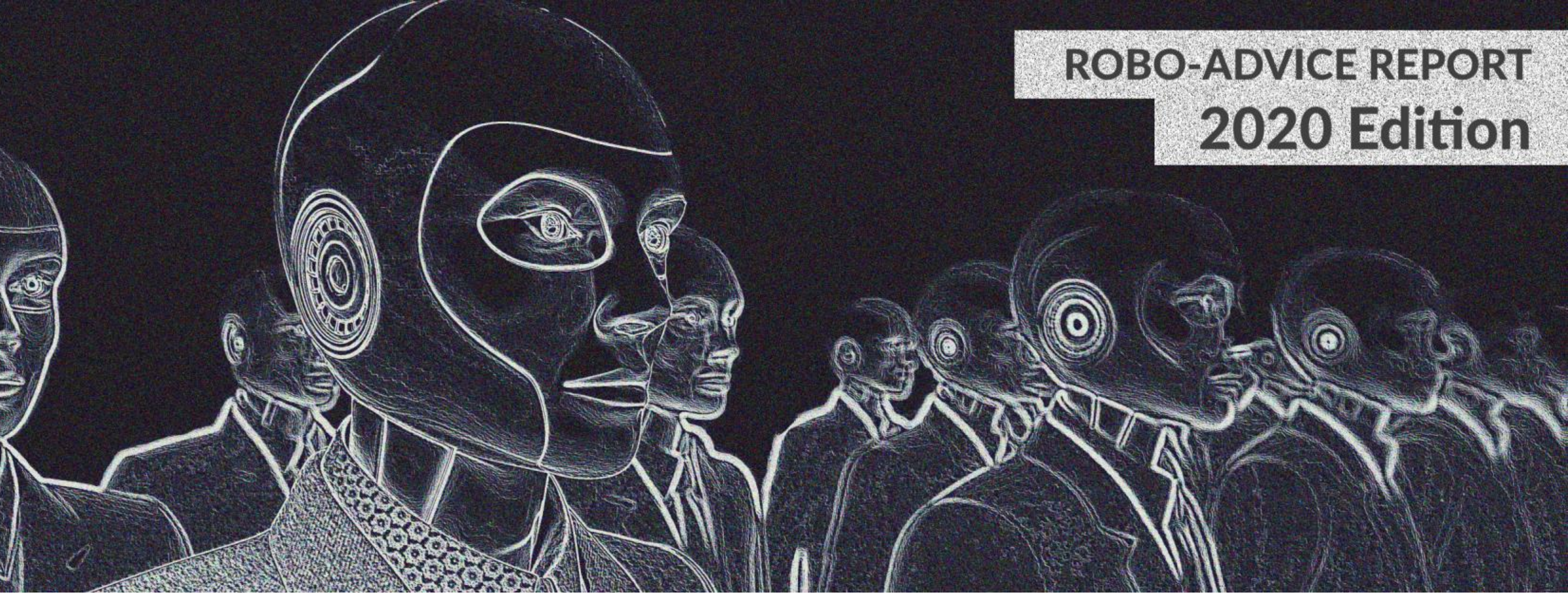


- Moreover, in light of our findings on the very diverging results for one and the same investor profile on different providers, it is clear that EU citizens are in dire need of **comparable information** on investment products, including past performances relative to the objectives of the providers (their "benchmarks"), and on costs. In our view this information should be accessible via **independent web-based comparison tools for retail investments**. Therefore, BETTER FINANCE is pleased to see that the Commission, as pleaded by us, followed up on their "Consumer Financial Services Action Plan"[102] released in 2017 and went beyond the non-binding "Key Principles for Comparison Tools". In 2018 the EC not only released a tender to scrutinise options for development of online tools and services supporting retail investors in investment decisions[103], but also involved user side organisations in the process. BETTER FINANCE was also contributing as an expert to this important work stream, since the current difficulties in comparing investment products constitutes a major challenge for EU citizens as long-term savers, for the Capital Markets Union initiative, for the EU economy and for the adequacy of our pensions. The final study[104] identified a couple of existing comparison platforms, which are however either payable, incomplete, or created by the industry (they lack transparency or independence). It also recommended that the new tool, which should be managed by a single public authority, should first rely on regulatory reporting documents, i.e. the unified PRIIPs KID and set out the technical requirements for a comparative database.

Sustainable Investing

In the last decade, the increased importance given to environmental considerations and social responsibility by retail investors, has generated strong incentives for producers to market products as sustainable, establishing specific standards, compliance rules and criteria. As in other industries, the financial sector has seen a significant increase of sustainable financial products, consequently requiring different methodologies on which to build the composition of these products. The main problem with this approach is the fragmentation and the complexity of this market, which does not allow for consumers to fully understand to what extent the product there are buying is actually sustainable or has an environmental and/or societal impact. Due to lack of information, the average investor struggles to understand the difference between a **Socially Responsible investment (SRI)**, **ESG investment** or an **impact investment**. Therefore, the lack of information and awareness could mislead the investors to invest in sustainable products that are not in line with their needs. Robo-advisors can be an important tool to address this, by facilitating access to this market for investors with social and environmental

[102] The EC's Financial Services Action Plan https://ec.europa.eu/info/publications/consumer-financial-services-action-plan_en
[103] Tender FISMA/2017/117(05)/C https://etendering.ted.europa.eu/cft/cft-display.html?cftId=3823
[104] European Commission, *Study on Options for Development of Online Tools and Services Supporting Retail Investors in Investment Decisions* available at: https://op.europa.eu/en/publication-detail/-/publication/74844f7c-cbc7-11ea-adf7-01aa75ed71a1/language-en/format-PDF/source-140558169.



preferences and by addressing the lack of awareness. Therefore, Robo-advisors that proposes sustainable investments to their clients need to comply with the future sustainable finance legislation for what concerns the disclosure of sustainable information.

The EU commission is working on the possibility to introduce obligations for financial advisors to ask their clients for their potential sustainability preferences. If these new rules will be implemented, Robo-advisors (as traditional advisors) that provide sustainable investment advice and/or investment services will need to adapt their questionnaire according to the *Commission Delegated Regulation (EU) …/... of XXX amending Delegated Regulation (EU) 2017/565 as regards the integration of Environmental, Social and Governance (ESG) considerations and preferences into the investment advice and portfolio management.*[105]

This amendment would be extremely necessary to address the issue of lack of sustainable preferences' assessment. At the moment, as observed in this research none of the platforms that propose sustainable portfolio ask specific questions on the sustainability preferences of their clients.

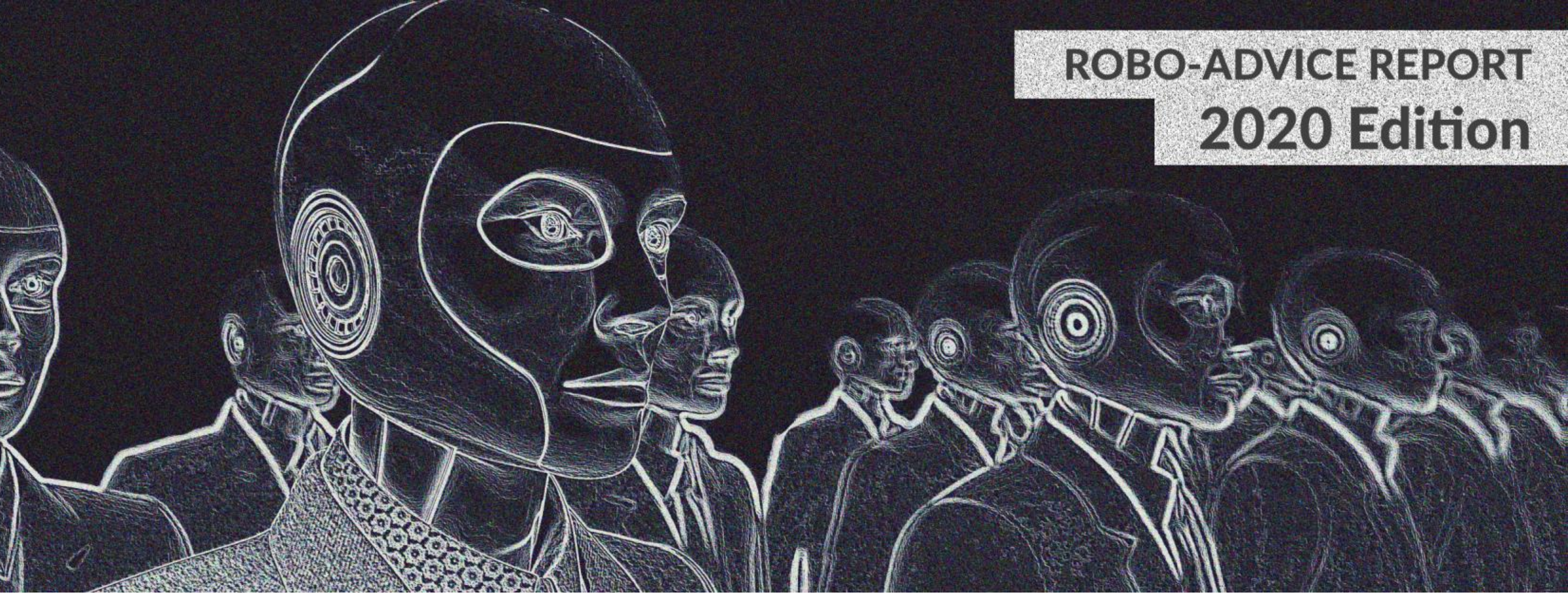
The draft delegated act enounces: *"Investment firms that provide investment advice and portfolio management should be able to recommend suitable products to their clients and should therefore be able to ask questions to identify the client's individual sustainability preferences. (…)* ***investment firms providing investment advice should first assess the investor's' investment objectives, time horizon and individual circumstances, before asking their clients for their potential sustainability preferences"***[106]

Therefore, it is extremely important that also European Robo-advisors will adapt to the new legislative as traditional advisors in order to ask specific questions to identify the client's individual sustainability preferences. For instance, a growing number of consumer surveys[107] suggest that majority of individual

[105]The final legislation is not adopted yet and it will be subjected to the European Parliament and Council objection period : https://ec.europa.eu/finance/docs/level-2-measures/mifid-delegated-act-2018_en.pdf

[106] Commission Delegated Regulation (EU) amending Delegated Regulation (EU) 2017/565 as regards the integration of sustainability factors, risks and preferences into certain organisational requirements and operating conditions for investment firms, available at: https://op.europa.eu/en/publication-detail/-/publication/eca5a11d-a98a-11ea-bb7a-01aa75ed71a1/language-en

[107] EU High-Level Expert Group on Sustainable Finance., 'Financing A Sustainable Economy: Final Report' (2017),27, available at: https://ec.europa.eu/info/sites/info/files/180131-sustainable-finance-final-report_en.pdf; Morgan Stanley, 'Sustainable Signals: New Data from the Individual Investor' (2017) Morgan Stanley Institute for Sustainable Investing, available at: https://www.morganstanley.com/pub/content/dam/msdotcom/ideas/sustainable-signals/pdf/Sustainable_Signals_Whitepaper.pdf; Schroders, 'Global Investor Study: Global Perspectives on Sustainable Investing' (2017) available at: https://www.schroders.com/en/sysglobalassets/digital/insights/2017/pdf/global-investor-study-2017/schroders_report_sustainable-investing_final.pdf; Wisdom Council, 'Press Release: 8 out of 10 Investors Are Open to Responsible Investing but Jargon is A Major Barrier' (2017), Insights: responsible investing, available at: https://www.thewisdomcouncil.com/responsible-investing/; Robert G. Eccles, Mirtha D. Kastrapeli, 'The Investing Enlightenment: How Principle and Pragmatism Can Create Sustainable Value through ESG' (2017) State Street Global Advisors, available at: https://arabesque.com/research/Final_The_Investing_Enlightenment.pdf; 2i Investing Initiative, 'A large



investors (60 to 80%) have ‘environmental objectives. However, as observed in this research none of the platforms that propose sustainable portfolio ask specific questions on the sustainability preferences of the clients. Therefore, it is impossible for the platform to provide a suitable investment advice in terms of sustainable characteristics.

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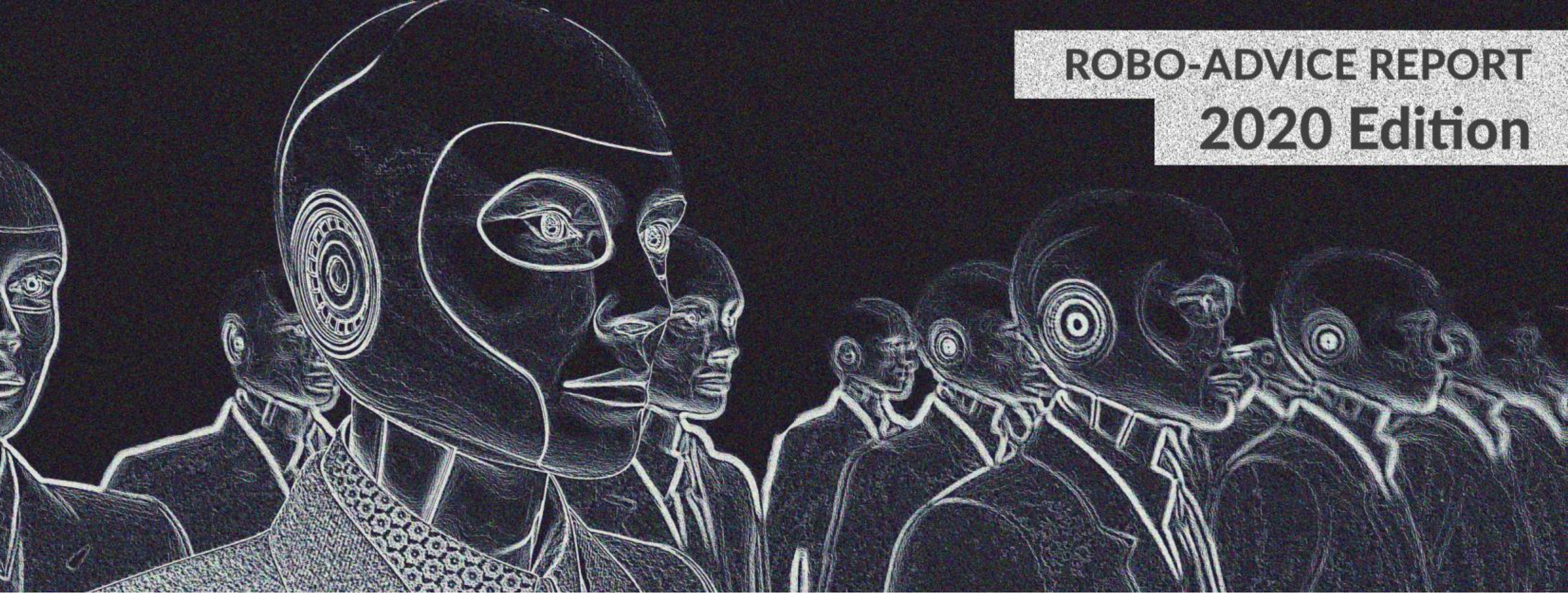

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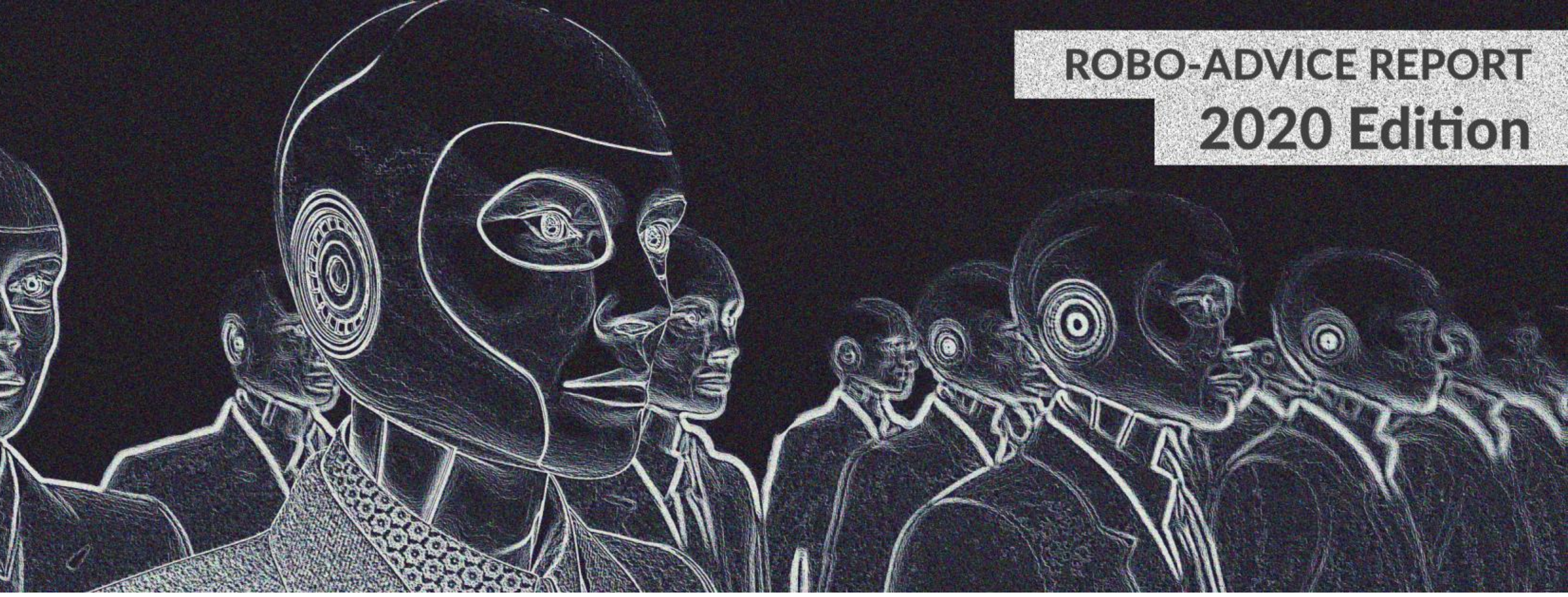

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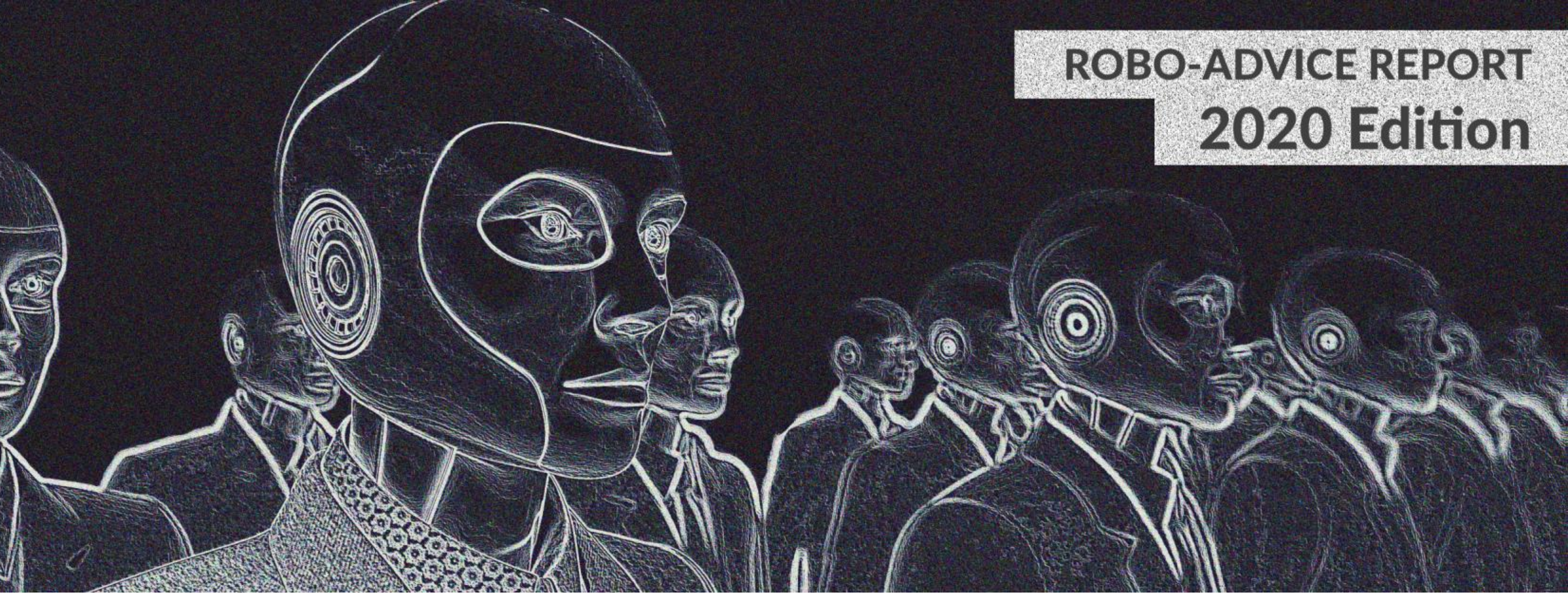

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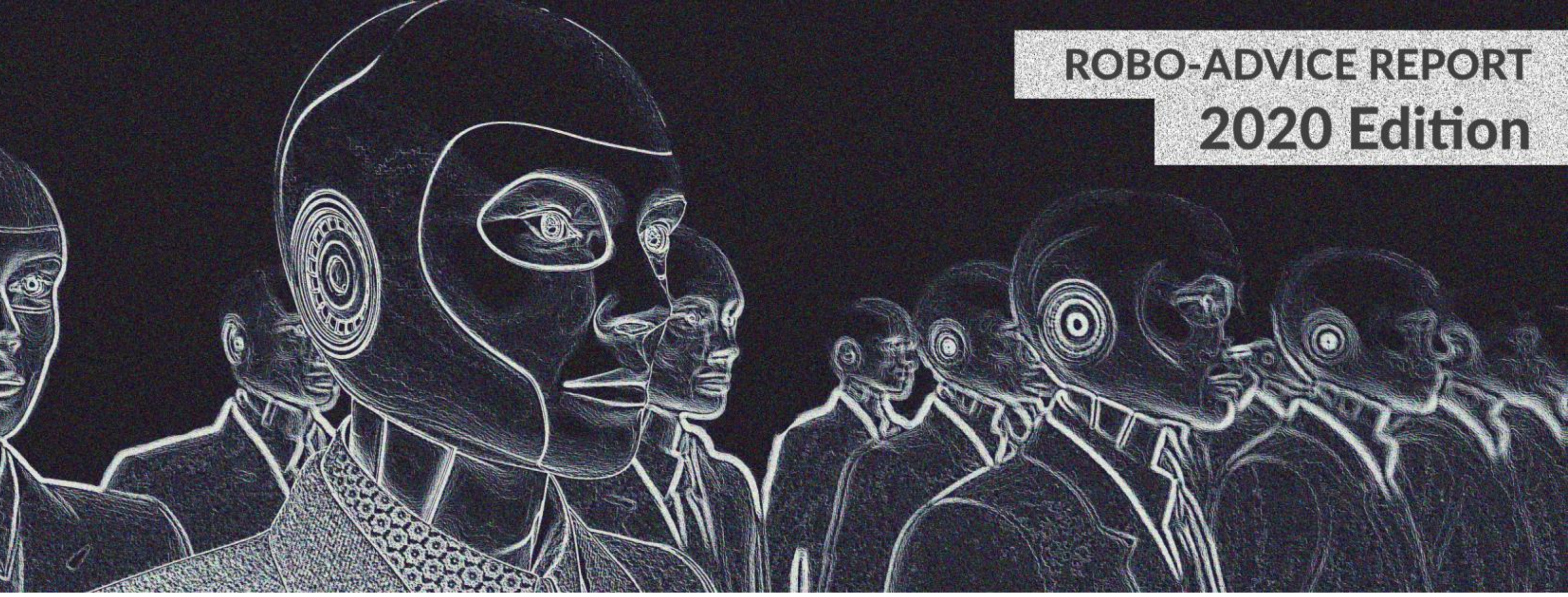

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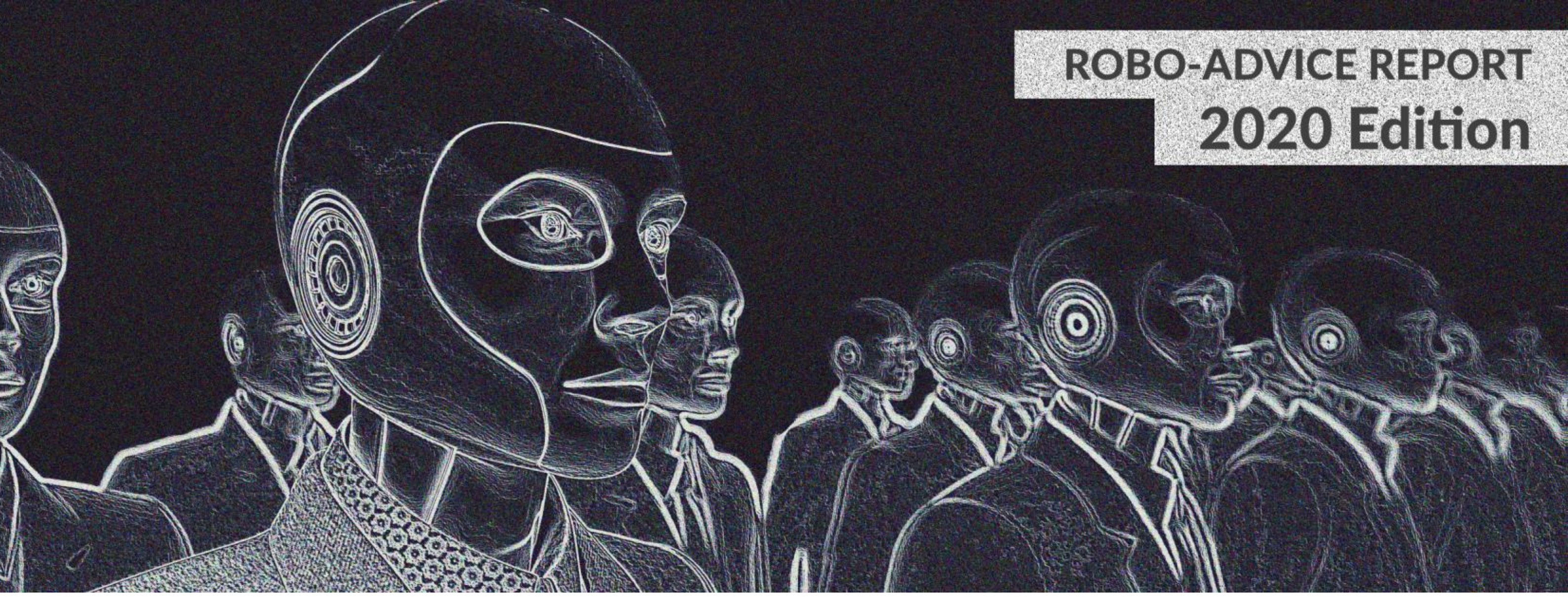

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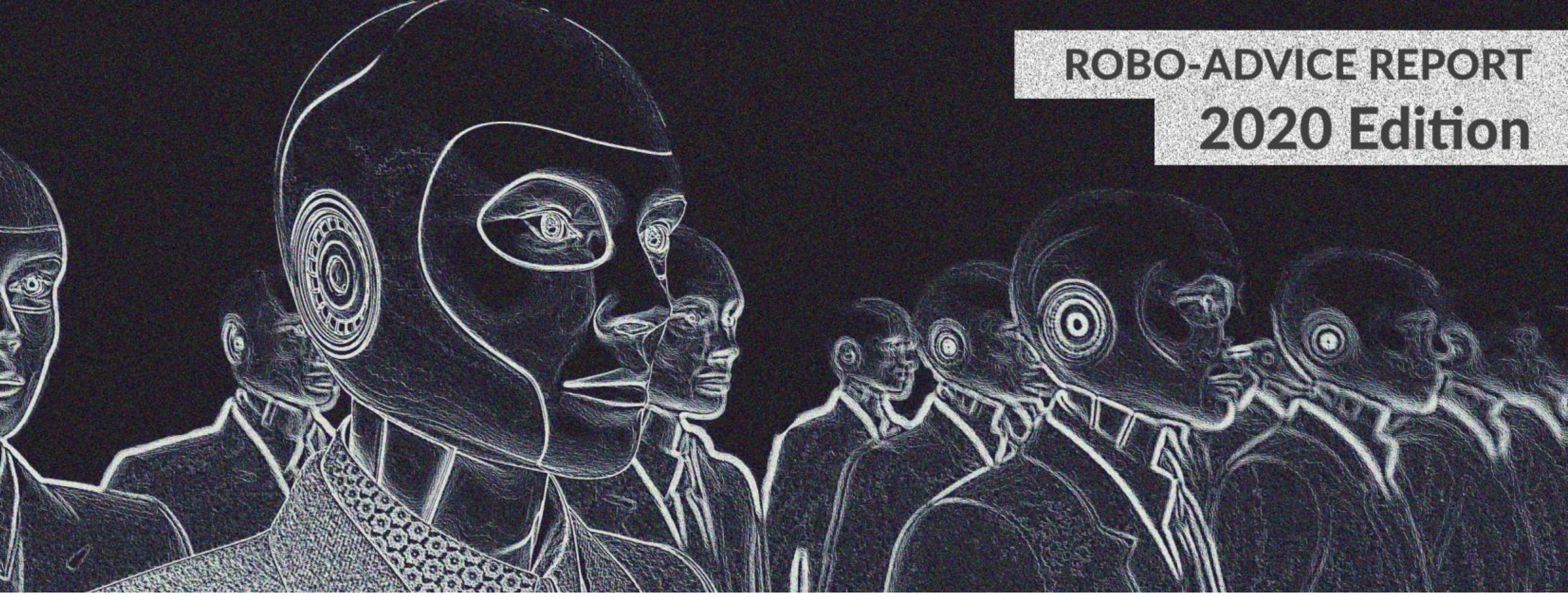

ANNEX I

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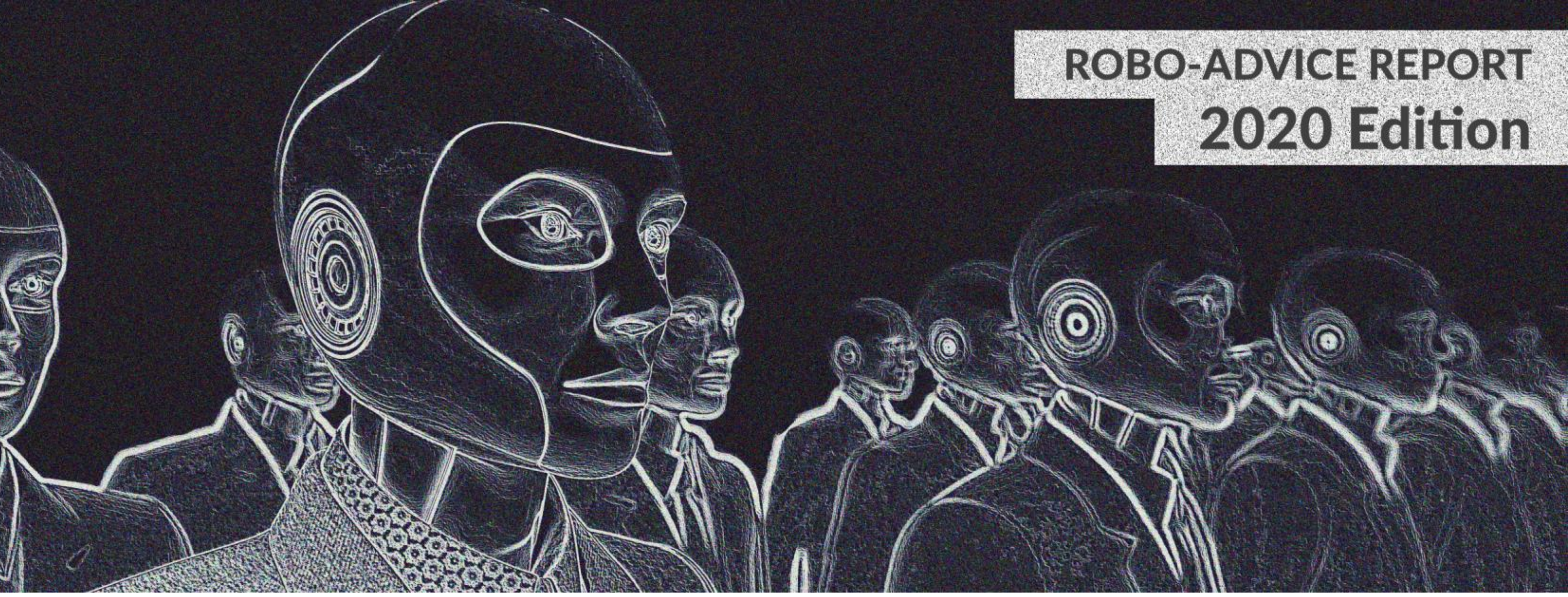

ANNEX II

About the Orange Envelope

https://www.oranzovaobalka.sk/web/en/

The Orange Envelope (in Slovak, "Oranžová obálka") is the operator of the web portal on the domain "oranzovaobalka.sk" and related web portals, and is a civic association, with its registered office at: Závada 71, 99121 Závada, Slovak Republic, ID 52446841, registered by the Ministry of the Interior of the Slovak Republic under number: VVS / 1-900 / 90-56703.

Contact: info@oranzovaobalka.sk.

The Orange Envelope is a non-profit, non-partisan, voluntary interest association of natural and legal persons operating in the field of financial literacy, education and professional support of members in the field of pension, savings and investment schemes, financial products, financial markets, personal finance management and wealth management. The Orange Envelope is an independent legal entity that can acquire rights and obligations on its behalf. The scope of the Orange Envelope is defined by the Articles of Association.

The goal of the Orange Envelope is the implementation of research and development, support and development of scientific research and educational activities at the national and international level in the field of financial literacy, pensions, savings, investing, personal finance management, wealth management, asset management and trading in global financial markets. The Orange Envelope will carry out research, development, publication, educational and consulting activities in order to support scientific research activities and the development of education in the field and to develop activities aimed at increasing the expertise and educational level of members in the field.

The mission of the Orange Envelope is to provide professional, technical, legal, material and other facilities for the development and support of its members and the general public in increasing their financial literacy, theoretical and practical professionalism, expertise and erudition in creating strategies, operational steps and decisions in pension provision, savings, investing, personal finance management, wealth management, asset management and trading on global financial markets.

The researchers behind the Orange Envelope, and the relevant publications, can be found at: https://www.oranzovaobalka.sk/web/en/vyskum.

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