ROBO-ADVISORS: Breaking Barriers of Traditional Advice

2022 EDITION

BETTER FINANCE

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

ROBO-ADVISORS: BREAKING BARRIERS OF TRADITIONAL ADVICE

A RESEARCH REPORT BY BETTER FINANCE

2022 | SEVENTH EDITION

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EXECUTIVE SUMMARY

Fees[1]

European Robo-advisors:

fees vary between 0.48% (UK) or 0.51% (EU) and 1.65%

| Much lower than traditional retail investment distributors.

Non-European Robo-advisors:

fees vary between 0.36% and 1.03% (US, Australia and Singapore)

Divergences in risk profiles, portfolio composition and expected returns

- Annual growth rates vary from 1.90% to 7.28 % (Millennial), and from 1.47% to 7.12% (Baby Boomer).
- 3 out of 16 Robo-advisors feature a standard risk scale (*SRRI from 1 to 7*)
- Millennial: Robo-advisors propose investments ranging from very low risk (2/7) to "*medium" or "high"* risk ('3/3').
- Baby Boomer: Robo-advisors propose anything between "*safety-oriented"* investments or "low" risk ones to rather risky portfolios ('8/10').

Transparency

- Majority | 7 out of 11 EU Robo-advisors clearly disclose a risk level with the advised strategy.
- Majority | 9 out of 16 of Robo-advisors disclose past performance.
- All 16 Robo-advisors provide a basic intuitive representation of the portfolio composition.

BETTER FINANCE continued its research series into *Robo-advice* with this seventh annual edition, mapping a sample of platforms that provide online Robo-advisory investing services, by analysing their (automated) advice process in terms of transparency, costs, portfolio composition, suitability and sustainability options and preferences for the client. This edition's analysis focuses on Robo-advisors' ability to deliver independent, bias-free advice and break the quasi-monopoly of the inducement-based[2] ('non-independent') distribution model in most EU countries. The report covers a sample of 16 platforms in 10 countries across Europe, Australia, the USA and Singapore.

Our mystery shopping exercise once again yielded interesting results:

• Fees: The success of the Robo-advice concept hinges on its ability to keep costs low. In this respect, platforms do not fall short as they continue to be far less expensive than the equivalent services provided by more traditional players such as banks, traditional financial advisors and insurers. Robo-advisors maintained their competitiveness over the years with some platforms even lowering their fees in 2022.

• Asset allocation: algorithms continue to generate concerning divergences in expected returns, asset allocation and associated risk between platforms for the same investor profile. However, this issue is not specific to this category of retail distributor. Traditional ones also have divergent stock allocations by profile and often use algorithms.

In instances, a balanced risk-reward profile composed of about 50% equities, is expected to yield almost as much as a portfolio with 0% of its capital invested in equities.[3] In other cases, we observed slight improvements in terms of featured equity/risk/expected returns adequacy. However, the suitability of the offer (based on our generic profiling recommendation) of the equity portfolio has not improved across most platforms as we observe an overall stagnation over the years.

• Transparency: the combined score of a group of Robo-advisors per category (Fees, Portfolio, Risk and Past Performance) from 2018 to 2022 reveals that online advisors are not improving their scores. Although transparency of information (disclosure) on fees usually clear in 2022, transparency with regard to past performance continues to be the worst-performing indicator. As regard the advice recommended (under MiFID II rules), 10 out of 11 EU-based Robo-advisor disclose their independence.

• Conflicts of interests: according to the information disclosed on Robo-advisors' websites in scope, their business models do not rely on "inducements". However, one platform alluded to a *possibility* of selecting such products but assured that any compensation would be fully passed on to the customer, whereas another one does not disclose any information on independence nor inducements.

[1] Based on our selection of independent and openly accessible Robo-advisors.
[2] 'inducements" refer mostly to sales commissions paid by investment product providers to distributors.
[3] Another study focusing on Robo-advisors located in Germany revealed similar findings regarding divergences between asset allocation and expected performance of the investment advice. The study reveals that similar portfolio allocations composed of 50% equities and 50% bonds usually yield substantial differences in terms of performances.

- 1 EU-based Robo-advisor does not properly disclose if it delivers 'independent advice'.

Suitability

- Robo-advisors are mostly offering low-cost index funds, potentially allowing better value for money (contrary to traditional distributors often selling more expensive underperforming products over mid and long term).
- Suitability of the questionnaire: only 2 platforms have a high score in assessing the financial literacy of the client.

Sustainability

- Sustainability preferences: 2 (EU) platforms offer a comprehensive sustainability approach and options.
- 12 out 16 Robo Advisors provide investment options labelled as sustainable
- 9 out 11 EU-based platforms feature such sustainable investment options; of which 5 obtain a low score.

Overall, Robo-advisors are for the most part considered "fee-only". In this sense, most Robo-advisors are deemed to deliver independent investment advice,[4] thereby eliminating issues of bias and "conflict of interest" in the retail distribution chain.

- Suitability: This report also re-assesses the suitability of the questionnaires used by the different Robo-advisors. A recurring concern is that individual investors are often asked very few questions about their personal situation due to the streamlining of processes.

The research also investigated the suitability of the investment recommendations. In terms of performance, most investments recommended are in low-cost diversified index funds, yielding better returns over time than the average "active" retail funds advised by traditional, non-independent advisors. In terms of diversification, all platforms propose fairly diversified portfolios according to our methodology (*see Annex I - methodology*).

- Sustainability: The sustainability preferences for potential clients are now a legal component of the suitability assessment. In 2022, it appears that all EU platforms indeed attempt to determine the sustainability preferences of their clients, but to a limited extent. Most often, they recommend that clients retake the questionnaire in order to comply with their (limited) sustainable portfolio offer, if any.

Whilst 12 out of 16 Robo Advisors provide investment options labelled as 'sustainable', 2 Robo-advisors allow for comprehensive information and questioning, offering a choice between a range of thematic options to be selected.

Interestingly, the 3 non-EU platforms' sustainability integration, however limited, matches 5 of European Robo Advisors' level of sustainability performance, where one non-EU platform even outperforms the 5 European counterparts under scope.

Finally, reflecting on previous year's findings, none of the Robo-advisors provide more specific details on the sustainable investment strategy and the approach taken (such as integration, exclusion, engagement, or impact). The assessment of suitability and sustainability seems to be a perfunctory "tick-the-box" exercise, most likely leading to a discrepancy with clients' expectations.

[4] In the sense of MiFID II, a financial advisor must disclose its independence (and whether it receives inducements for selling a product). See also, 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.

Policy Recommendations

Raise awareness of investor protection regimes

The European Securities and Markets Authority (ESMA) and the European Commission (EC) have already taken action to improve the trust in capital markets of individual, retail investor in the European Union (EU).

The European supervisory authorities (ESAs) 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 advice and investing in capital markets and citing examples of successful enforcement cases.

Investment Advice

The EC should consider adopting the Committee of European Securities Regulators' (CESR) Guidelines on investment advice under the MiFID II Delegated Regulation (EU) 2017/565, in particular to clarify that:

- both explicit and implicit advice fall under the scope of Arts. 4(1)(4), 24(1), 24(7) and 25(1).
- implicit advice can take the form of either actions or behaviour, including written and oral communications, which by their purpose or reasonable impression, amount to investment advice.
- practices meant to circumvent the rules applicable to investment advice will face a ban and sanctions.

The European Commission should harmonise the definition and applicable rules for financial advice across all EU categories of retail financial products.

"Bias-free advice"

To progress towards the EU Commission's stated goal of ensuring "bias-free advice"[5] and create a level-playing field for the few investment market participants that strive to offer such real – non-conflicted – advice to retail investors, the European Commission should also:

- Harmonise the EU regulatory framework across all categories of retail investment products (a stated objective of the CMU Action Plan as well)
- Ban inducements on execution-only services
- Clarify and specify existing 'Value for Money' rules

[5] See the European commission (EC) 'Capital markets union 2020 action plan': A capital markets union (CMU) for people and businesses, September 2020, https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/capital-markets-union/capital-markets-union-2020-action-plan_en

Actual cost, risk, and performance disclosure

The EU Commission should consider the following initiatives for EU financial services users:

- Revise the PRIIPs KID (packaged retail investment products 'Key Information Document') to meet another EC CMU Action Plan objective: ensuring relevant intelligible, comparable, short key product information, including actual costs, actual (past and future) long-term performances (compared to the provider's investment objectives) and risks.
- Independent savings products databases requiring standardised KID (Key investor information document) for all retail investment products; like in Norway (FinansPortal).

  Such a database should also include past and past and future performance, enabling for and evaluation of the products' investment objectives against that of clients.
- Independent web comparison tools for investments services should be fostered at supervisory level, building on a central database.
- Implement the standardisation of digital disclosure for financial advisors, also online: rethinking by standardising mandatory information and disclosure documents provided to client, notably in light of a digitally fit KID; and adapt existing rules to the digital age (online, via smartphones) by assessing practices of layered information.
- Enabling individual investors' engagement within the EU: facilitating voting, giving power to a proxy through one's smartphone and requiring fund managers to collect and take client's preferences into account (also through an independent third party).

Sustainable Investing

Retail investment advisors – whether Robo, automated or not – should be very careful regarding greenwashing risks, and highlight that among the sustainable investment approaches, the "negative screening" one has proven one of the least effective, contrary to "engagement" that is one of the most effective one to address ESG issues[6].

ESMA's reviewed guidelines on suitability requirements, and by extension sustainability preferences, provide some granularity, but lack rigorous templates to ensure that financial advisors ask comprehensive questions to their clients.

Platforms lack clear definitions of sustainability terms, despite ESMA's guide and efforts in asking firms to adopt a neutral and unbiased approach when explaining those. One of the main issues with ESMA's latest guidelines derive from how combinations of sustainability preferences are treated. If for example a client expresses a combination of sustainability preferences, Robo- and other advisors can interpret as sufficient meeting at least one of the sustainability preferences.

Reputational risk (i.e., of 'greenwashing') may discourage Robo- and other Advisors from providing sustainable portfolios. Market participants are still grappling with how to implement ESG classification and use the Taxonomy in a proper manner for investment purposes. Supervisors must therefore assume a key role in enabling the uptake of sustainable portfolios by facilitating compliance (with clear rules and guidelines), minimise greenwashing risks and enforcing it in order to ensure a high level of investor protection

[6] See 2°Investment Initiative, "Shifting the Trillions | Why will private investors play a key role?", https://betterfinance.eu/publication/shifting-the-trillions-why-will-private-investors-play-a-key-role/.

Simplicity and Comparability

Robo-advice platforms deal with products and services that require clients to be relatively financially literate. Unfortunately, as shown by ESAs' reports on cost and past performance, long-term retail savings are the only EU consumer products for which consumers and supervisors are 'in the dark'.

For this reason, BETTER FINANCE once again calls on EU Authorities to fulfil their legal duty to promote simplicity, information to achieve better transparency of investment products.

Algorithm appropriateness and transparency

In view of the lack of transparency of algorithms used by Robo-advisors and the large divergences in asset allocation and expected returns – as revealed by our mystery shopping in in this report – we call the EU Commission, ESMA, EIOPA and EBA to undertake a compliance assessment of all retail investment advisors' algorithms with regard to their appropriateness and suitability for retail investors.

In addition, the tendency of investment advisors' websites to lock-in user data before displaying investment advice is a hindrance to the testing and evaluation of their algorithms. Therefore, we urge to ensure improved access and transparency to their evaluation process.

INTRODUCTION

BETTER FINANCE's annual research into online automated investment advice attempts to evaluate a sample of independent[7] providers of so-called *robo-advice* through mystery shopping, essentially asking whether this business model, originating from (but not limited to) the fintech industry, is an adequate and competitive alternative to traditional (human) financial advisors and insurers.

At the outset, several advantages and disadvantages were highlighted with regard to the choice of Robo-advisors to generate a personalised investment portfolio with reduced fees compared to traditional, in-person investment advice.:

Robo-advisors – An overview of the pros and cons of their operation model

Advantages	Disadvantages
• Non-conflicted advice: mostly independent platforms providing fee-based services by selecting funds without incentives and, in most cases, are less prone to 'biased' advice. • Automated guidance and easy to use: Robo-advisors invest for their clients and manage their portfolio automatically, in a rather simple way. The client's portfolio investment allocation is determined by their profile and is carried out through a user-friendly digital platform. • Unique access to low-cost diversified index funds, which usually overperform other retail funds over the mid- and long-term. • A very competitive cost: the automation of investment offers enables platforms to provide diversified portfolios with low management and transaction fees for clients. Robo-advisors mainly use underlying low-cost index-ETFs in their passive investing strategies. Overall fees rarely exceed 1% per year and are usually fixed. • Small start-up stake: clients can start investing with small amounts (ranging from 50€ to 5000 €, depending on the platform) • Flexibility on payment: usually clients have the option to start with a lump sum and/or opt for an (additional) monthly contribution. Additionally, the conversion of the investment into cash should be possible at any time, often at no transaction costs.	• Not decision-driven, not face-to-face: Apart from potential options (thematic or sustainable investments), the product offered stems from the platform's evaluation of one's profile. Clients are typically confined to 'consumer care' with little or no means of adjusting the investment offer, contrary to traditional human advisors offering more tailored services and offers. • Advising online products that are more and more complex can be challenging, despite the European supervisors failed mandate to promote simplicity. • Rigidity of investment: Besides potential and simple 'algorithmic rebalancing', Robo-advisors often do not anticipate market fluctuations. They do not reconfigure their portfolios (or only on an annual basis, in few examples). Robo-advisors act more like a passive index investment strategy where portfolio allocations and underlying strategies are rarely modified. Clients may be able to adapt portfolios upon request, but will be limited to the palette on offer, not tailored to one's individual choices.

[7] Here, we first refer to 'independent' as per investment firms with no ties to well-established, large financial institutions (incumbents) active in the field. One must distinguish between the own independence of a Robo-advisors, and its capacity to *act independently* / be independent towards clients (as intended in MiFID II), that is in delivering an investment advice with no 'inducements' perceived (i.e., not receiving and retaining commissions from a product manufacturer for recommending an investment product to a client).

How about safety? Robo-advisors are supervised by the competent financial authority of their place of operations. In the EU, only the *pending* cash/deposit is covered by the deposit protection scheme for up to 100 000€ at custodian bank level. What is invested is not guaranteed, and the capital remains at risk. However, any trackers or funds in which Robo-advisors have invested should remain the client's property. If a Robo-advisor were to cease operations (or go out of business), a transfer of assets to another securities account or another financial institution is possible.

BETTER FINANCE Robo-advice report

In our first edition from 2016, "*Robo-Advice" for Savings & Investments: A Misnomer with Real Potential Benefits*,[8] the research team selected six newly established and independent[9] Robo-advisors in the EU and another four in the US market to determine the main characteristics of these providers compared to traditional investment firms.

BETTER FINANCE confirmed these services to be attractive thanks to their much cheaper and fee-based (i.e. "bias-free", as the European Commission puts it) advice models: "*generally far simpler and more transparent fees from robo-investing are also much lower than fees charged by 'human' financial advisors or private bankers*",[10] where fees tend to decline over time, now ranging between 0.48% and 1.65% annually (fund and wrapper fees included) in the EU.

Most importantly, Robo-advisors were and keep offering overall cheaper services by using mainly low-cost, index-tracking UCITS ETFs (mostly capitalisation-based) in constituting portfolios. In the subsequent editions of the *Robo-advice* series, BETTER FINANCE expanded its analysis to determine how the advice provided by an automated platform compares with traditional advice services. To this end, BETTER FINANCE undertook a "mystery shopping" exercise, based on two hypothetical investors – the *millennial* and the *baby boomer* – and looked at key elements for retail financial services users:

- their transparency regarding fees, conflicts of interests, and investment proposition;
- the divergences, if any, in asset allocation (investment advice) and performance projections;
- the potential suitability of the default underlying investment supports offered;
- the sustainability options and alignment with client's preferences consideration.

Indeed this year, we have revised our suitability criteria to include a separate evaluation of sustainability preferences as a component of the existing MiFID II suitability assessment, which was implemented in August 2022.This early assessment was conducted between October-December 2022, allowing to identify best-practices in its early-stage implementation by the platforms covered.

Over the years, the robo-advice market has gained some traction in the EU, with the gradual launch of new providers and a larger market share in terms of the number of users and assets under management (AuM), although the uptake remains limited in the face of anticipated growth and compared to other regions such as the USA. In addition, the services provided also became more sophisticated and diversified over time, bringing new challenges to the evaluation. At the same time, ESMA issued additional guidance on the use of automated advice and investment platforms in retail financial services, which further consolidated this sector.[11] In 2022, ESMA issued its final report on certain aspects relating to retail investor protection, focussing on digital platforms, and where "*no need for regulatory changes was identified to specifically address the provision of services through robo-*

[8] Available at: https://betterfinance.eu/wp-content/uploads/publications/Robot_Advice_Research_Paper_FINAL.pdf.
BETTER FINANCE's subsequent (and previous) Robo-advice reports available at: https://betterfinance.eu.

[9] Note: Here, by "independent", BETTER FINANCE refers to the fact that the investment firms establishing the automated advice and investment platforms had no ties to well-established large financial institutions (incumbents) active in the field. Therefore, we limit our Robo advice assessment scope such 'independent' (from the industry) actors of online, automated investment advice.
*Actual independence of advice (non-conflicted), as per MiFID II refers to the fact the advisor acts independently by not retaining or receiving any commission ('inducements') from the product manufacturer (or distributor) for selling (offering/advising) such product – see the section of our report: 'ROBO-ADVISORS ARE LESS CONFLICTED THAN THE MAINSTREAM ONES' for an analysis.

[10] Ibid, p. 4.

[11] https://www.esma.europa.eu/document/guidelines-certain-aspects-mifid-ii-suitability-requirements-0.

advisers".[12] However, for BETTER FINANCE, there is room for improvement and not all issues have been adequately addressed, especially in the light of policy changes and their implementation with Robo- and other advisors' business models, where we highlight some shortcomings (sometimes long-standing: transparency and adequacy of algorithms in terms of asset allocation; see also our general policy recommendations and executive summary).

This year's 2022 report marks the seventh edition of BETTER FINANCE's research and mystery shopping exercise, with a selection of 16 providers: including 11 from the EU, and others from the UK, US, and Singaporean markets. The advantage of maintaining the geographic scope of the series is that it allows us to extend the data series and evaluate performance (in line with our criteria) over longer periods of time for a selection of Robo-advisors and observe whether improvements have been made. However, our coverage of Robo-advisors now tends to narrow (down two compared to last year) given that we cover those that are independent but also freely accessible (not requiring sensitive personal data). We therefore observe a slow but steady lock-in of platforms, which is reflected in our more limited sample, and we could not test new entrants, such as those operating 'in app' exclusively, for the same reasons. This also poses questions regarding transparency of the market and algorithm testing, which we address in our recommendations.

In parallel, we also believe that, due to developments triggered by the lockdown measures during the global health pandemic, Robo-advisors could become increasingly important actors on the financial services scene. But as is the case with most innovations, robo-advice comes with its own challenges and risks, reason why monitoring and supervision will remain key in the years to come. Meanwhile, some Robo-advisory platforms are also developing personal finance assessment as a value-added service for wealth management in order to build customer loyalty. However, this is a service that is unevenly represented among platforms, and our focus remains on the core business model: automated investment advice.

Almost 10 years after the advent of Robo-advisors in Europe, we have not (yet) observed a major paradigm shift in business models in the robo-advice market. Nevertheless, our subsequent reports remain important to identify upcoming trends and areas of improvement, while touching upon future considerations, also with regards to policy changes in the digital financial market in which Robo-advisors evolve.

The purpose of renewing this report over the years is not to evaluate proper compliance with the applicable legal frameworks (this can only be done by supervisory authorities on a case-by-case basis), nor to create a classification (*best* to *worst* in class). Rather, we keep track of the development of Robo-advisors, including the implementation of new regulations, and identify best practices and opportunities for improvement in automated investment advice. We believe that this financial services model holds great potential for retail investors.

Disclaimer:

The results of our "mystery shopping" exercise remain anonymous: while we provide the names of the Robo-advisors included in our sample for transparency reasons, we censor the names when displaying the scores received by each platform on the various indicators of the analysis. This anonymisation of the results is necessary to avoid building any ranking that could (dis)advantage certain platforms in our sample or give the impression of a recommendation. In no way the results of our mystery shopping should be interpreted as an evaluation of Robo-advisor' investment performance: our goal is to test these platforms from the perspective of the layman investor by use of our own methodology.

[12] ESMA, April 2022, "Final Report On the European Commission mandate on certain aspects relating to retail investor protection" https://www.esma.europa.eu/sites/default/files/library/esma35-42-1227_final_report_on_technical_advice_on_ec_retail_investments_strategy.pdf.

THE ROBO-ADVICE MARKET

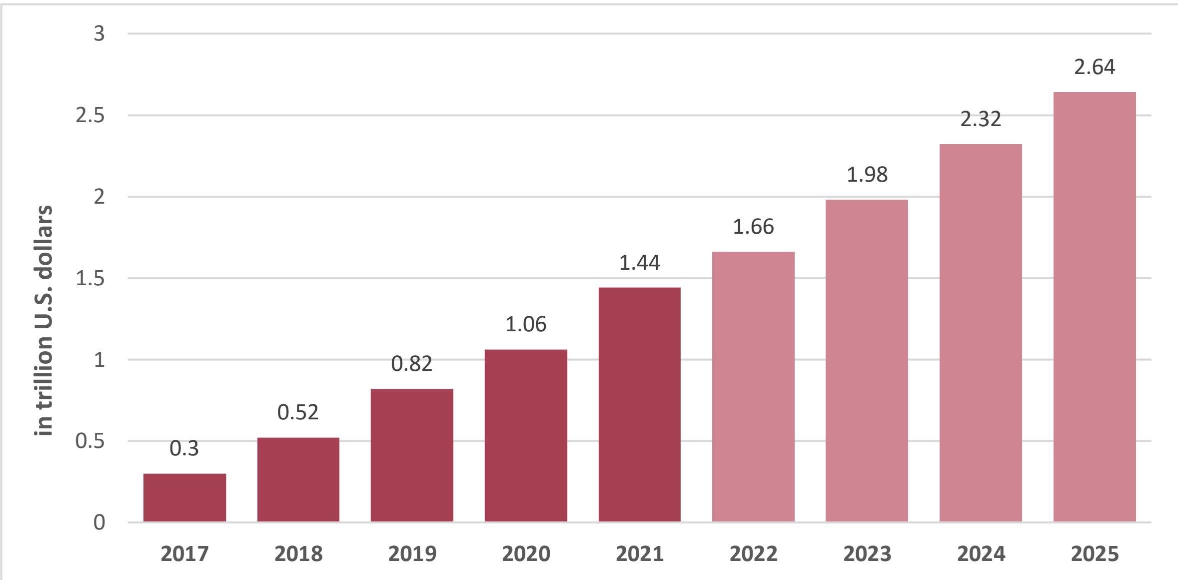
The history of Robo-advice can be said to start with 'Betterment', an automated advisory platform born in 2010 in the US. In Europe, Robo-advisors started to appear in the UK and Germany around 2013.[13] Since then, several factors have contributed to the proliferation of Robo-advisors such as an increasing digitalisation of services, a simplification through the use of online/mobile apps, and a higher use of smartphones for daily banking activities.[14]

The global market

Even though forecasts predicted an exponential growth of the Robo-advice market, some sources evidenced that the Robo-advice market seriously undershot the 2015 growth projections: whereas the 4- to 5-year growth estimates of AuM predicted a market share of roughly €3.3 trillion (US$4 trillion) in 2019 and €6.6 trillion (US$8 trillion) in 2020, the actual AuM and adjusted projections for these two years are well below €1.6 trillion (US$2 trillion) now.[15]

According to the latest figures form Statista (October 2022) the worldwide AuM of Robo-advisors worldwide reached US$1,66 trillion in 2022, which is lower than the expected AuM for the previous year (1,78 trillion USD, 2021 forecasts).[16] The expected annual growth rate (GAGR) is now set at 14.19% from 2022 to 2027, reaching US$2.64 trillion by 2025. A slower growth than expected in the previous year 2021, where an average annual growth rate of 19% was targeted for the market to reach US$2.8 trillion by 2025.

Figure 1. Assets Under Management



Source: Statista updated in October 2022 figures from 2022 to 2025 are estimated [17]

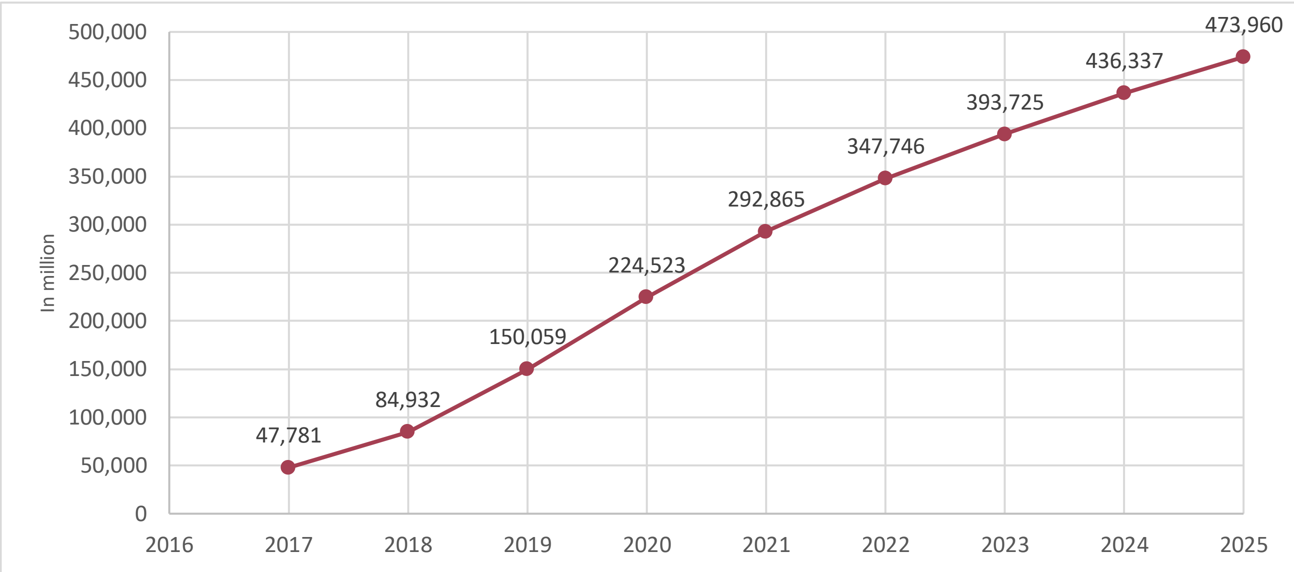
Apart from a slight slowdown in the expected growth in the amount of AuM worldwide, the trend is still upwards, and recent years have continued to see an increase in the number of clients signing up for robo-

[13] https://www.europarl.europa.eu/RegData/etudes/STUD/2021/662928/IPOL_STU(2021)662928_EN.pdf
[14] https://www.frontiersin.org/articles/10.3389/frai.2020.00060/full
[15] 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.
[16] BETTER FINANCE Robo Advice 2021 Report: "Are Robo-advisors sufficiently intelligent to provide suitable advice to individual investors?" http://betterfinance.eu/wp-content/uploads/Robo-advice-2021-Report-Are-Robo-advisors-sufficiently-intelligent-to-provide-suitable-advice-to-individual-investors.pdf
[17] https://www.statista.com/statistics/741512/aum-of-Robo-advisors-globally/

advisory services. In recent years, the wealth management industry of Robo-advisors encountered a new generation of clients, receptive to digital technologies 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. The slowdown in expected growth over the years may suggest a trend towards consolidation in this market where there continues to be potential for expansion.

This new group of clients using robo-advisory services is also more inclined to rely on information from online sources rather than individual financial advisors.[18] In addition, older generations are becoming more tech-savvy, demanding more digital investment services to meet their demands.[19] In 2021, the number of clients of Robo-advisors reached 292 million worldwide and the number of users is projected to grow up to 478.8 million in 2025 – which represents an expected increase of around 63% over 4 years (see Figure 2).[20]

Figure 2. Number of users worldwide



Source: Statista 2022; figures for 2022-2025 are estimated [21]

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. Consequently, the increasing trend of mergers and acquisitions of small and independent Robo-advisors by institutional financial players reduces the presence of the latter in the market.[22] What this implies for individual investors is yet to be seen. While this reduced independence of Robo-advisors could lead to an improvement of their services (scaling up through an acquisition), it could also lead to a higher risk of conflicts of interests. *For additional information on conflict of interests please see the section below (Robo Advisors are less conflicted than the mainstream ones).*

Since our 2019 report on Robo-advisors, we have also observed a wave of mergers whereby smaller Robo-advisors were acquired by larger, more established Robo-advisors. Within the IT and digital sector, the acquisition of start-ups by well-established companies is a common occurrence. This strategy allows established providers to mitigate future competition, as well as to increase the level of in-house innovation, while broadening the range of services available to their customers.

[18] See BETTER FINANCE, *The New Retail Investing Environment: Expectations and Challenges Ahead* (June 2022), https://betterfinance.eu/publication/the-new-investing-environment-for-retail-investors-expectations-and-challenges-ahead/

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

[20] Statista: statistics portal Robo-advisors: https://www.statista.com/outlook/dmo/fintech/digital-investment/Robo-advisors/europe?currency=usdv

[21] https://www.statista.com/outlook/dmo/fintech/digital-investment/Robo-advisors/worldwide (accessed December 2022)

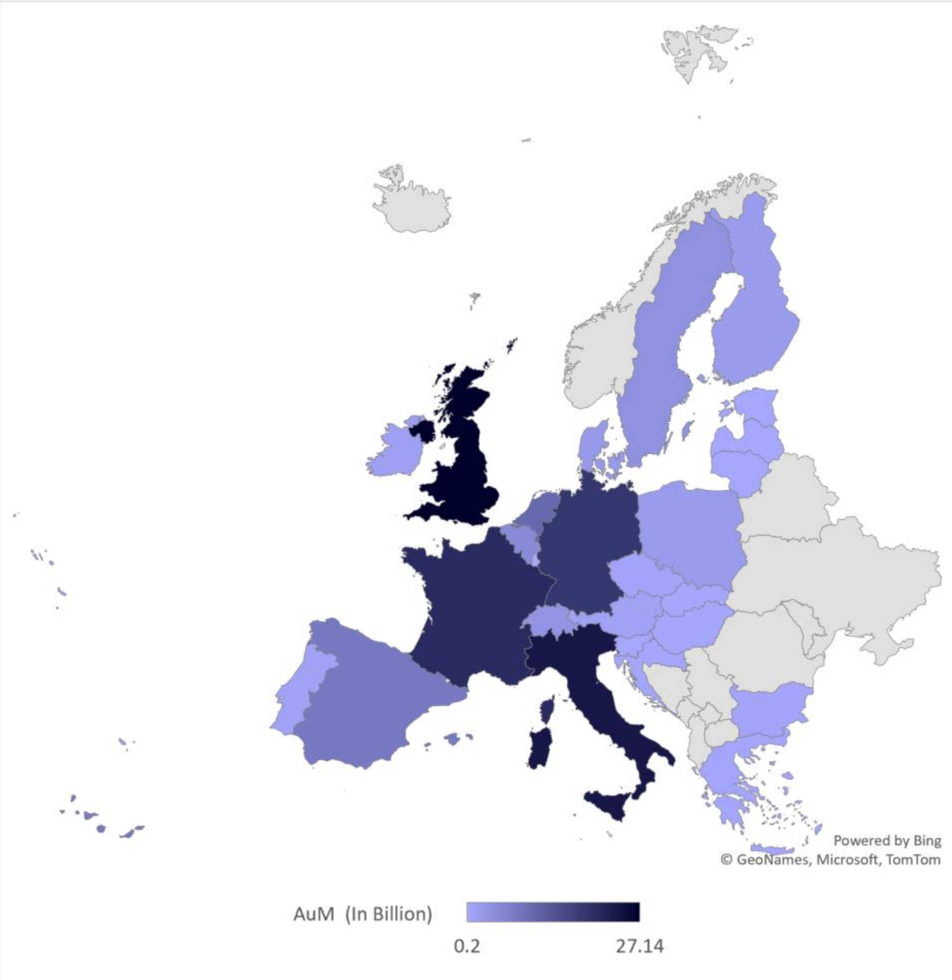
[22] https://www.thinkadvisor.com/2019/08/20/acquisitions-and-closings-mean-fewer-Robo-advisors/

The European market

The European Robo-advisor market represents a growing but relatively small share of the global market, with its (continental) AuM rising from US$514.40 billion in 2021 to US$589.50 billion in 2022, and it is even expected to grow to close US$794.40bn by 2023 (of which the EU-27 share could reach up to US$478.30bn).

According to Statista, in 2021 the US remained the biggest one in terms of AuM, with US$999 billion, followed by China with US$92.7 billion, and Japan with US$52.2 billion.[23] The EU market remains relatively smaller compared to the US and China. In 2021, a country breakdown in terms or AuM showed that the UK constitutes the largest market in Europe (€27.4 billion), followed by Italy (€23.5 billion), France (€20.4 billion) and Germany (€18.5 billion).

Figure 3. European Robo-advice market by AuM



Source: Statista updates January 2021

Table 1. AuM representation per country (2021)

Country	AuM (in billion euros)
UK	27,14
Italy	23,58
France	20,41
Germany	18,59
Netherlands	10,41
Spain	7,87
Belgium	4,87
Sweden	3,96
Switzerland	3,42
Denmark	2,6
Poland	2,36
Finland	2,22
Ireland	1,45
Austria	1,20
Portugal	1,17
Czechia	0,79
Bulgaria	0,77
Greece	0,60
Hungary	0,40
Slovakia	0,32
Croatia	0,30
Luxembourg	0,28
Lithuania	0,25
Slovenia	0,25
Estonia	0,22
Latvia	0,20

Generally, users of Robo-advisors invest relatively low amounts of money. One of the advantages of Robo-advisors is that most independent platforms have low thresholds with regard to the initial investment, thus attracting more clients that intend to make small investments. In Europe, the average investment of individual investors using Robo-advisors amounts was about €4.749 in 2021. The trend in the number of users of Robo-advisors is typically exponential: 20.1 million users in 2020 and over 40 million users were tabled by 2025.

[23] Statista update January 2021 https://www.statista.com/outlook/dmo/fintech/digital-investment/Robo-advisors/worldwide?currency=eur#key-market-indicators

THE USE OF ALGORITHMS IN THE INVESTMENT ADVISORY PROCESS

Traditional Advisors vs Robo Advisors

With the emergence of FinTech, the financial industry experienced an unprecedented change that keeps evolving at a fast pace. In this context, Robo-advisors bring new advantages and improvements compared to the traditional "human" advisor, but as with any other technological change, this doesn't come without risk.

The *raison d'être* of financial advisors, be they automated or "human", is to match the needs and preferences of the client with the investment product that best corresponds to their interests. Yet, research reveals consistent important biases affecting the advisory process of traditional financial advisors,[24] often leading to a "one size fit all" approach instead of personalised financial advice.[25]

Thus, the beliefs, knowledge, and capabilities of the financial advisor finally affect the advice to the client with the risk of providing a non-customised investment.[26] From another perspective, Robo-advisors provide investment advice based on a basic algorithm. The ESAs' 2015 Discussion Paper on automation in financial advice 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*".[27] 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.[28]

The use of this technology is not free of limitations and potential risks for retail investors.[29] Most of these risks are derived from the substitution of human judgment and interaction with artificial intelligence. Some authors find that Robo-advisors present risks such as "*errors in the underlying algorithm or limited ability to cover the specificities of all customers*".[30]

Another advantage of Robo-advisors is their (very) low level of fees and their accessible investment thresholds.[31] Indeed, evidence shows that Robo-advisors charge between 130 and 180 basis points (bps) less than traditional asset managers on a balanced fund;[32] other studies show that, whereas the cost for "human" advice does not go below 0.75%,[33] they are usually considered 'well above 1%', and in instances can go up to 2% (or above). Robo-advisors can charge at least six times less (as little as 0.25%). Moreover, the average cost for (EU/US) UCITS mixed funds stand at 1.69% (ongoing charges, excluding performance fees). Considering the negative effect that fees have on returns, these are considerable cost-efficiency gains in favour of Robo-advisors.[34] BETTER FINANCE highlights the considerable potential improvement on the *real net returns* of portfolios recommended and managed by Robo-advisors for retail investors. Since most Robo-advisors use

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[24] See, e.g., *Working Paper 109-2021, April 2021 Robo-advising Less AI and More XAI* https://www.icmagroup.org/assets/Uploads/Robo.pdf; *Foerster, Linnainmaa, Melzer and Previtero (2017) retail financial advice: does one size fit all?* https://www.nber.org/system/files/working_papers/w20712/w20712.pdf; Mullainathan, Noeth and Schoar (2012) THE MARKET FOR FINANCIAL ADVICE: AN AUDIT STUDY https://www.nber.org/system/files/working_papers/w17929/w17929.pdf.

[25] Ibid.

[26] Ibid.

[27] European Supervisory Authorities' Joint Committee Discussion Paper on Automation in Financial Advice (4 December 2015) 4, JC 2015 080, p. 17.

[28] 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 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.

[29] Boreiko, Massarotti (2020), How risk profiles of investors affect Robo advised Portfolio https://www.frontiersin.org/articles/10.3389/frai.2020.00060/full

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

[31] Many "Human" financial advisors 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 who 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.

[32] 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.

[33] Abraham, Schmukler, Tessada, 'Robo-Advisers: Investing Through Machines' (n 5), 1, quoting data from EY (2015).

[34] See the BETTER FINANCE's report 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' funds: https://betterfinance.eu/publication/study-on-the-correlation-between-cost-and-performances-in-eu-equity-retail-funds/

passive management strategies, based on low-cost index-tracking Exchange Traded Funds (ETFs), a non-professional investor may be better off with automated advice after fees and inflation are deducted, rather than with an actively managed, human-advised instrument or product.[35]

WHEN DO AUTOMATED INVESTMENT PLATFORMS PROVIDE ADVICE?

In a 2022 report on the *New Retail Investing Environment*, BETTER FINANCE highlighted the potential determinants of increased retail investments in capital markets.[36] Among other behavioural changes, we single out trends, such as *social trading*, whereby non-professional investors seek financial information, investing models, and even advice on social networks from peers or other ('semi') professionals.[37]

Several supervisory authorities raised concerns about these developments and the emergence of so-called 'finfluencers', generally warning individual investors against making suboptimal decisions and exposing themselves to too much risk.[38] In October 2021, ESMA issued a supervisory statement about giving investment recommendations on social media platforms, highlighting what information must be disclosed when suggesting investment strategies in an online environment.

As regards robo-advice platforms, our previous research showed some claim "not to provide advice" or present disclaimers in this sense. Therefore, BETTER FINANCE research team highlights this topic: what is the difference between the different types of financial and investment information provided online, including on social networks?

In short when does the provision of information (as an application of the freedom of expression) become an investment recommendation or investment advice? Can a disclaimer ("*this is not investment advice*") remove the recommendation or advice nature of the information disseminated to certain persons or the public?

Why is this important? Investment advice is a regulated service under MiFID II which can be provided only by authorised professionals (in the EU) and must meet a set of conditions. Investment recommendations can be provided by non-professionals as well, but these must be transparent about any underlying interests in order to not mislead investors.

Investment advice. The analysis must start with a top-down approach: first we need to deconstruct the concept of *investment advice* to understand what differentiates it from *investment recommendations*. MiFID II defines investment advice as:

> *the provision of personal recommendations to a client, either upon its request or at the initiative of the investment firm, in respect of one or more transactions relating to financial instruments* (Art. 4(4) MiFID II).

While this seems easily understandable, this framework actually appears complex to enforce in practice. One of the Commission's Delegated Regulations (providing further implementation details for particular MiFID II provisions) specifies that "*personal*" in "*personal recommendation*" means that the advice is addressed to a particular "*person in his capacity as an investor or potential investor*" and is not "*issued exclusively to the public*".[39]

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[35] ESMA's reports on Cost and Performance of EU Retail Investment Products have consistently highlighted since 2019 that, net of fees, passively managed funds, particularly ETFs, outperform actively managed ones (see ESMA, 2023, Costs and Performance or EU Retail Investment Products 2023, ESMA50-165-2357, p.15).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.

[36] See BETTER FINANCE, *The New Retail Investing Environment: Expectations and Challenges Ahead* (June 2022), https://betterfinance.eu/publication/the-new-investing-environment-for-retail-investors-expectations-and-challenges-ahead/

[37] Ibid, p. 12.

[38] For instance, the Chair of the Spanish Securities Markets Commission (CNVM) highlighted, in relation to crypto-investing, that "influencers or public figures" that promote such investments should be responsible so that individual investors do not fall for "*misleading or fraudulent*" offers – see Maria Dominguez, '"Toque" de Rodrigo Buenaventura (CNMV) a Los 'Influencers' Que Anuncian Criptodivisas' (4 October 2021, eleconomista.es) accessed 11 November 2021, available at: https://www.eleconomista.es/inversion-sostenible-asg/noticias/11418335/10/21/Toque-de-Rodrigo-Buenaventura-CNMV-a-los-influencers-que-anuncian-criptodivisas.html; for further explanations on the phenomenon of "finfluencers", see Vanessa Pombo Nartallo, '"Finfluencers": Financial Education and Regulator Surveillance' (8 October 2021, bbva.es) accessed 11 November 2021, available at: https://www.bbva.com/en/finfluencers-financial-education-and-regulator-surveillance/.

[39] Article 9 of 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, ELI: http://data.europa.eu/eli/reg_del/2017/565/oj (hereinafter MiFID II DR 2017/565).

Furthermore, investment advice must "*be presented as suitable*" or "*be based on a consideration of the circumstances*" of the client or potential client[40] and recommend to provision investment advice – by following those steps in particular:

(a) *to buy, sell, subscribe for, exchange, redeem, hold or underwrite a particular financial instrument.*

(b) *to exercise or not to exercise any right conferred by a particular financial instrument to buy, sell, subscribe for, exchange, or redeem a financial instrument* (Art. 9 MiFID II DR 2017/565).

However, what if a client lodges a complaint against a professional for *unsuitable* advice and the professional defends that, in fact, they did not provide investment advice?

Implicit advice. There can be situations where the provision of specific information to a certain person still qualifies as investment advice although it is not framed as such. Assuming, hypothetically, that a professional discusses with one of our mystery shoppers about his financial situation and investment objectives outside of the work environment, without making a recommendation, but later tags him/her in a post on social media, such as that displayed in Figure 4.

Figure 4. Hypothetical communication from a professional

Based on the CESR's proposals of 2009, it would still qualify as investment advice, albeit *implicit*, and the professional would still be held to the MiFID II standards for providing this particular service.[41] This is because the provision of investment advice is judged either by the *purpose* to which a specific financial or investing information is conveyed or by the *reasonable impression* the addressee is given by those who provide financial or investing information.

· Purpose: EU law makes a distinction between *investment advice* and *investment recommendation*, while defining investment advice as a "*recommendation* (…)", which prompts us to ask: what is the essence of 'advice' and how does it intertwine with 'recommendation'?

Under MiFID II, which incorporates the CESR's definition of investment advice,[42] advice must have the nature and purpose of *guiding* the addressee towards a certain investment decision, regardless of whether the addressee eventually takes that decision or not. ESMA highlighted that advice differentiates from other recommendations by its "*value judgement on its relevance to decisions which an investor may make*". While objective statements of figures, facts, or events do not have "*the force of a recommendation*", when the communication starts to be biased or aimed towards a certain investment action (buy, sell, hold, redeem, exercise a right, etc.), it becomes a recommendation which, if addressed to a particular person, will become *investment advice*.

· Reasonable impression: Both the CESR's (ESMA) guidance and the currently applicable legal framework focused on the *reasonable expectation* or *impression* a retail client is left with (from the communication with a professional) to qualify the information as 'investment advice' or not. If the client reasonably understands that a recommendation is suitable for them or that it is given in consideration of their personal circumstances, judged by all elements of the communication/exchange with the professional, it shall be considered as an investment advice.

[40] "Client" can be used interchangeably with "investor".

[41] The CESR is the precursor of the European Securities and Markets Authority, see CESR, *Understanding The Definition of Advice Under MiFID* (14 October 2009), Consultation Paper, CESR/09-665, available at: https://www.esma.europa.eu/system/files_force/library/2015/11/09_665.pdf.

[42] This is because not only the definition of investment advice under MiFID has been kept under MiFID II, but also the MiFID II DR 2017/565 has adopted key elements in defining advice from the CESR guidance of 2009.

> However, both guidance and current applicable law remain unclear on one particular aspect: should professionals understand *suitable recommendation* the same as *suitable advice*, that is, the content of the *suitability assessment* prescribed under Art. 25(2) of MiFID II? For those fluent in financial regulation, it may seem obvious that "*presented as suitable*" would follow the prescriptions of the *suitability assessment* – and would thus entail advice. But how can a non-professional investor with limited financial knowledge find a recommendation as suitable for him/her – and thus understand it as an enforceable advice? The regulators' intention perhaps was to leave room for supervisors and enforcers to enable a case-by-case assessment and judge, based on the evidence at hand, whether the addressee of the recommendation could have found or did find it suitable for them.

In our view, the assessment of implicit investment advice should start from the position of authority or expertise that they who initiates the exchange of information has, or is perceived to have, in the eyes of the non-professional addressees. Our proposal comes against the background of both already documented and newly observed behavioural biases that individual, non-professional investors, exhibit when participating, directly or indirectly, in capital markets. More importantly, given the rise of social trading (notably brokerage platforms offering mirror or copy trading), it may be that much of the discussion is in fact intended to guide the decision to be made by individual investors (or through the opinions disseminated to *value judgment to a decision to be taken*), which would shift the spread of information into the sphere of investment recommendation.[43]

EU and national securities markets supervisors should pay more attention to what self-designated peers or "experts" communicate with retail investors and how such "influence" transforms to generalised investment recommendations, especially since most of this social trading takes the form of execution-only services (where no suitability or appropriateness assessment is made).

Other forms of implicit advice. It may be useful for the average non-professional investor to recall here a few of the examples provided by the CESR where an exchange of information that does not readily seem as advice in fact does qualify as investment advice under MiFID II:

- presenting a number of alternatives, rather than one particular investment choice/strategy, to a particular client (the above conditions being met), for instance when a few model portfolios are recommended based on a questionnaire the client goes through;
- notifications when certain financial instruments reach a price, if prior to that the risk profile and assessment of the client has been made; or
- slightly ambiguous expressions such as "investors like you buy this product" or "this would be the best option".

Investment recommendations. Based on the above-mentioned MiFID II provisions, if the recommendation is not *personal*, but addressed to a wider audience, or if it is indeed personal (addressed to a particular individual) but does not appear to be suitable or in consideration of his/her personal circumstances, it would qualify as an *investment recommendation* regulated by the Market Abuse Regulation (MAR).

An investment recommendation means "*information recommending or suggesting an investment strategy, explicitly or implicitly, concerning one or several financial instruments or the issuers, including any opinion as to the present or future value or price of such instruments, intended for distribution channels or for the public*", that is

> "*(i) produced by an independent analyst, an investment firm, a credit institution, any other person whose main business is to produce investment recommendations or a natural person working for them under a contract of employment or otherwise, which, directly or indirectly, expresses a particular investment proposal in respect of a financial instrument or an issuer; or*
>
> *(ii) produced by persons other than those referred to in point (i), which directly proposes a particular investment decision in respect of a financial instrument.*" (Art. 3(34) and (35) MAR).

In much simpler terms, an investment recommendation under MAR is *generic advice* or *general recommendation*. The same reasoning for investment advice would apply in this case as well; particularly, if a set of information is objective and presented objectively, it will not qualify as investment recommendation under MAR. Such examples include:

[43] See also: 'ESMA addresses investment recommendations made on social media platforms' (October 2021), https://www.esma.europa.eu/press-news/esma-news/esma-addresses-investment-recommendations-made-social-media-platforms.

- comparison of the benefits, risks, or conditions of a particular investment;
- presentation of league tables, best/worst performers, as well as information on performances or costs;
- alerts about certain events happening.

In relation to social networks discussions, an important distinction is made in Art. 3(34) MAR: if a *professional* suggests, directly or indirectly, transactions with either a financial instrument or the issuer, it will be considered an investment recommendation; however, it will not be the case for *non-professionals* if they speak about issuers and, generally, if they do not directly propose a financial instrument.

> *Note: Both above-mentioned provisions (MAR and MiFID II) do not distinguish between professional and retail investors. While there is merit of affording a high level of protection to professional investors as well, additional safeguards for non-professional (retail) investors should be put in place.*

In addition, the Implementing Regulation of MAR makes an important additional clarification for those non-professionals who present themselves as, or create the appearance of being, experts. In short, will be considered to act as an expert any person who:

(i) *presents himself as having financial expertise or experience; or*
(ii) *puts forward his recommendation in such a way that other persons would reasonably believe he has financial expertise or experience* (Art. 1(1) Regulation 596/2014).

Such persons are held to additional disclosure rules under the MAR framework.

BETTER FINANCE believes that what distinguishes the freedom of expression from investment recommendations (MAR) and advice (MiFID II) is not, in fact, the objectivity of information but the purpose and appearance that the information fulfils or generates with non-professional addressees.

ROBO-ADVISORS' INVESTMENT ADVICE PROCESS

How do Robo-advisors provide the investment advice? This operation is carried out in several successive steps. The first step is the assessment of the client. The platform asks a set of questions to the client such as financial situation, investor characteristics (age, marital status, risk tolerance, investment horizon and net salary), financial knowledge and the investment objective. This information is collected by means of an online questionnaire, the answers to which are used to generate the prospective client's investor profile.[44] We note that the online questionnaires vary extensively across the Robo-advisors, both in terms of length and in terms of the aspects of the prospective client's profile they cover. The EU framework (MiFID II) requires specifically financial advisors to assess also the financial literacy of their clients. With recent amendments on MiFID II on *the integration of sustainability factors, risks and preferences into certain organisational requirements and operating conditions for investment firms*,[45] as of August 2022, financial advisors are now required to ask clients their sustainability preferences and to take them into consideration in their assessment.

In the second step, the Robo-advisor proposes a "tailored" investment portfolio based on the prospective client's responses to the questionnaire. Robo-advisors use different portfolio construction techniques for the construction of the portfolio: Modern Portfolio Theory appears to be the most widely used technique for portfolio optimisation and asset allocation, although lack of transparency from Robo-advisors on this aspect of this particular issue often makes it impossible to determine how the portfolio is constructed.[46] This lack of transparency is all the more regrettable that evidence has been put forward – by BETTER FINANCE as well as academic research – showing inconsistency in terms of investment advice. Boreiko and Massarotti thus show that there are major inconsistencies in asset allocation for moderate/conservative risk profiles.[47] In his analysis of German Robo-advisors, Puhle finds that similar asset allocations have very divergent performances.[48]

Some Robo-advisors also provide automatic rebalancing of the portfolio.[49] Although deemed as a basic method, the portfolio can be adjusted when the algorithm detects deviations from the initial portfolio or in light of market fluctuation. These differences could be determined by market or asset value changes within the portfolio. However, little is known about the recurrence of this type of automatic rebalancing, which most usually occurs without the client needing to perform any action in the platform. Besides, certain Robo-advisors have a clear (non-automated) rebalancing policy (e.g. annually), while other may not have any such strategy. In other instances, a gradual 'securing' of the portfolio over time (i.e. mitigating asset risk) can be presented as an option to 'activate' by a handful of Robo-advisors.

[44] *Working Paper 109-2021, April 2021 Robo-advising Less AI and More XAI* https://www.icmagroup.org/assets/Uploads/Robo.pdf

[45] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R1253&from=EN; see also: https://www.esma.europa.eu/press-news/esma-news/esma-publishes-final-guidelines-mifid-ii-suitability-requirements-0

[46] Beketov, Lehmann, Wittke (2018) Robo Advisors: quantitative methods inside the robots, https://doi.org/10.1057/s41260-018-0092-9

[47] Boreiko, Massarotti (2020), How risk profiles of investors affect Robo advised Portfolio https://www.frontiersin.org/articles/10.3389/frai.2020.00060/full

[48] Puhle (2019) The performance and asset allocation of German Robo-advisors, *Society and Economy*, 41(3), pp. 331-351, https://doi.org/10.1556/204.2019.41.3.4

[49] Study requested by the ECON Committee, Robo Advisors, How they fit in the existing EU regulatory Framework, in particular with regard to investor protection? https://www.europarl.europa.eu/RegData/etudes/STUD/2021/662928/IPOL_STU(2021)662928_EN.pdf

The application of the algorithms

An algorithm can be defined as the mathematical process of incorporating inputs (investor assessment) to provide outputs (investment portfolio). The algorithms of Robo-advisors are at the core of their business model[50] – as they rely on automation – and are generally not disclosed. As per Artificial intelligence (AI), although the term's definition is still subject to debate, is generally understood as designating systems that are more complex than traditional algorithms. According to the EU Commission, AI systems are a "*software that is developed with one or more of the techniques and approaches listed in Annex I and can, for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with*".[51] Research suggests that the application of AI in Robo-advisors is not relevant at the moment as these platforms use simple and standardised algorithms instead of more complex AI systems.[52] Even if the application of AI or more sophisticated machine learning systems is highly possible in the future, it remains unclear to determine in which specific category those might fall due to lack of common definitions at hand and the absence of transparency of the software/process in place.

***An evolution, not (yet) a revolution*: Robo-advisors work mainly with standardised algorithms, based on processes that automate the questions asked by clients in order to make an investment recommendation. However, the development of more sophisticated artificial intelligence and/or the use of third-party data remain to be scrutinised over time.**

Consequently, the question of the accountability and intelligibility of algorithms remains open. Common concerns are raised that the use of algorithms may create risks in terms of consumer protection[53] and ESMA communicated on the potential detriment in the use of consumer data by Robo-advisors. Consumers are not aware of the underlying automation technology, which suggests a lack of understanding of the initial process from which the investment advice is derived.[54] In addition, the advent of open banking and open finance is likely to enable Robo-advisors to access more customer data from multiple sources (banks and/or financial institutions, or even third parties), incorporating new potential risks while complexifying the transparency of the advice recommendation process.

ROBO-ADVISORS ARE LESS CONFLICTED THAN THE MAINSTREAM ONES

Conflicts of interest in the provision of financial advice are a commonplace wherever investment advisors receive "inducements" from investment firms to recommend a certain financial instrument to their client. Such third-party remunerations have the potential to create a mismatch between the investment advice and the actual need of the client, whereby the financial product that is advised is not the one that best suit the client's

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[50] Ibid.

[51] Proposal for a regulation of the European parliament and of the council laying down harmonised rules on artificial intelligence (artificial intelligence act) and amending certain union legislative acts https://eur-lex.europa.eu/resource.html?uri=cellar:e0649735-a372-11eb-9585-01aa75ed71a1.0001.02/DOC_1&format=PDF. These are "Machine learning approaches, including supervised, unsupervised and reinforcement learning, using a wide variety of methods including deep learning; (b) Logic- and knowledge-based approaches, including knowledge representation, inductive (logic) programming, knowledge bases, inference and deductive engines, (symbolic) reasoning and expert systems; (c) Statistical approaches, Bayesian estimation, search and optimization methods." *https://eur-lex.europa.eu/resource.html?uri=cellar:e0649735-a372-11eb-9585-01aa75ed71a1.0001.02/DOC_2&format=PDF.*

[52] See, e.g., Maume, P. (2021) "Robo Advisors, How the fit in the existing EU regulatory Framework, in particular with regard to investor protection?", European Parliament, Study requested by the ECON Committee, PE 662.928, https://www.europarl.europa.eu/RegData/etudes/STUD/2021/662928/IPOL_STU(2021)662928_EN.pdf; Bianchi, M. & M. Brière (2021), "Robo-advising: Less AI and More XAI?, Augmenting Algorithms with Humans-in-the-Loop", Amundi, Working Paper 109-2021, https://www.icmagroup.org/assets/Uploads/Robo.pdf

[53] Grochowski, M., A. Jabłonowska, F. Lagioia & G. Sartor (2021) "Algorithmic Transparency and Explainability for EU Consumer Protection: Unwrapping the Regulatory Premises", *Critical Analysis of Law*, 8(1), pp. 43-63, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3826415

[54] ESMA (2021), "ESMA Report on Trends, Risks and Vulnerabilities", ESMA50-165-1842, https://www.esma.europa.eu/sites/default/files/library/esma50-165-1842_trv2-2021.pdf

situation. Such situations may result in mis-selling practices that ultimately damage consumers' trust in the financial system.[55]

A brief point on terminology is provided in Table 2.

Table 2. Key terms on financial advice

"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 that the advisor receives is the fee charged to the client for the provision of the advice; • 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").
"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 the client pays for receiving the advice, the advice is considered "independent";*
- *if it is a third-party (such as investment product manufacturers) that pays the advisor, the advice is considered "non-independent"; however, in most cases the client still ultimately bears the cost of advice, which is bundled in the total cost figure of the investment product.*

Figure 5 depicts a common model by which an investment product manufacturer ("Investment Company") distributes a product ("Investment Product A") through an investment advisor, under agreement that the latter receives a commission if they recommend and sell 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).

As shown in the *Independent investment advice disclosure* (see Table 3) the business models of most Robo-advisors do not typically involve the receipt of "inducements" (i.e., these are "fee-only"). Therefore, those Robo-advisors can be deemed to deliver independent investment advice, thus eliminating the issue of conflicts of interest in the retail distribution chain.[56]

The effect of "inducements" on conflicts of interests is the object of a long-standing and intense debate. At BETTER FINANCE, we believe that the receipt of incentives (fees, commissions, other types of 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).[57] This position is supported by academic studies that highlight "*conflict of interest arising from compensation schemes and lack of separation between sales*

[55] BETTER FINANCE (2017), "A major enforcement issue: mis-selling of financial products", Briefing Paper, https://betterfinance.eu/wp-content/uploads/publications/Misselling_of_Financial_Products_in_the_EU_-_Briefing_Paper_2017.pdf; see also: BETTER FINANCE (2022), "Research Paper on the detrimental effects of 'inducements'", Evidence Paper, https://betterfinance.eu/publication/better-finance-evidence-paper-on-the-detrimental-effects-of-inducements/.

[56] 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.

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

and advice" as one of the key issues in financial advice,[58] and signal that "*a very particular type of conflicts of interest is the one caused by the receipt or payment of inducements*".[59]

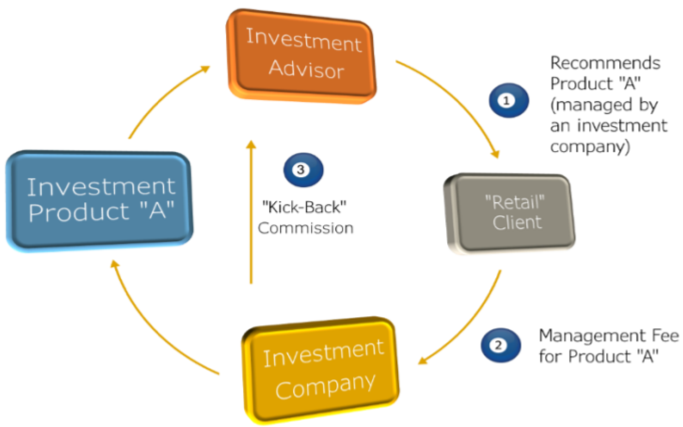
Even EU law labels such practices as "non-independent" advice and suggests that retaining inducements for investment advice to retail clients can be a source of conflicts of interests (Art. 23(1) MiFID II) or even impair with the general obligation to act in the client's best interests (Art. 24(10) MiFID II).[60]

So far, unlike the decisions taken in the UK and Netherlands, EU law did not fully ban the receipt of inducements by investment advisors when dealing with retail clients. Since 2014, UK- or Netherlands-based advisors advising "retail" clients are no longer allowed to be "remunerated" for their advice service by anybody else than the client itself.[61] 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, the effect of inducements could be adequately weighted by the investor in assessing the quality of the recommendation received from the advisor.[62] However, the reality is 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.[63] Research on Italian households shows even grimmer results: 82% of respondents were convinced that advice is provided for free (37%) or did not know whether the adviser is paid or not (45%).[64]

Figure 5. The commission-based "advice" model



Source: BETTER FINANCE own composition

The situation might change in the coming years with the EC' plans for its upcoming "Retail Investment Strategy", including a ban of inducements on execution-only orders.[65] Such "targeted ban", though arguably a step in the right direction, is insufficient to address the entire extent of the biased-advice issue in the distribution of retail investment products, which Commissioner McGuiness acknowledged, promising a ""strong review clause" allowing the EC "to bring in a full inducement ban at a later stage if necessary".

[58] 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.

[59] 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.

[60] 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*". 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.

[61] 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/.

[62] 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

[63] 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.

[64] Gruppo di Lavoro CONSOB, 'La Digitalizzazione Della Consulenza in Materia di Investimenti Finanziari' (n 28), p.14.

[65] European Commission (2023) "Speech by Commissioner McGuinness at Eurofi High-Level Seminar", Stockholm, 27 April 2023. Available at; https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_23_2492

Do Robo-advisors break the barriers of conflicted advice?

For so-called traditional advice, while the prohibition of inducements for "independent" advisors is the norm for securities markets (under MiFID II), there is no such rule applying to the distribution of insurance-based investment products (IBIPs): under the Insurance Distribution Directive, inducements are allowed by default and only exceptionally banned.[66]

To date, BETTER FINANCE has not found ***publicly available** evidence* of the Robo-advisors under review[67] receiving and keeping any monetary or non-monetary benefit ("inducements") for recommending a certain financial instrument or product.[68] However, one Robo-advisor in scope fails to provide any such evidence.

For this report, the research team analysed in detail whether the European Robo-advisors selected for "mystery shopping" were indeed providing independent advice or not based on their regulatory disclosures, since any 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)[69].

The table below summarises the research done on the MiFID II disclosures related to investment advice. Most EU-based Robo-advisors disclose (and, in a subjective interpretation, take pride in) the fact that no commissions, inducements, "kickbacks" or other incentives are retained to recommend certain investment products and that the product selection is "independent". This year, however, one Robo-advisor updated its terms by alluding that commissions *may* be paid to sales partners for active funds, although their policy does not require it. It is further stipulated that these commissions should not be retained but fairly passed on to the client as a pledge of independence. This evolution portends that the increase of incentive-reliant funds offered by providers *may* eventually lead to some of them being chosen by a Robo-advisory platform. At the end, the guarantee of this independence (of the fee-based model; in light of MiFID II) relies on the claim that the underlying kickbacks are passed on to the client, and that no other incentives are given to the Robo-advisor. In practice, this is challenging to scrutinise, and supervisors should keep assessing the absence of any conflict of interest in a funds market in constant evolution.

Moreover, it should be reminded that one Robo-advisor lacks such transparency by not disclaiming any specific information on the independence of its investment advice, nor on inducements perceived. Therefore, we cannot assert the independence of its recommendation, nor on the absence of inducements for the products on offer (and particularly as regard its insurance-based investment products).

Such information can often be found on the website of the provider in the *costs* section. Only in two cases the recommendation simulation (result) is accompanied by similar disclosure. In fact, no piece of EU law prescribes exactly where, or the moment when, such disclosure must be given (i.e. to explicitly state that no inducements are retained). In this sense, one could assume that all platforms provide independent investment advice. Eventually, we have observed that one out of 11 EU-based platforms do not specify at all whether the investment advice is provided on an independent basis or not, in accordance with Art. 24(4)(a)(i) MiFID II. Moreover, four others (of those making a reference to non-receipt of commissions) do not adequately, in our view, indicate what 'independent' entails as regards to their advice, as per required by Art. 52 MiFID II DR.

Ultimately, finding such information proves, on many occasions, very difficult, as the research team had to "dig" deeply into legal documentation (and in few occurrences, in FAQ) to access it and couldn't assess further any specifics as regards potential commission-based products, in particular for the one platform failing to disclaim its independence or not (although this remains a legal obligation).

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[66] 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.

[67] The robo-advisors under review are selected as per their 'independence' towards major incumbents of the industry (see introduction for details).

[68] Note: Alongside MiFID II regulated products, potential IBIPs offers – although not directly under scope of our analysis – could still potentially be recommended following an inducement model by certain other Robo-advisors, as one may consider the limited scope of our study.

[69] 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.

Table 3. Independent advice disclosures (EU-based Robo-advisors)

EU platforms	Website disclosure	Investment advice (results)
Easyfolio	*"Because, unlike many banks or financial advisors, we are completely independent when it comes to product selection." "easyfolio is completely independent. We are not obligated to any bank or ETF provider and manage the ETF portfolios 100% in the interest of our customers. easyfolio independently compiles the ETF portfolio and selects what we think is the best ETF for each target market."*	*No additional information*
Easyvest	*"Easyvest does not receive any commission" "Our lack of a privileged relationship with investment companies allows us to offer you the best products on the market." "Life insurance: Management fees (...) on which the fund manager who does not pay any commission to Easyvest or its insurer". "The fees charged by the funds are management fees levied by the issuers of the ETFs for the management of the funds to ensure that the funds track their index. easyvest does not receive any retrocession on these management fees. The costs charged by the funds are the management fees paid to the issuers of the ETFs for managing the funds and making sure they closely track their benchmark indices. Easyvest is not retroceded anything on these fees".*	*No additional information*
Finanbest	*"Our offer does not depend on any marketing agreement with financial institutions, other agencies or fund providers. In this way, we avoid the conflicts of interest that are always detrimental to the individual investor and which are common in other entities."*	*""We are independent. we have no conflict of interest. We invest in index and passively managed funds independently. We do not charge anything from the managers of the funds we choose".*
Finax	*"*no fees from the profit achieved *no hidden charges" "Independence. We are not paid by funds. We have no income from funds in our portfolios. We do not offer our own funds. This helps maintain objectivity while managing your assets."*	*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". "Independent Robo-advisors select the financial products used solely on the basis of the product quality and the expected return for the investor. When it comes to quality, low fund or ETF costs, the lowest possible tracking difference, tax optimization and the accuracy of the mapping of stock market indices also play a decisive role. Independent Robo-advisors do not accept direct or indirect commission payments from product providers and can therefore pursue an independent best-in-class approach, i.e. only the best investments filter out for the investor and his financial desires."[70]"the investment decision with robo-advice is based on an emotionless technology that queries and analyzes the knowledge, experience and risk appetite of the customer in an objective consultation. On this basis, an investment recommendation free of conflicts of interest is made for all independent Robo-advisors. The investment strategy is only implemented with the consent of the customer. Everyone decides for themselves whether the expected return fits their own financial situation and investment goals."*	*"We do not accept commissions and other benefits from third parties and review employee transactions. In this way, conflicts of interest that are detrimental to you as customer cannot arise in the first place.*
Indexa Capital	*"Indexa does not receive any commission for recommending products from [index fund manager] or other index fund managers"*	*No additional information*

[70] https://growney.de/finanzwiki/robo-advisor, translated from German.

Investify	*“We do not require: Kickbacks or Rebates, Sales charges and other commissions”.* *“Active funds regularly send portfolio commissions to sales partners, such as classic banks or structured sales companies. This represents a cost factor for you that reduces your return. Investify does not keep this commission, but fairly passes it on to you.”*	*No additional information*
Nalo	*"No retro-commission: 'We invest our clients' savings exclusively in ETFs, which do not pay any retro-commissions or retrocessions. So we are totally impartial in the way we manage portfolios."* *“We invest our clients’ savings exclusively in ETFs, which do not pay kickbacks or retrocessions. We are therefore totally impartial in the way we manage portfolios. We aim for the best, for your satisfaction.”*	*No additional information*
Quirion	*“(…) We are guaranteed to receive no commissions and are completely independent.* *(…) without additional costs, hidden fees or commissions”.* *“With Quirion you get all kickbacks credited to your account. Quirion discloses all commissions so that you know exactly what you are paying.”* *“There are no commission at Quirion. These do not apply to you.”* *“No more bad and overpriced products that are of no use to you! Fee-based advice makes sense if you are unfamiliar with the subject and would like to hear the advice of an independent expert.”*	*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”.* *“As a matter of principle, we do not accept commissions, kickbacks, retrocessions, trailer fees – or whatever they are called. It is our philosophy and our promise to you that our interests are absolutely aligned with yours. And if that is to be the case, as a provider of an asset management service you are not allowed to accept any commissions: neither from product providers nor from our partner bank.”*	*No additional information*
Yomoni	*[No indication]*	*No additional information*

Source: BETTER FINANCE own composition based on 2022 mystery shopping [English translated]

METHODOLOGY

To complement existing research, we aim to test Robo-advisors by analysing their characteristics by replicating the experience of two individual investors in their engagement with the different platforms. Since investing should not be a full-time job for EU citizens as savers and investors, comprehensibility of the services offered should not involve research, not least any that could not be carried out by an average individual investor. More specifically, the examination of automated investment providers focusses on reliability, transparency, costs and suitability for retail investors (via "mystery shopping"). Algorithm automation testing was introduced in BETTER FINANCE's work in 2018 and yearly to this day. In 2022, we introduce a specifically re-designed assessment of sustainability options, and preferences of the platforms (see next chapter).

INVESTOR PROFILES

The algorithm testing is performed in relation to 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 criteria for both profiles are the same since the 2018 BETTER FINANCE study on Robo-advisors, which ensures consistency and comparability across years. The initial investment amount is €10,000 for the Millennial and €100,000 for the Baby-boomer.[71] The respective ages of the two profiles were determined based on the amounts to be invested and the number of years it would take an average EU employee to accumulate said amounts.[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 Millennial investment goal is to raise funds to acquire a property over a period of 5 years. Considering that the millennial is more financially literate, he is willing to take greater risks for higher returns in the short-term markets.

Millennial

- Single
- No children
- Master's degree in banking and economics
- Financially literate[74]
- No practical experience with investments
- € 10.000

Baby-boomer

- Married
- With grown-up children
- Degree in engineering
- Not financially literate
- Some experience with investments (pension savings, life insurance)
- € 100.000

[71] Net of liabilities.
[72] According to Eurostat, the average monthly net income in the EU is about € 2000 (in 2022, for a single worker), see https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Wages_and_labour_costs; In addition, we use an annual income increase rate of 2% based Berardi A., C. Tebaldi & F. Trojani (2018), "Consumer Protection and the Design of the Default Option of a Pan-European Pension Product", Swiss Finance Institute Research Paper No. 19-19, https://doi.org/10.2139/ssrn.3142243
[73] Modest savings ratio of 1:9 of the income (or up to 10% per month).
[74] The objective degree of financial literacy can be different to the *self-assessment* described below.

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 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 by 50%;
  - *baby boomer*: redeem investments if the value suddenly drops by 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 the experience of previous years, the details prepared for each investor profile were not always sufficient to answer all the questions of the different Robo-advisors; whenever the questionnaires required additional information, it has been developed in strict accordance 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, as the previous, suggests a pre-determined recommendation for comparison purposes. The research team used a *Model Investor Questionnaire* – developed by the 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*).

> *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.*
>
> *The reference allocation should not be understood as strictly '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.*

[75] BETTER FINANCE Report on the Real Returns of Long-Term and Pension Savings, 2022 edition: https://betterfinance.eu/publication/the-real-return-long-term-pension-savings-report-2022-edition/.

[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.

Model Investor Questionnaire

The OE researchers found that questions that are dependent on previous answers can generate biased responses and incorrect statements, as the client is bound by their previous answers and not necessarily in an objective way. A solution lies in the combination of subjective (behavioural) and objective questions, which cross-check that the client attempts to abide by the rule that "*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, based on this questionnaire, five investor profiles by risk-return class, described in the table below.

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

Source: OE, 2019

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

Table 5. 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).

[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.

ALGORITHM TESTING AND EVALUATION CRITERIA

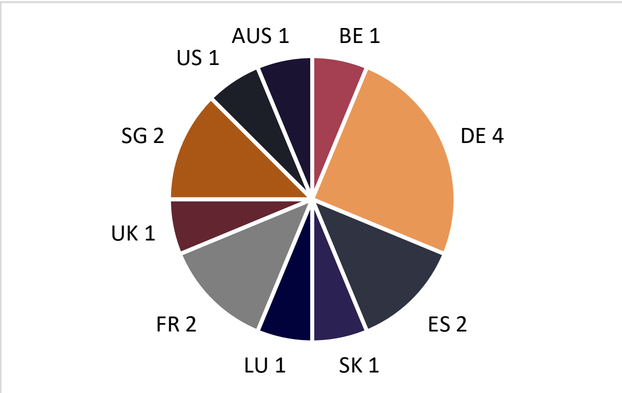
Selection of Robo-advisors

During the recent years of research, 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 access investment advice.

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 major financial industries;
- The platform is openly accessible up until the investment advice (i.e., no requirement of account using personal sensitive data like ID cards, social security number, bank account);
- Allows a minimum investment of € 10.000 or lower.

Figure 6. Geographical distribution of the sample of Robo-advisors



As in any market with potential, start-ups eventually end up being acquired by established players. For example, in 2019 Goldman Sachs took a stake in Robo-adviser Nutmeg as part of a funding round and BlackRock bought a minority equity stake of Scalable Capital.[78] Earlier in 2016, the private bank Hauck & Aufhauser acquired a stake in Easyfolio,[79] and Allianz bought a stake in Moneyfarm.[80] 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.

This report continues to test most of the Robo-advisors analysed in previous editions of the report (excluding two from last year). This 2022 "mystery shopping" research comprises 16 platforms (of which 11 are EU-based): *Easyfolio* (DE), *Easyvest* (BE), *Endowus* (SG), *Finanbest* (ES), *Finax* (SK), *Growney* (DE), *Indexa Capital* (ES/BE)*, *Investify* (LU), *Nalo* (FR), *Quirion* (DE), *Sigfig* (US), *Sixpark* (AUS), *StashAway* (SG), *White box* (DE), *Yomoni* (FR), *Evestor* (UK)[81].

[78] 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; 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

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

[80] 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.

[81] According to the webpage of Evestor, it is a trading style of OpenMoney Adviser Services Ltd. The research team did not analyse the relationship between the two and which entity provide advice.

This year 2022, *Euclidea* (IT) and *SoFi* (US) have been removed from the scope of this research as they now require identified accounts prior displaying the advice (but not prior to taking the questionnaire).

Consequently, we confirmed the trend towards 'lock-in' of Robo-advisors, and the scope of this year's edition could not be extended to new platforms, newly launched independent actors that mostly rely on strong authentication and sensitive personal data at account creation or to display the advice.

The total of 16 selected platforms are supervised by national authorities of 10 different countries: 6 across the European Union, along with the UK, Australia, Singapore and the US (see Figure 6)[82].

Mystery shopping

The scope of this research is to carry out a "mystery shopping" from the perspective of the layman investor. Therefore, the scores provided to each platform for each indicator should not be considered as an objective observation of Robo-advisors' performance nor of full compliance.

The research team accessed the Robo-advisors' platforms and went twice through the questionnaire process to generate investment recommendations for each of the two profiles: once for the "millennial" profile and once with the "baby boomer" profile, complemented this year by a sustainable preference, when available. 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. To evaluate the service of the Robo-advisors from the point of view of the individual investors, we kept four main indicators: suitability, fees, transparency, and a revisited sustainability part (in light of mandatory introduced in MiFID 2 sustainability preferences from clients in August 2022). The user-friendliness indicator has now been discarded from our comparison, as Robo-advisors are all acknowledged easy to use.

Robo-advisors in our sample received a score in each of these indicators, providing an overall view of the customer experience. In addition to these 4 main indicators, we also analyse potential divergences in terms of equity allocation and future performance. With these key aspects, the analysis provides an overall assessment of the strengths and weaknesses of these automated services for individual investors.

For additional information on the methodology applied to test the Robo-advisors per each category (transparency, fees, suitability and sustainability options and revised assessment), *see* ANNEX I.

[82] Note: Robo-advisors were mainly accessed from Belgium, regardless of their activities/location in the market. Platforms active in several jurisdictions may provide different results – particularly in terms of fees – when consulted from one location or another.
**Indexa Capital* is registered for both the Spanish and the Belgian market - in this study the result of the Belgian offer prevails.

ALGORITHM TESTING & COMPARISONS

Note: For transparency purposes, BETTER FINANCE disclosed in the previous section the names of the European and non-European platforms subject to mystery shopping in this report. Not to disadvantage robo-advice platforms in light of our specific methodological criteria, this section censors the platforms names. The aim is to provide an overview of the market by focusing on the results of our mystery shopping exercise.

SUITABILITY

Being held at the same legal and professional standards as "human" advisors, automated platforms must fulfil certain criteria before delivering investment advice. These criteria, concerning the *information that needs to be collected* about the investor and the characteristics of the proposed investment, sum up the *suitability* with the client's profile and needs.

The suitability assessment is divided in two parts[83]:

1) suitability of the questionnaire [Figure 7] and;

2) suitability of the investment advice [Figure 8].

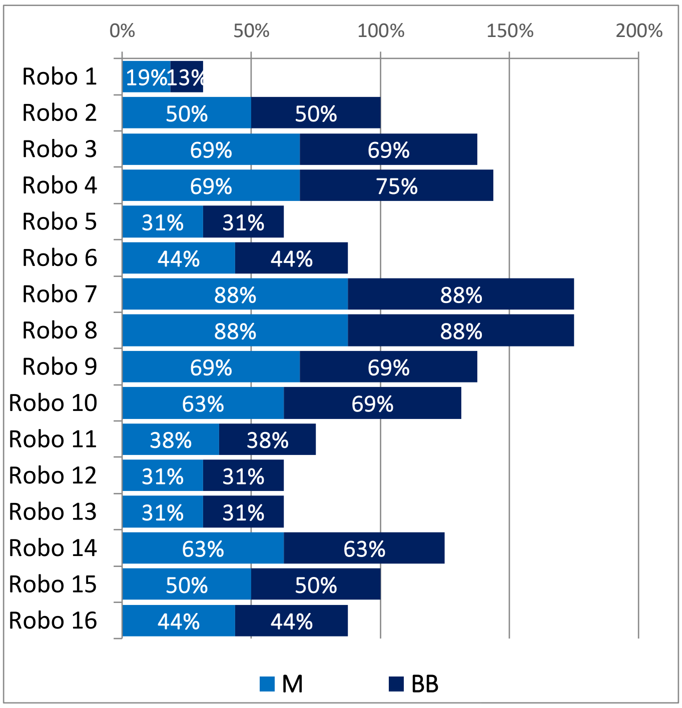
Suitability of the questionnaire

First, looking at the Figure 7 below, we can observe the degree of suitability of the questionnaire of the Robo-advisors. The research team checked whether Robo-advisors ask about the financial education, personal situation, financial literacy and the risk level of their clients.

The personal situation of the client seems again to be the least represented question in the questionnaires of Robo-advisors. Even if almost every platform asks about the personal situation (1or 2 questions), only a handful of platforms focus on these aspects. Furthermore, financial literacy is underrepresented in the questionnaire of Robo-advisors. Only 2 platforms received maximum score on the financial literacy (2 points. We are also surprised to note that some platforms do not ask about the financial situation of the prospect client.

It is important to note that scores among the Millennial and the Baby boomer might be different for the same platform. The reason for these differences lays in the different investment objective between the Millennial and the Baby Boomer, thus generating changes on the type and number of questions asked by the platform.

Figure 7. Suitability of questionnaire



Source: BETTER FINANCE own composition

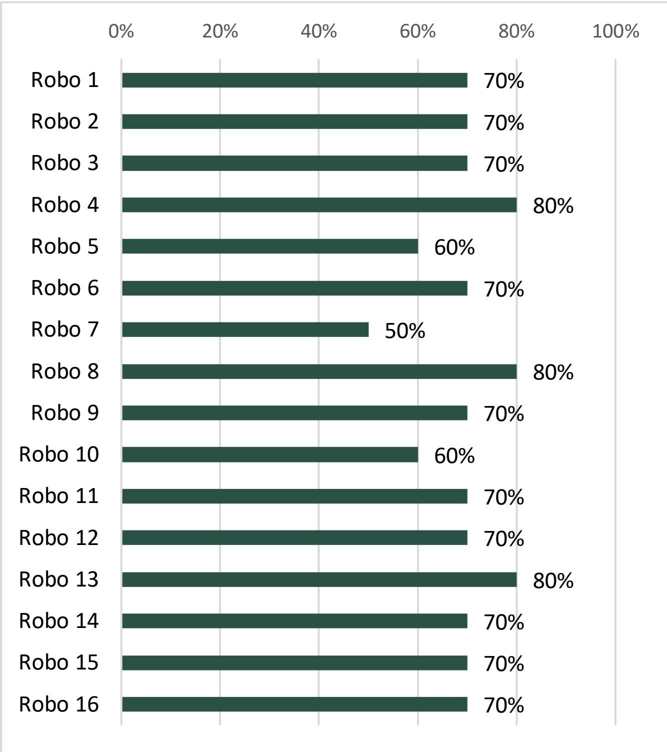
[83] For additional information on the methodology to assess the suitability of the questionnaire and the investment advice, please look at the Annex I under the section suitability.

Suitability of the investment advice

Second, the research team also analysed whether the investment recommendations are suitable according to each "mystery shopper" (the two risk profiles). However, it is at the discretion of each provider to decide how to design the questionnaire (number of questions, and their complexities) to obtain the information needed to perform the suitability assessment – and thus achieve the proper match between the available products and the client's needs, objectives, risk tolerance, etc.

In this report, the suitability assessment takes on a simplified, generic approach for three reasons: first, we deem that only one of the Robo-advisors provides sufficient information as to actually perform an in-depth assessment of the recommendation (i.e. SRRIs of the underlying investments, volatility, ability to reach the intended results and alignment with the holding period); second, we aim to enable a general comparison between the platforms.

Figure 8. Suitability of investment advice



Source: BETTER FINANCE own composition

The aggregate assessment of the portfolio suitability for both profiles (M & BB) compiles:

1-Equity allocation; 2-Diversification; 3-Complexity; 4-Ability to bear losses.

Note: The aggregate assessment of the portfolio suitability for both profiles (M & BB) compiles: 1) Equity allocation; 2) Diversification; 3) Complexity; 4) Ability to bear losses. The scoring system awards either 0 or 1 point for each criterion, except for diversification, for which from 0 to 2 points are awarded. The results are then averaged at platform level and calculated as % of the maximum point awarded.

The figure 8 presents the *aggregated results* of each platform as regards the four suitability criteria, and considering the two different risk-profile (Millennial and Baby Boomer) tested. It should be noted that, in comparison with the asset allocations calculated internally for our mystery shoppers (see *Methodology*), the research team observed a recurrent misalignment in the case of the millennial mystery shopper: two of the European platforms proposed an equity-bond allocation that would fit, in our view, in the interval[84] that would be suitable for that type of investor; while two other US-based platforms fitted the allocation. For the baby boomer half European platforms did propose a suitable asset allocation, whereas the two US-based ones did not, for example (see next part on proposed portfolio allocation)

We find three worst performing Robo-advisors in terms of ability to provide appropriate investment advice; Robo 7 scores only 50%, followed by Robo 5 and 10 which score 60%. The other platforms range from 70-80% maximum. In terms of complexity, in our view, none of the investment and portfolio recommendations were too complex (based on available data), with one exception. In terms of diversification, all platforms propose fairly diversified portfolios. With regard to our reference equity allocation range, only one platform out of sixteen obtained the maximum score for both investor profiles tested (based on our available data and in accordance with our methodology).

It is interesting to note that there may be correlation gap between the scores of the suitability the questionnaire and the suitability of the investment advice. For example, if Robo 1 performed worst for the questionnaire, it achieves an average suitability result amongst platforms. As it is, we conclude that, in some instances, the availability of a selection of sound and balanced portfolios (even if limited) may be more important than a comprehensive suitability questionnaire that would result in lower quality portfolios being offered.

[84] see Methodology p.23

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 parameter: it must be suitable and aligned with his investor profile. As in previous years, we still find a significant divergence between the investment advice provided for the two profiles.

The following indicators are analysed 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 & risks
3. Correlation between the expected return on investment and the equity allocation.

As highlighted above (see subsection 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 reason may be to present high profit estimates to entice the customer to subscribe. In fact, the relevant MiFID II legislation does not prescribe any parameters or estimation *formulae*, but 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 to give a levelled and objective point of comparison with regards return estimates made by the Robo-advisors.

In addition, we provide a comparison - where available - of this year's results with the results of the previous year's Robo-advisors reports (2018-2022) to assess whether discrepancies remain for the same platforms.

Proposed Portfolio Allocation

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

Table 6. 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 portfolio compositions recommend for a sound equity allocation to be between 60% and 100% for the millennial and between 35% and 75% for the baby boomer. The risk-return class of the portfolio fall 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, generally ETFs (capitalisation-based). The only direct holdings – apparent from the available information – are in cash reserves.

Second, we observed that some of the European Robo-advisors in this sample recommend alternative investments (*note: alternative to equities and fixed income*), such as real estate, infrastructure, commodities or gold. While a few Robo-advisors recommend to 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 7. Portfolio composition – Millennial

	Equity	Fixed income	Other	Cash
EU Robo-advisors				
Robo 1	63%	36%	-	1%
Robo 2	50%	50%	-	-
Robo 3	30%	70%	-	-
Robo 4	50%	50%	-	-
Robo 5	50%	49%	-	1%
Robo 6	46%	54%	-	-
Robo 7	33%	27%	40%	-
Robo 8	23%	55%	20%	2%
Robo 9	54%	50%	-	-
Robo 10	40%	35%	25%	-
Robo 11	50%	50%	-	-
Non-EU Robo-advisors				
Robo 12	89%	3%	-	3%
Robo 13	84%	16%	-	-
Robo 14	53%	26,4%	20,6%-	1%
Robo 15	80%	19%	1%	-
Robo 16	100%	0%	-	-

Reference equity range: 60%-100% [Red is deemed sub-optimal]

Source: BETTER FINANCE own composition based on 2022 Robo-advisors' recommendations results

In terms of equity-bond shares, we can observe that 9 out of the 16 European Robo-advisors recommended an equity exposure below or equal to 50% of the investment. In our view, such approach remains prudent, which does not reflect the more *aggressive* risk profile of the millennial investor. We note that of those deemed sub-optimal, Robo 9 (EU) and Robo 14 (non-EU) allocate 54% and 53% respectively to equities, the only ones nearing our reference allocation (60%). Alongside the European (but non-EU) Robo 12, other non-EU Robo-advisors 13, 15 and 16 tend to be among the most risk-appetite oriented, all allocating 80% or more to equities - all aligning with our comparative equity allocation. In total, only 5 out of the 16 Robo-advisors in scope fall under the reference equity allocation range for our Millennial profile (including only 1 EU-based platforms out of 11). If no financial advisor – including through automated platforms – can be expected to recommend the exact same portfolio allocation (respective percentages of equities, bonds, other, cash), in generic terms, the research team finds it puzzling that the equity exposure can range from 23% to 100% for the same investor profile amongst those digital advisors.

Unfortunately, our report is not the only one to have (and continuously) found such a divergence: a FINRA report[85] 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, what is unique about most Robo-advisors is that they offer the client the opportunity to change their allocation and investment strategy before committing. A client may voluntarily decide, to varying

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

degrees – and in spite of the initial recommendation – to tweak his/her predefined preferences or even to modify them until the performance estimates match the desired outcome.

Table 8. Portfolio composition – Baby boomer

EU Robo-advisors				
	Equity	Fixed income	Other	Cash
Robo 1	84%	15%	-	1%
Robo 2	50%	50%	-	-
Robo 3	50%	50%	-	-
Robo 4	60%	40%	-	-
Robo 5	25%	74%	1%	-
Robo 6	45%	55%	-	-
Robo 7	22%	18%	60%	-
Robo 8	23%	58%	18%	1%
Robo 9	46%	54%	-	-
Robo 10	95%	5%	-	-
Robo 11	40%	60%	-	-
Non-EU Robo-advisors				
Robo 12	31%	66%	-	3%
Robo 13	67%	28%	5%	-
Robo 14	70%	25%	-	5%
Robo 15	20%	79%	-	1%
Robo 16	0%	100%	-	-

Reference equity range: 35%-75% [Red is deemed sub-optimal]

Source: BETTER FINANCE own composition based on 2022 Robo-advisors' recommendations results

For this risk-averse and long-term oriented profile, the research team expected to note an equity allocation ranging between 35% and 75%, but 8 out of the 16 platforms recommend an equity exposure outside those intervals. The extremities are represented from 0%% to up to 95% in terms of equity allocation. We note that only one Robo-advisor that do not fall within our *reference asset allocation* is nearing it (Robo 12 with 31% of equities for a minimum recommended of 35%). In EU platforms, equity allocations can range between 22%-95%, whereas in other non-EU countries the variation is comprised between 0%-70%.

Overall, in contrast to our observations for the millennial profile, we note a greater convergence both between Robo-advisors and with regard the *reference equity range* recommended by our methodology for our baby boomer profile, to which 8 out of 16 (half of the) platforms' offers are in line (including 6 out of 11 EU-based platforms).

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 in view of the rules of conduct in the pre-contractual phase towards retail investors. BETTER FINANCE re-asserts the importance of not exaggerating – or overestimating – expected returns for commercial purposes. Moreover, as some platforms disclose *performance scenarios* (optimistic, pessimistic, neutral or regular projection), and some do not, it is important to be able to compare such figures. In this exercise, the scenario presented as medium (or more 'balanced', 'likely' or more 'plausible', etc.) by the platforms is considered.

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 overview of how divergent and misleading return forecasts can be in the automated advice market. In fact, the two platforms with similar equity allocations present four, very different, return estimations (Millennial); same stands for the baby-boomer results.

These results are quite misleading for the individual, non-professional investor. For instance, it can be observed that a cautious (conservative) risk-reward profile with about 50% of capital invested in equities is either expected to return – on the same period – over 50% more than a portfolio with 85% of its capital invested in equities, or to yield almost as much as a portfolio with 0% of capital invested in equities. This clearly depicts the evaluation divergences between platforms as regards returns expectations linked to equity exposure ratio.

Table 9. Return estimation comparison

	Portfolio composition - Millennial (5 Years)			Portfolio composition - Baby Boomer (20 years)		
EU Robo-advisors						
	Equity	Projection	Risk	Equity	Projection	Risk
Robo 1	63%	5,50%	6/10	84%	5,70%	8/10
Robo 2	50%	5,20%	/	50%	4,20%	/
Robo 3	30%	2,19%	3(7)	50%	4,16%	4(7)
Robo 4	50%	4,62%	/	60%	7,12%	/
Robo 5	50%	4,91%	Medium risk	25%	4,19%	safety oriented
Robo 6	46%	1,90%	5/10	45%	1,90%	5/10
Robo 7	33%	4,37%*	SRRI 4	22%	3,20%*	SRRI 3
Robo 8	23%	3,16%	2(7)	23%	3,36%	2(7)
Robo 9	54%	5,30%	Medium risk	46%	5,30%	Medium risk
Robo 10	40%	2,40%	/	95%	5,51%	/
Robo 11	50%	5,47%*	/	40%	4,44%*	/
Non-EU Robo-advisors						
Robo 12	89%	5,00%	Level 3(3)	31%	1,94%	Level 1(3)
Robo 13	84%	N/A	/	67%	N/A	/
Robo 14	53%	6,50%	Medium risk	70%	6,80%	Balanced
Robo 15	80%	4,91%*	/	20%	1,47%*	/
Robo 16	100%	7,28%*	/	0%	5,08%*	/

Source: BETTER FINANCE own composition based on year 2022 Robo-advisors' recommendations

*BETTER FINANCE computation based on the investment returns (Millennial Y5, Baby boomer Y20)

It is noteworthy that there are considerable divergences in terms of expected return and associated risks between platforms for the same investor profile. In 2022, according to our sample of 16 Robo-advisors from and outside the EU, annual growth rates vary from 1.90% to 7.28% for the Millennial, and from 1.47% to 7.12% for the Baby Boomer, thus confirming the incoherent expected returns for the same investor profiles.

As regards the risk associated with investment advice, the results continue to show clear divergences on how the Robo-advisors assess the risk for different type of investors. For the Millennial we can find investment advice deemed to be very low risks (2/7) to "*medium*" and *high* risk (or 6/10 to 3/3). The same considerations are valid for the Baby Boomer, with platforms that suggest "*safety oriented*" (or 1/3) investment or at "low" risk to highly risky portfolio (8/10). However, compared to last year, we observe a slight re-alignment improving the risk categorisation from some platforms. This is sometimes due to changes in asset allocation, but in other cases, platform may have self-reviewed their risk category.

Interestingly, two Robo-advisors (Robo 2 and Robo 8) provides the same equity allocation for the two different profiles (Millennial and Baby Boomer), respectively accounting for 50% and 23% of the offered portfolios. However, both Robo 2 and 8 diverge across investor profiles with respect to expected annual growth (returns), by 1ppt and 0.20ppt respectively. Moreover, while Robo 2 does not disclaim the portfolio risk, Robo 8 bears exactly the same risk for both profiles. This raises the question of whether the platform genuinely takes into account the characteristics of the client in its investment advice.[86] In addition, the potentially limited portfolios on offer may induce very few adjustments (a minima) on the part of some platforms despite their questionnaire, thus potentially advising less adapted portfolios according to clients' needs.

To conclude this section, we observed once again that 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, although to varying degrees and of overall less importance from previous years. Nevertheless, this clearly demonstrates that not only are future performance scenarios based on the discretionary assumptions of financial advisors, but also that performance forecasts are likely to mislead the investors in most instances.

Table 10. Return estimation comparison (2018–2022)

Robo-advisors *(sample)*	2018		2019		2020		2021		2022	
	M	BB	M	BB	M	BB	M	BB	M	BB
Robo 1	4,86%	6,14%	4,28%	6,10%	5,59%	6,10%	5,60%	5,90%	5,50%	5,70%
Robo 2	5,65%	3,37%	N/A	N/A	N/A	N/A	4,70%	4,70%	5,20%	4,20%
Robo 3	4,80%	2,05%	3,37%	6,12%	2,43%	2,81%	2,40%	3,76%	2,19%	4,16%
Robo 4	2,40%	1,47%	6,08%	4,14%	4,95%	2,96%	4,40%	2,04%*	4,62%	7,12%
Robo 5	4,37%	1,53%	2,01%	0,92%	4,30%	1,60%	4.60%	3,80%	4,91%	4,19%
Robo 6	2,35%	4,54%	2,72%	2,77%	2,13%	2,17%	1,90%	1,92%	1,90%	1,90%
Robo 7	2,11%	3,95%	10,91%	5,80%	5,02%	3,33%	5,64%*	3,19%*	4,37%*	3,20%*
Robo 8	6,20%	6,77%	13,70%	6,21%	4,54%	4,74%	4,56%*	4,76%	3,16%	3,36%
Robo 13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: BETTER FINANCE own composition (2022 Robo-advisors data, and previous reports)

*****BETTER FINANCE computation based on the investment returns (Millennial Y5, Baby boomer Y20)*

Looking at the comparison of annual growth rates (Table 10) among the 9 platforms analysed across 5 years (2018-2022) we observe different projections for the same investment profiles (M and BB). Although market conditions and changes in the equity allocation for the proposed investment may affect the calculation of expected returns each year, the comparison table confirms that individual investors cannot rely on future performance, as very large differences and divergent expected returns are provided between platforms for the same investor profile. However, over the years, we noted more convergence in terms of expected annual growth rates between 2020 and 2021 compared to a higher dispersion observed in the previous years (2018-2019). With a few exceptions, the same is true for the year 2021-2022, with expected returns often in-line (although adapted) from one year to the next. Also, in terms of asset allocation (Table 11) high divergences

[86] Another research based on Robo-advisors located in Germany also demonstrated similar findings on divergences across asset allocation and performance of the investment advice. The study reveals that similar portfolio allocation with 50% equities and 50% bonds has a high degree of differences in terms of performance among different platforms.

are identified across the years 2018-2019 and less divergences between the years 2019 and 2020. Between the years 2020 and 2021, Robo-advisors seems to provide very similar equity allocations for both profiles. From 2021 to 2022, we observe either very similar or same equity allocations or major adjustment from certain Robo-advisors (e.g. Robo 4 and Robo 8), irrespective of our two reference investor profiles. Interestingly, among the compared sample, Robo 4 and 8 have adjusted their portfolios the most over the past year and fail to align with our *reference equity allocation* for each investor profiles, where the only exception is Robo 4 for the Baby Boomer one.

Table 11. Equity allocation comparison (2018–2022)

Robo-advisors *(sample)*	2018		2019		2020		2021		2022	
	M	BB	M	BB	M	BB	M	BB	M	BB
Robo 1	48%	80%	48%	90%	59%	90%	59%	90%	63%	84%
Robo 2	N/A	N/A	70%	50%	50%	60%	50%	50%	50%	50%
Robo 3	50%	70%	30%	70%	30%	50%	30%	50%	30%	50%
Robo 4	60%	60%	60%	30%	50%	35%	40%	35%	50%	60%
Robo 5	66%	48%	64%	28%	70%	30%	50%	25%	50%	25%
Robo 6	46%	20%	46%	46%	46%	45%	46%	45%	46%	45%
Robo 7	36%	45%	36%	45%	22%*	22%	33%	22%	33%	22%
Robo 8	75%	27%	47%	64%	32%	32%	41%	41%	23%	23%
Robo 13	87%	67%	84%	64%	84%	67%	84%	67%	84%	67%

Source: BETTER FINANCE own composition 2022 (data from previous reports)

FEES

While there are many pros and cons of Robo-advice, the success of the concept also hinges on its ability to keep costs low. In this respect, Robo-advisors do not fall short! By any measure, Robo-advisors continue to be far less expensive than the equivalent services provided by more traditional players such as banks financial advisors and asset managers who usually charge fees way beyond 1%.

Most of our sample of Robo-advisors covered in this study provide potential customers with simple and easily understandable fee structure that typically combines an "all-in-one management fee", supplemented by an average cost of the underlying fund fees (see Table 12). The overall adoption of such simple fee structures also entails lower fees than those charged by "human" financial advisors or private bankers. As such, these web-based investment advisors are quick to draw comparisons with traditional players to promote the competitive advantage of their services.

However, Robo-advisory fees often remain based on the amount of money managed ("assets under management") to incentivise new inflows, rather than relying on an actual performance-driven system. For platforms that are independent from financial institutions, greater alignments with clients' interests are observed, thanks to the absence of conflicts of interest, enabling for the selection of low-cost investment options (such as index ETFs), albeit those are not entirely consistent (see suitability).

Barring a few exceptions, Robo-advisors typically do not charge other subscription fees such as entry, performance, or wrapper fees, etc. – which are often to be found in standard "face to face" financial advice, incumbent and private banking services. However, most of those automated investment platforms pass on custody fees or transaction fees to the client (when applicable), either by including those into their "packaged fee" or by featuring a specific "third party" or "running/other costs" section, identified as additional costs. The disclosure of these costs is often featured in the investment advice breakdown, while others are opting for a dedicated section of their website. In two occasions, this may not be directly apparent to investors, as management fees may be highlighted at the expense of third-party fees shown on a separate page. Since

Robo-advisors are usually considered to be "fees-only" instead of "fee-based", an "automated advisor" (when independent) is compensated only by the fees charged to clients, and not by additional commissions gained by selling a specific product[87]. Most independent Robo-advisors distinguish themselves from "traditional advisor"[88,89] for being fees-only, whereas many platforms also state not receiving any such commission, a few mention that any *potential* incentive-based product that *may* be selected would only benefit the client. However, it is difficult to verify concretely whether a platform is effectively receiving commissions or not and if it would indeed act independently by not retaining any of those by passing it on in full to the client. In rare exceptions, however, Robo-advisor platforms display the potential bid/ask spread that an investment product may bear.

Broadly speaking, the automation of their advice process allows for lower, fixed costs, thus generating a competitive pricing. Yet the real trick to keeping costs down is that most platforms use low-cost exchange-traded (usually indexed) funds (ETFs) that are often capitalisation based. Since ETFs are publicly traded financial instruments that replicate the evolution of a stock market index in real time, their fees remain minimal.

Overall, fees (Table 12; management fee + average underlying fund) vary between 0.53% and 1.65% in the EU and between 0.36% and 1.10% in the UK, US, Australia and Singapore, thus placing Robo-advisors in a very favourable position against traditional players who typically charge well over 1-2%. Moreover, a constant downward trend in overall fees charged by Robo-advisors is still observed over time, especially in Europe where the lower-end fees kept going down this year 2022 (Table 13).

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[87] Barclay Palmer, 'Fee-Based vs Commission-Based: What's the Difference?" (Investopedia.com, 11/11/2021) available at: https://www.investopedia.com/articles/basics/04/022704.asp

[88] See https://smartasset.com/.

[89] Kevin Voigt, 'Fee-Only Financial Planner vs. Fee-Based: What's the Difference?' (Nerdwallet.com, 24/09/2021), available at: https://www.nerdwallet.com/blog/investing/fee-only-fee-based-financial-planner-difference/.

Table 12. Robo-advisors' fees

Platforms	Source	Annual asset-based management fees		Annual Underlying ETF fees		Custodian, depositary, or other recurrent fees		Total annual fees	
		M	BB	M	BB	M	BB	M	BB
European Union | EU									
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	0,72%	0,72%	0,23%	0,23%	N/A	N/A	0,95%[c]	0,95%[c]
Growney	Results	0,53%	0,26%	0,15%	0,16%	0,15%	0.12%	0,83%	0,54%
	Website	0,68%	0,38%	0,18%	0,16%	N/A	N/A	0,86%[b]	0,54%[b]
Quirion	Results[d]	0,48%	0,44%	0,17%	0,17%	N/A	N/A	0,65%	0,61%
	Website[d]	0,48%	0,50%	0,16%	0,16%	N/A	N/A	0,64%	0,66%
Whitebox	Results	0,35%	0,35%	0,21%	0,21%	N/A	N/A	0,53%	0,56%
	Website	0,35%	0,35%	0,21%	0,21%	N/A	N/A	0,56%[b]	0,56%[b]
Indexa Capital	Results	0,41%	0,38%	0,14%	0,14%	0,24%*	0,24%*	0,79%	0,76%
	Website	0,30%[a]	0,30%[a]	0,13%	0,13%	0,24%*	0,24%*	0,67%	0,67%
Yomoni	Results	N/A	N/A	N/A	N/A	N/A	N/A	1%-1,4%	1%
	Website	0,70%	0,70%	0,30%	0,30%	0,6%[e]	0,6%[e]	1,60%	1,60%
Investify	Results	0,80%	0,60%	0,14%	0,14%	0,20%	0,20%	1,14%	0,94%
	Website	1%[f]	0,80%[f]	0,15%	0,15%	N/A	N/A	1,15%[b]	0,95%[b]
Finanbest	Results[g]	0,39%	0,39%	0,26%	0,26%	0,13%	0,13%	0,78%	0,78%
	Website[g]	0,39%	0,39%	0,23%	0,23%	0,13%	0,13%	0,75%	0,75%
Nalo	Results	0,85%	0,85%	0,25%	0,25%	0,55%[e]	0,55%[e]	1,65%[!]	1,65%
	Website[h]	0,85%	0,85%	0,25%	0,25%	0,55%[e]	0,55%[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]	1,05%[i]	0,20%	0,20%	N/A	N/A	1,40%	1,25%
UK/USA/AUS/SG									
Evestor	Results	0,35%	0,35%	0,13%	0,16%	N/A	N/A	0,48%	0,51%
	Website	0,16%	0,25%	0,25%	0,25%	0,10%	0,10%	0,51%	0,51%
SigFig	Results	0,00%	0,25%	N/A	0,11%	N/A	N/A	N/A	0,36%
	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%	0,68%	0,20%	0,20%	N/A	N/A	1,00%	0,88%
Endowus	Results	0,60%	0,60%	0,24%	0,43%	N/A	N/A	0,84%	1,03%
	Website	0,60%	0,60%	0,40%	0,40%	N/A	N/A	1,00%	1,00%

Source: BETTER FINANCE own composition (2022)

[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 may differ depending on the jurisdiction, and the fees displayed are from a Belgium-based client.

Table 13. Fee variations

Robo-advisors *(sample)*		2019-2020		2020-2021		2021-2022	
		M	BB	M	BB	M	BB
Robo 1	Results	N/A	N/A	0,00%	0,00%	0,00%	0,00%
	Website	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Robo 2	Results	N/A	N/A	N/A	N/A	N/A	N/A
	Website	N/A	N/A	0,01%	N/A	0,00%	N/A
Robo 3	Results	0,01%	0,01%	-0,03%	-0,02%	0,00%	0,00%
	Website	-0,07%	-0,07%	-0,02%	-0,02%	0,00%	0,00%
Robo 4	Results	N/A	N/A	N/A	N/A	0,00%	-0,29%
	Website	0,44%	0,23%	0,00%	0,00%	-0,01%	-0,21%
Robo 5	Results	0,05%	0,05%	-0,63%	-0,25%	-0,08%	-0,07%
	Website	-0,02%	-0,02%	-0,60%	-0,25%	0,03%	0,03%
Robo 6	Results	-0,02%	0,00%	0,00%	0,00%	-0,01%	-0,01%
	Website	-0,27%	-0,22%	0,24%	0,21%	0,12%	0,09%
Robo 7	Results	-0,40%	-0,60%	-1,00%	-1,00%	0,00%	0,00%
	Website	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Robo 8	Results	-0,02%	-0,03%	-0,02%	-0,02%	0,00%	0,00%
	Website	N/A	N/A	0,00%	0,00%	-0,01%	-0,01%
Robo 13	Results	N/A	N/A	N/A	N/A	N/A	N/A
	Website	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%

Source: BETTER FINANCE's own computation based on information provided by the Robo-advisors' website vs. their investment recommendation.

Performed on a smaller group of platforms to enable comparison over years, and due to lack of data for previous years.

Interestingly, in 2022, some Robo-advisors under review again reduced their fees, albeit marginally compared to previous years – and no actual increases are to be reported once the investment advice is offered.

In detail, of the nine platforms sampled for the fee variation, three marginally reduced their charge compared to last year (results). The highest decrease is observed for Robo 4, decreasing fees of 0,29 point for the Baby Boomer profile. Other platforms have variations between -0.08 point and -0.01 point. Besides, the only increases are observed in the website information, which tend to reflect more closely the actual ones provided at time of results (with the investment advice), which is improving the transparency for pre-contractual comparison from the Robo-advisors selected in the sample.

Overall, the reduction of costs of Robo-advisors is an ongoing trend that has been also confirmed this year. As previously mentioned, this characteristic is the main advantage of the automated advice which potentially can offer better value for money to individual investors.

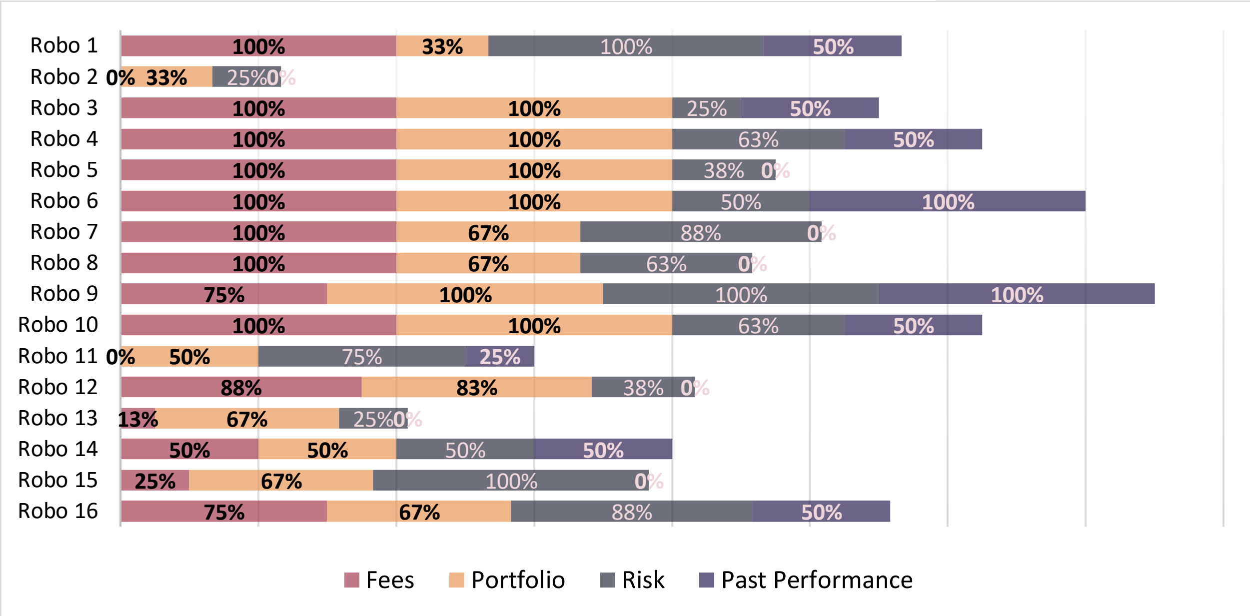
TRANSPARENCY

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

For additional information on the methodology applied to determine the score of the platforms please see Annex I under the section transparency.

Looking at the platforms analysed this year (Figure 9) we observed that a consistent number of Robo-advisors under scope present overall a high degree of transparency. It is interesting to note that the mystery shopping tends to reveal over the years a higher transparency in the EU/Europe (Robo 1 to 11/12) compared to non-European platforms.

Figure 9. Transparency



Even if the non-EU market is underrepresented in respect to the EU market (of Robo-advisors analysed in this report), the possible reason for this rather steady transparency rates in the EU could lie in a better consideration of EU requirements, providing slightly more information disclosure to retail investors. However, 2 European platforms (*Robo 2*, *Robo11)* score very low in the ranking, where *Robo 2* continuously features the lowest degree of transparency among all platforms over the years. Besides, only one EU Robo-advisor provides an easily accessible PDF detailed information alike a 'KID' at time of offer, whereas others mainly rely on their own (sometimes lacking) online information, which they displayed at their own discretion.

Transparency of Risk

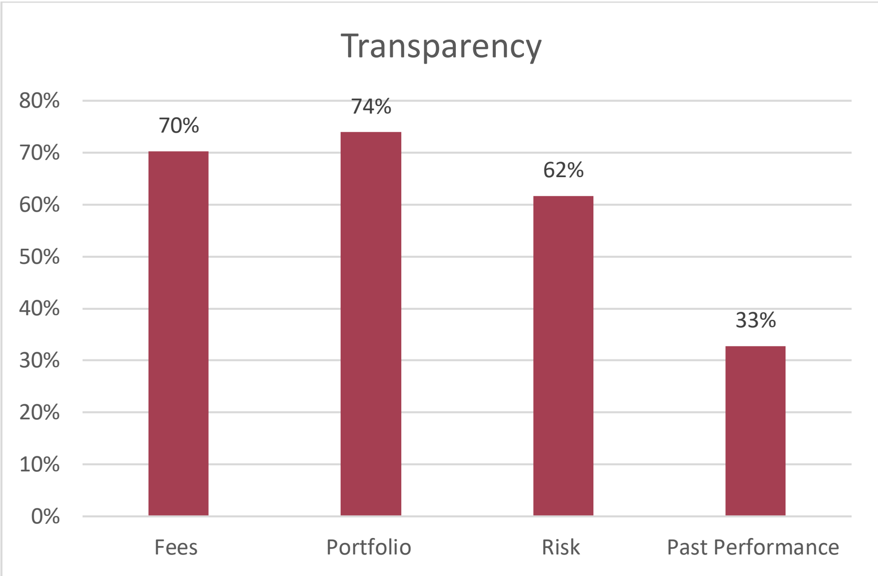
To ensure that the risk levels of the proposed investments by the Robo-advisors are clearly disclosed to the potential investor – all the more important taking into consideration the "Do-It-Yourself" approach of most Robo-advisors – this study explores the risk transparency of the different Robo-advisors. 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, the research team has analysed if the investment recommendation shows the following information:

- the risk-level of the advised investment strategy;
- future performance scenarios or estimates include best- and worst-case scenarios alongside the investment advice;
- a clear and visible warning on the potential loss of value of the initial investment alongside the investment advice;
- a clear and visible warning on the unreliability of past/future performance scenarios alongside the investment advice.

For additional information on the methodology applied to determine the score of the platforms please see Annex I under the section transparency.

Figure 10 below shows the average score of all Robo-advisors per category (fees, portfolio allocation, risk and past performance). It is quite concerning that all platforms reach on average 62% regarding the disclosure of risks of the investment proposed and only 33% on past performance disclosure overall.

Figure 10. Average transparency of Robo-advisors



Source: BETTER FINANCE own composition (2022), based on our sample selection.

In more details, only 9 Robo-advisors (among which 8 EU-based ones) out of 16 clearly disclose the risk level of the advised strategy, though the underlying details of what the risk level contains in practice 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. 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.

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 verified 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. However, 9 platforms out of 16 issue an unreliability warning of past or future performance scenarios and 12 platforms show worst- and best-case scenario in the future performance of the investment recommended.

Transparency of the portfolio composition

The research team has also investigated the degree of disclosure with regards to portfolio allocation including the split between stocks and bonds, further asset class specifications, geographical spread and detailed overview of underlying funds. Overall, the portfolio allocation seems to reach the highest degree of transparency (74%) compared to fees, past performance and risk as illustrated above.

All 16 platforms provide the potential investor with a simple overview of the content and allocation of their investment portfolio. The degrees to which details are provided vary considerably. For example, 15 Robo-advisors provide clear information on asset class allocation but only 9 also give funds specifications and detailed information. Overall, the level of transparency of the portfolio allocation seems to reach the highest degree of transparency compared to fees, past performance, and risk.

Transparency of Past Performance

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 deemed 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). Unfortunately, such warnings are missing from most of the Robo-advisors covered in this study. They are either completely left out or presented through vague, unsatisfactory formulations or not clearly visible.

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.

The level of transparency of past performance takes into consideration if the Robo-advice shows the past performance alongside with the investment recommendation. Additional points are provided if the past performance is presented against a benchmark for comparison. It is not surprising that information on past performance is the less transparent compared to the other indicators reaching on average 31% score of all platforms under scope. Only 9 out of 16 disclose past performance, but only 2 Robo disclose past performance against a reference benchmark.

Transparency of fees

One of the comparative advantages Robo-advisors have over more traditional providers of investment advice is lower fees on average. While an exact overview and comparison of fees has been outlined earlier in this research report, this section will focus on the transparency of fees as presented to the investors. The degree of transparency is given by the following aspects:

- Fees are disclosed alongside the investment advice provided at the end of the questionnaire.
- Allocation of fees: split between service or management fees and underlying fund fees.
- The expected returns include fees.
- Easy access to the information on fees and non-misleading presentation of fees

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, we observed that about 75% of the platforms disclose fees after the questionnaire once the investment advice is presented to the investor. A smaller group of platforms (62%) provides detailed fees information, specifying the composition of the total fee. The same amount specifies that their future scenario projections and expected returns are after fees. However, information on fees is not always easy to find and understand for small investors, not least because the degree of clarity and presentation of fees varies considerably from one platform to another.

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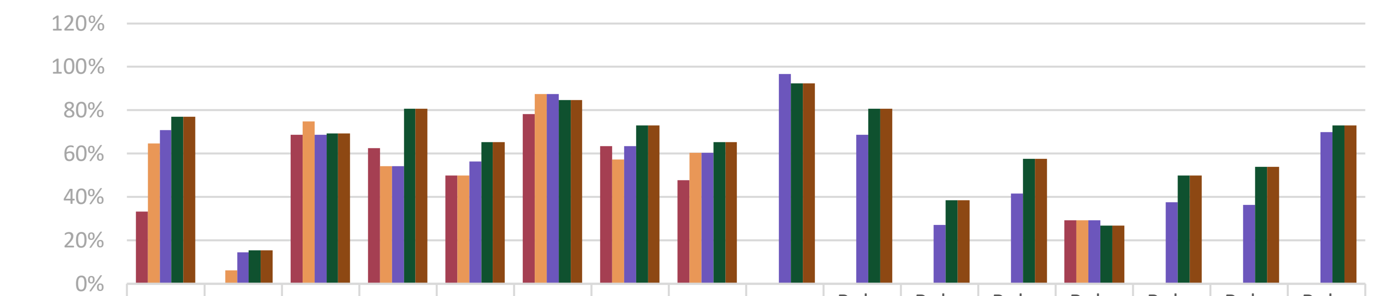
[90] European Commission, ‘Distribution Systems of Retail Investment Products Across the European Union: Final Report’ (2018) European Commission, available at: https://ec.europa.eu/info/sites/info/files/180425-retail-investment-products-distribution-systems_en.pdf.

Comparison

Figure 11 shows the comparison of weighted average scores given to each platform from 2018 to 2022. Even if some Robo-advisors made some efforts to improve their degree of transparency, there are no outstanding changes overtime – and we observe an overall stagnation in 2022.

Figure 12, showing the combined score of a group of Robo-advisors per each category (Fees, Portfolio, Risk and Past Performance) from 2018 to 2022, reveals that Robo-advisors have slowly improved their scores along the years. However, if the transparency of fees improved in 2021, the past performance is the least performing indicator and has kept stagnating amongst the covered platforms. This year, what is striking is the overall stagnation, also in light of risk indication.

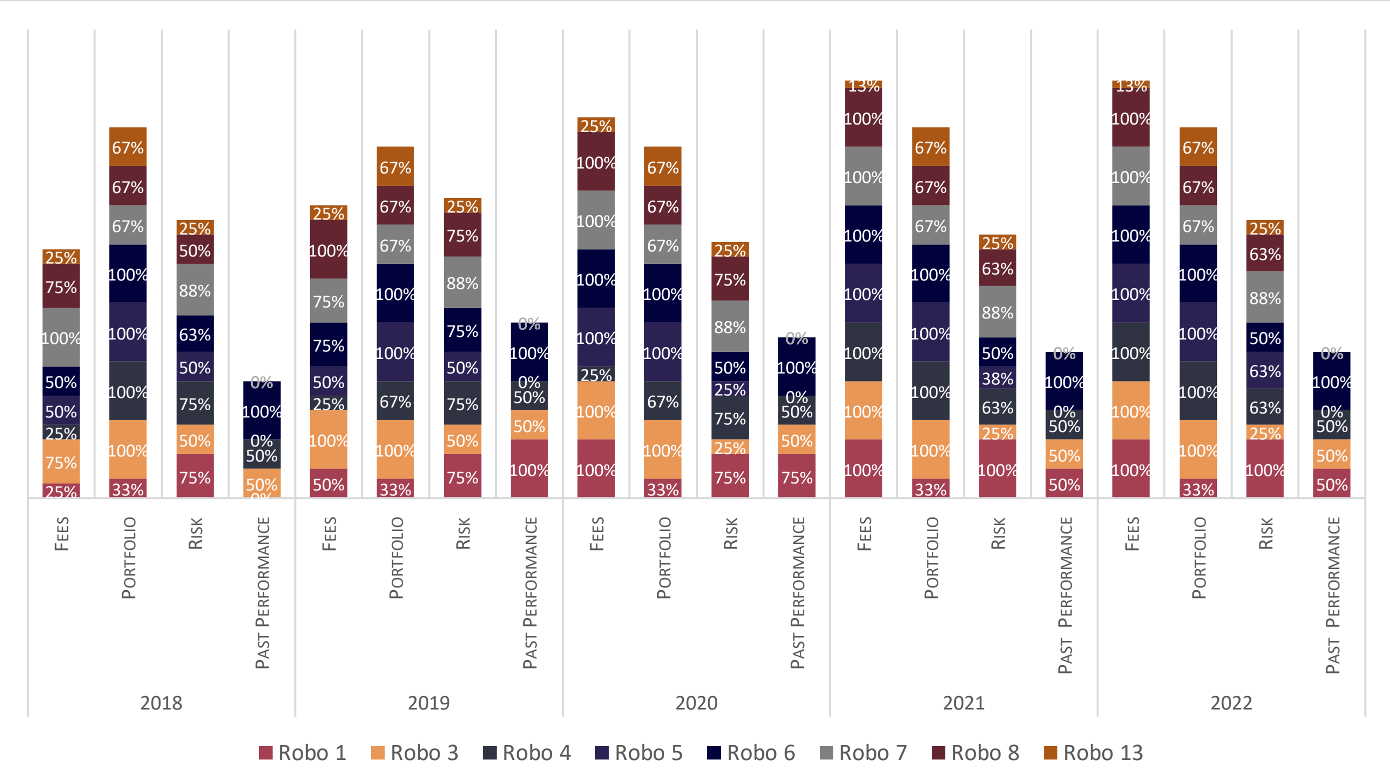
Figure 11. Comparison of overall transparency scores



	Robo 1	Robo 2	Robo 3	Robo 4	Robo 5	Robo 6	Robo 7	Robo 8	Robo 9	Robo 10	Robo 11	Robo 12	Robo 13	Robo 14	Robo 15	Robo 16
2018	33%	0	69%	63%	50%	78%	64%	48%	0	0	0	0	29%	0	0	0
2019	65%	6%	75%	54%	50%	88%	57%	60%	0	0	0	0	29%	0	0	0
2020	71%	15%	69%	54%	56%	88%	64%	60%	97%	69%	27%	42%	29%	38%	36%	70%
2021	77%	15%	69%	81%	65%	85%	73%	65%	92%	81%	38%	58%	27%	50%	54%	73%
2022	77%	15%	69%	81%	65%	85%	73%	65%	92%	81%	38%	58%	27%	50%	54%	73%

Source: BETTER FINANCE own composition

Figure 12. Evolution of Robo-advisors' transparency – Breakdown by transparency criteria



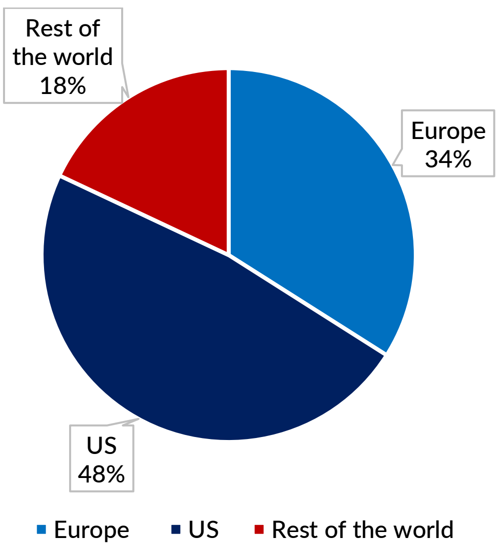
Source: BETTER FINANCE own composition

SUSTAINABLE INVESTING

We observed that since the last report more platforms ask specific questions aimed at discerning the sustainability preferences of their potential clients. Only two Robo-advisors however allow for a comprehensive choice between a range of thematic options to be selected during the questionnaire. The remainder of the Robo-advisors propose sustainable investments to a very limited extent and often ask to change sustainability profile completely as no product is offered once a certain threshold of individual choices (regarding sustainability) are indicated in the questionnaires. Finally, as seen from our previous report, none of the Robo-advisors continue to disclose information on the sustainable portfolio / investing strategy (integration, exclusion, engagement, impact), despite some use of thematic options like "Energy".

Globally, the proportion of sustainable investing assets has grown and makes up 36% of the total assets under management in 2020, up from 33% by end-2017 and 27% by end-2015[91]. With this in mind, various regulatory changes have taken effect to reflect the industry and consumer preferences for sustainable investing since. However, despite the efforts on an EU level, bringing sustainability forward with pace and efficiency proves to be more challenging than initially anticipated. Definitions and guides vis-à-vis sustainable investing and concepts like "greenwashing" are yet to become understood by market participants and supervisors alike.

Figure 13: Global sustainable investing assets



As such, following the publication of the Commission's Action Plan[92], the MiFID II Delegated Regulation[93] has been updated to integrate sustainability factors, risk, preferences and product governance obligations for operating investment companies which applied from August and November 2022 respectively. These amendments require financial advisors to ask their clients about their sustainable preferences and take into consideration their sustainability preferences into the suitability assessment[94]. Since our last report where we observed that Robo-advisors do not ask any sustainability preferences to their clients, in this iteration our findings show a more positive outcome albeit to a very limited extent.

The Robo-advisors under review in 2022 including platforms from Europe, USA, Singapore and Australia (Table 14), show that 12 out of 16 platforms provide sustainable options (of which 9 are EU-based and 3 are non-EU), which is an increase of over 33% in comparison to our previous report, where 8 out of 18 platforms provided sustainable options. Following the European Securities and Markets Authority (ESMA) MIFID II suitability assessment revisions, most of the Robo-advisors under scope make specific questions regarding the sustainability preferences of their potential clients. It should be noted that while ESMA's guides are applicable to platforms operating in the EU, it is interesting to see that those out of scope (USA, Singapore and Australia) also include some sustainability considerations, albeit limited. Overall, this practice varies and out of those that provide options for sustainable finance investments, only 2 provide a detailed and comprehensive information and questioning during the questionnaire stage, while the remaining 10 do not.

[91] Global Sustainable Investment Alliance, Review 2020, available at: http://www.gsi-alliance.org/wp-content/uploads/2021/08/GSIR-20201.pdf
[92] European Commission, Renewed sustainable finance strategy and implementation of the action plan on financing sustainable growth 2020, available at: https://finance.ec.europa.eu/publications/renewed-sustainable-finance-strategy-and-implementation-action-plan-financing-sustainable-growth_en
[93] European Commission Delegated Regulation 2021I1253, available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R1253&from=EN
[94] European Securities and Markets Authority (ESMA), 2022 Guidelines on MiFID II suitability requirements, available at: https://www.esma.europa.eu/press-news/esma-news/esma-publishes-final-guidelines-mifid-ii-suitability-requirements-0

Table 14: Robo-advisors' sustainability features

	Risk		Fees		Return Projection	
	M	BB	M	BB	M	BB
EU-Based						
Robo 3	moderate	moderate	0,16% ETF costs	0,18% ETF costs	2,19%	4,16%
Robo 4	/		0.17% ETF costs		/	
Robo 5	return oriented	safety oriented	0,57%	0,56%	7,44%	3,95%
Robo 6	5	2	0,84%	0,81%	1,90%	0,90%
Robo 7	SRRI 4	SRRI 3	1,20%	1%	3,30%	1,70%
Robo 8	/		1,13%	0,94%	1,47%	3,36%
Robo 9	middle	middle	0,65%	0.65%	5,30%	5,30%
Robo 10	moderate	moderate	1,43%	1,60%	2,30%	5,05%
Robo 11	/					
Non-EU based						
Robo 14	balanced	balanced	/		6,75%	6,75%
Robo 15	/					
Robo 16	very aggressive	very conservative	1,60%	1,32%	2,50%	2,50%

Source: BETTER FINANCE composition from Robo-advisors' platforms (2022 websites).

Here we compare the risk, fees and growth rate depending on profile (M;BB) based on the available data from the Robo-advisors under scope.

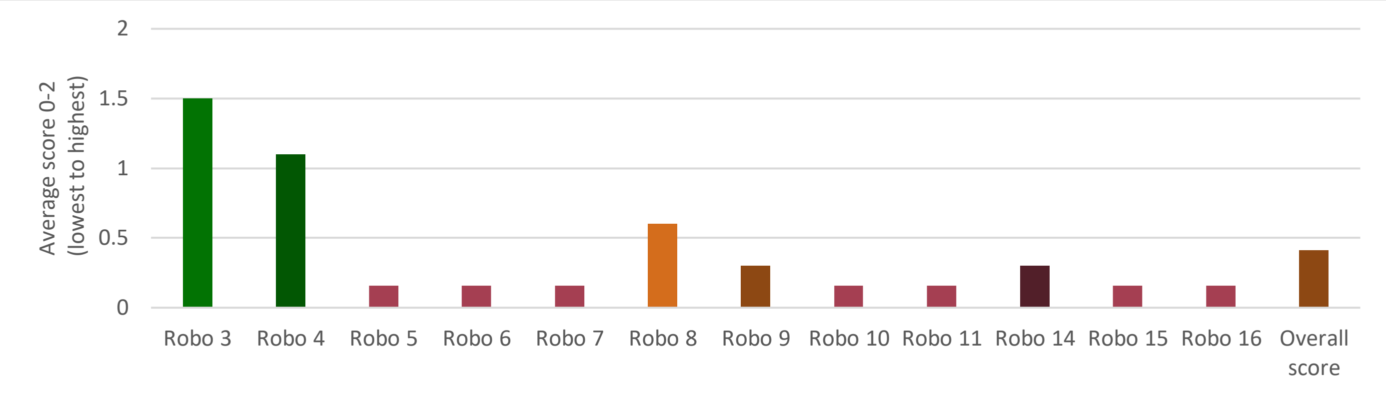
Based on publicly available data from the Robo-advisors, we determined that there isn't enough data provided to assess risk, fees or growth

The risk profiles based on our algorithm testing methodology between 'Millennials (M)' and 'Baby-boomers (BB)' show that despite expectations to see diverging risk appetites and overall risk tolerance between the two, there are only 3 instances in which risk profiles match such expectations following completion of the Robo questionnaires. Examples including opposite spectrum of risk profiles for Robo 4, Robo 6, and Robo 16. Another interesting finding here comes from the lack of assigned risk profiles that usually follow after filling out the questionnaires with Robo-advisors, as seen in 4 of the providers, namely Robo 4, Robo 8, Robo 11 and Robo 15.

While observing the growth rate projections of sustainable investments, we found that figures occasionally correspond with the risk profile, where a higher risk appetite is associated with higher projected growth rates and lower risk profiles correspond with reduced projections of growth rates. Interestingly, in the cases of Robo 3, 10 where risk profiles appear the same for both 'M' and 'BB', the growth rates for 'BB' are nearly double for the former and over double than 'M' in the latter instance. Similarly, Robo 16 shows both risk profiles as the opposite end of the spectrum to one another, while the growth rate projections are the same.

In assessing the level of appropriateness in regard to the suitability and sustainability questions provided by Robo-advisors following the revisions under MiFID II, we conclude that unfortunately the requirement is only translated into a mere "tick the box exercise" for the majority of Robo-advisors under scope. This is alarming as it shows a mismatch between client's expectations to exercise their potential sustainability preferences whereby Robo-advisors lack appropriate tools to determine and progress with a client's suitability preferences in relation to sustainability. The long-term consequences of such mismatch are strongly suggestive of financial consumers' distrust and a potential to direct capital flows towards non-ESG related fields.

Figure 14: Ranking and average sustainability inclusion per Robo-advisor



Source: BETTER FINANCE composition and own calculation.

Overall, the sustainability inclusion per Robo-advisor remains very low and using our own calculations we determined that only Robo 3 and Robo 4 are better placed in integrating and assessing a client's suitability and sustainability preferences during the questionnaires, and thus are ranked as first and second place respectively. The remaining 10 Robo-advisors under scope that integrate sustainability preferences are somewhat aligned in their suboptimal scores, with the exception of Robo 8 which shows a slightly better performance in terms of sustainability integration during the questionnaires. It is worth to note that since revisions to MiFID II and sustainability preferences had taken place in Q4 of 2022, we expect more Robo-advisors to better comply with ESMA's guidelines and ultimately enhance their sustainability related questions and integration for potential new clients in the future.

Methodology

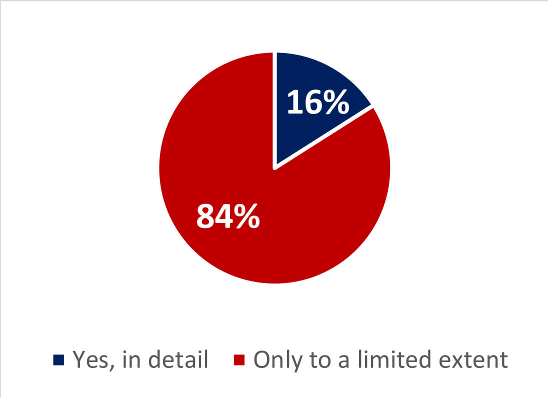
Based on ESMA's guidelines on certain aspects of the MiFID II suitability requirements on sustainability preferences[95], BETTER FINANCE consolidated 6 questions which encompass the extent of sustainability inclusion a company (Robo-advisors) must address for its potential clients. For each question, each platform is allocated a score between 0-2, whereby 0 indicates no provisions, 1 some/limited provisions and 2 detailed provisions of information regarding the suitability and sustainability preferences. In these scenarios, what constitutes a limited extent and therefore a score of 1, is overly simplistic explanation/offer which does not differentiate or add further clarity (for example instances where a question is asked but no follow-up question/option is available thereafter). Where a platform is awarded a score of 2, it is based on comprehensive inclusion of information and consideration of clients' sustainability options, as well as general sustainability terminology and wider follow-up to ESMA's guidelines.

The research team assessed Robo-advisors based on their level of responsiveness to the below questions:

1. Does the provider offer sustainable investments? (Yes/No/To a limited extent)
2. Does the provider let you choose sustainable investments according to preferences?
3. Does the provider ask for minimum preferences in relation to sustainability?
4. Does the provider inform you of its considerations to any of the ongoing EU Sustainable Finance requirements (SFDR, PAI, etc...)?
5. Are providers explaining terms and concepts used when referring to environmental, social and governance aspects?
6. Does the provider ask about specific focus on either environmental, social or governance sustainability factors or a combination of them or whether the client does not have such a focus?

[95] ESMA Guidelines on certain aspects of the MiFID II suitability requirements (September 23, 2022), pp. 46-47 suitability and sustainability preferences, available at: https://www.esma.europa.eu/sites/default/files/library/esma35-43-3172_final_report_on_mifid_ii_guidelines_on_suitability.pdf

Figure 15: Does the provider offer sustainable investments?



Source: BETTER FINANCE composition and own calculation.

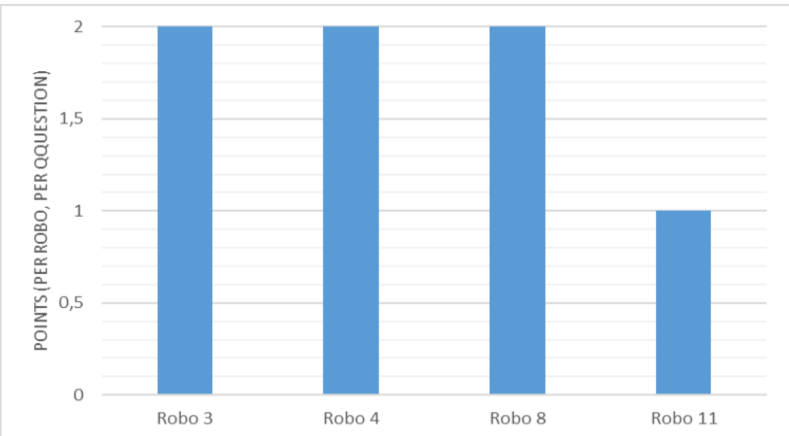
Based on the methodology outlined above, and in reference to the updated MiFID II requirements and guidelines on suitability and sustainability assessment and integration, only 16% of the Robo-advisors offer sustainable investments in a detailed approach. This includes a summary of key concepts throughout the questionnaire as well as the possibility to follow-through the sustainability preferences, for example allowing clients to conduct own composition of sustainability related investments alongside a summary of projected returns based purely on sustainability preferences.

The remaining 84% of Robo-advisors offer sustainable investments only to a limited extent i.e without provisions of definitions on key concepts, or a final sustainability preference being taken into account, with many Robo-advisors claiming that the own composition and division of sustainability preferences of clients are currently unavailable and therefore the Robo-advisor encourages the client to either change their preferences or allow the platform to adjust the preferences on their own.

BETTER FINANCE is aware that under ESMA's guidelines, platforms are allowed (under certain conditions – such as clients selecting multiple categories of sustainability) to allocate at least one of the preferred options stipulated by the client. However, since Robo-advisors under scope omit mentioning which of the options is indeed taken forward under these circumstances, investors are left with no way of knowing whether their preferences (or at least one of them) has been taken into account.

Additionally, in most of those cases, Robo-advisors do not illustrate in their final assessment the projected returns and in some instances overall assessment on risk and other information specifically related to sustainability choices, which further skews retail investors' understanding of the financial products they may be purchasing. Therefore, clients are left with no further guidance to understand how their choices or those made by the Robo-advisors have influenced the end outcome.

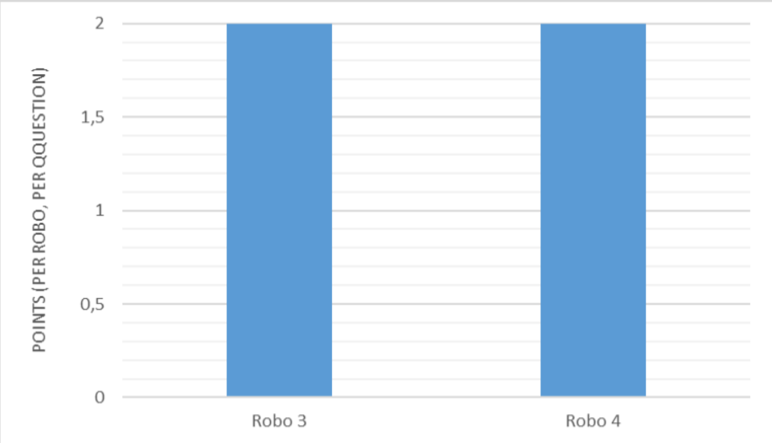
Figure 16: Does the provider let you choose sustainable investments according to preferences?



Source: BETTER FINANCE composition and own calculation.

Only a handful of Robo-advisors allow clients to make their own sustainable investments according to preferences i.e. in energy or other sustainability-related thematic areas. The highest scorers and providers of this option are Robo 3, Robo 4 and Robo 8 (with two points each whereby the choices and subsequent follow-up questions meet client preferences regarding sustainability to a large extent). Robo 9 does this too but to a limited extent and is therefore awarded a score of 1. While in theory the remaining Robo-advisors do have a question with options on sustainable investments, ultimately once a client makes any choices for certain sustainable investments in the follow-up questions, they are informed that such choices cannot be met and prompt the client to either adapt choices or allow the platform to update choices for them. Hence the exercise for the remaining Robo-advisors ultimately becomes redundant, and thus limiting the sustainability options for clients.

Figure 17: Does the provider ask for minimum preferences in relation to sustainability?



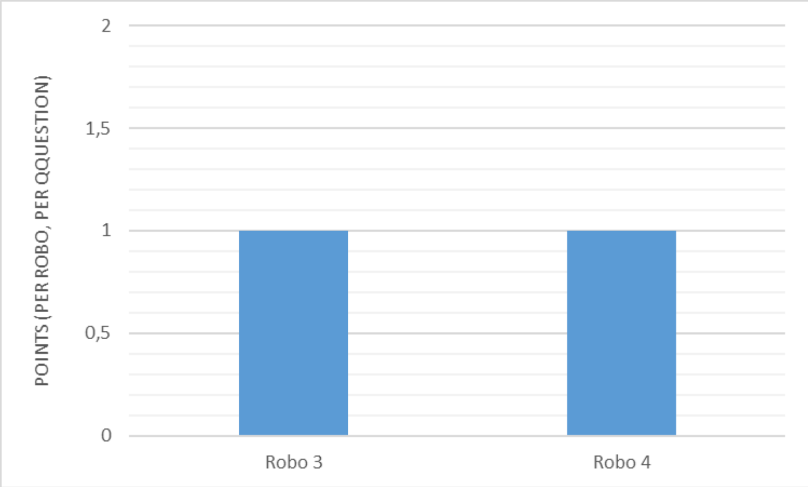
Source: BETTER FINANCE composition and own calculation.

Under this question, the only providers which ask for minimum sustainability preferences, usually expressed in percentages, are Robo 3 and Robo 4 which are awarded the highest points based on our methodology and calculations. The remaining Robo-advisors do not provide for a minimum threshold regarding sustainability preferences.

Does the provider inform you of its considerations to any of the ongoing EU Sustainable Finance requirements (SFDR, PAI, etc...)?

None of the platforms inform clients of the ways they consider ongoing EU Sustainable Finance requirements, including but not limited to the Sustainable Finance Disclosure Regulation (SFDR), Principle Adverse Impact (PAI), Taxonomy and others. Indeed, Robo-advisors make an attempt to only highlight EU regulation and its subsequent development and evolution making the choices for sustainable investments more narrow and therefore harder to implement due to data restrictions. In most of those cases, such information is available on their website and not during the questionnaire stage. It should also be noted that suitability guidelines published by ESMA explicitly mention that platforms should use neutral language and not promote sustainable or other types of investments – however, currently platforms are not even integrating basic tents of the EU Sustainable Finance concepts. This could also be explained by "reputational risks" and fears of committing so-called "greenwashing" in interpreting and applying sustainable finance concepts in a way that may be at odds with actual intentions of guidelines i.e., misleading clients with wrong definitions and promoting financial products that in fact are not taking into consideration various requirements surrounding the EU's Taxonomy and SFDR to name a few.

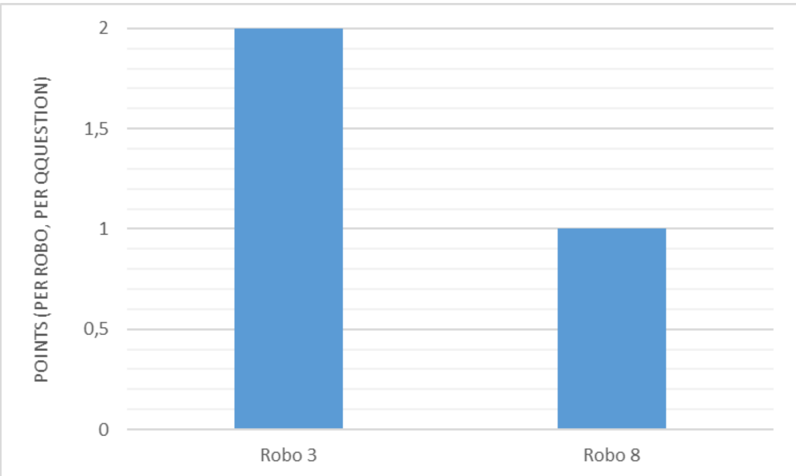
Figure 18: Are providers explaining terms / concepts used when referring to 'ESG' aspects?



Source: BETTER FINANCE composition and own calculation.

Under this question, we see that only Robo 3 and Robo 4 are providing explanation, albeit to a limited extent, on key terms regarding environmental, social and governance aspects. Here the Robo platforms provide an overview of those concepts during the questionnaire but do not exhibit how such terms can be utilised regarding specific client choices be it on environmental investments, social or governance. Both of the platforms, however, are overall better equipped at providing some insights and summaries of wider concepts than any other Robo-advisors under scope. Interestingly, both platforms utilise definitions of ESG terms in both questionnaires and respective websites in which dedicated pages provide insights regarding ESG.

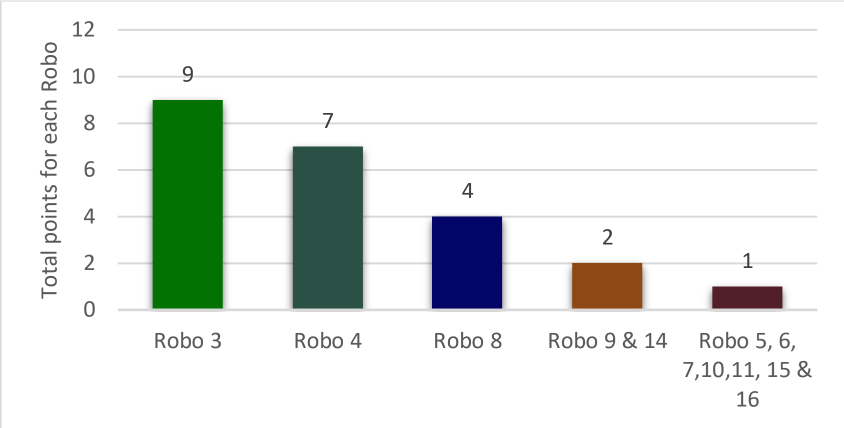
Figure 19: Does the provider ask about specific focus on either 'E, S, or G' sustainability factors or a combination of them or whether the client does not have such a focus?



Source: BETTER FINANCE composition and own calculation.

For the final question based on our methodology and guidelines proposed by ESMA on suitability and sustainability preferences in relation to client choices, we found that only 2 Robo platforms provide the option for specific ESG factors or their combination to be utilised by clients. Robo 3 does this to a greater extent when compared to Robo 8 which only offers this without the option for combining environmental, social and governance aspects in terms of investments. The remaining Robo-advisors lack this provision entirely and therefore are deemed as inefficient in this regard and not awarded points based on our methodology.

Figure 20: Ranking of Robo-advisors based on sustainability inclusion criteria



Based on the above-mentioned methodology and subsequent integration of sustainability preferences for clients, we ranked the Robo platforms with their respective scores. Out of the 6 questions with a possible 12-point cap, the highest scorer in terms of Robo-advisors is Robo 3 with 9 points. This platform did not offer any insights under Question 4 (on information regarding EU sustainable finance requirements and legislation) and ultimately did not receive any points under this category. Similarly, it provided very limited information on the concepts of environmental, social and governance aspects which led to the platform only receiving a single point for this respective category.

In second place, Robo 4 with 7 points also underperformed in the same categories as Robo 3, but in addition failed to ask clients about specific focus or combination of ESG factors. Robo 8 was awarded 4 points out of a maximum 12, due to its limited coverage on most of the sustainability methodology and questions, despite its very well integrated approach to provision of sustainable investments. Robo 9 and 14 scored 2 out of 12, where one of them is non-EU platform. The remainder of Robo-advisory platforms only received a point each for their overall sustainability preferences and integration of clients' choices; those include the 2 non-EU based ones under scope (out of 3), but also 5 EU-based ones (out of the 9 under scope).

CONCLUSION

In comparison to our observations from previous reports on Robo-advisors with more recent findings suggest some positive changes as regards to sustainability integration on the side of Robo platforms, particularly in the EU. However, the level of sustainability preferences and choices remain relatively low, with only 2 Robo-advisors allowing for rather comprehensive information and options on sustainability preferences (Robo 3 and 4).

BETTER FINANCE appreciates the fact that due to the recent nature of MiFID II revisions and guidelines on suitability preferences may influence the results at such an early stage. We expect to see Robo-advisors implement a more sufficient approach to assessing client's sustainability preferences, whether this is done through insights on key topics and terms or providing clients the option of custom and more inclusive sustainable investment options.

Out of the total 16 platforms, 12 provide investments labelled as sustainable, but do not follow through with any insights and/or tangible products. This may discourage existing or new clients in seeking out sustainable investments, since the process is only translated as a tick a box exercise. BETTER FINANCE is of the view that sustainable finance concepts are evolving and appreciates some of the limitations to ESMA's guides and subsequent challenges Robo-advisors may face in translating EU requirements and legislation into practical solutions for clients. However, retail non-professional investors are in need of protection and clear and easy to understand information that can help with their respective investment choices. We also expect that more platforms will better develop their questionnaires, additional information on fees, sustainability concepts and ultimately better reflect clients' sustainability preferences.

POLICY RECOMMENDATIONS

Following BETTER FINANCE consecutive years of research on Robo-advice, and besides recurring concerns, we keep finding real added value in the realm of investment offerings from Robo-advisors, as they often prove to provide independent advice while allowing value for money through the use of low-cost index funds (contrary to traditional financial advisors) in the composition of the investment portfolios they recommend.

In this sense, we see an opportunity of uptake of the "PEEP" as a cost-effective pan-European pension product in this market segment. In addition, four main areas should still be addressed as regards investor protection awareness, investment advice, disclosure and sustainable investing.

1. PRELIMINARY REMARK: ROBO-ADVISORS AND PEPP

Pan-European Personal Pensions (PEPP) are a new type of voluntary pension savings products created by EU Regulation 2019/1238. The PEPP constitutes an interesting novelty for pension savers for two main reasons: first, it is “passportable”, which in the EU jargon means that it can be transferred across different EU countries when its holder changes residence; second, under its default investment option (the so-called “Basic PEPP”), fees are capped at 1% of the accumulated capital per annum, cheaper than most pension savings products on offer across the EU.[96] Unfortunately for consumers, one year after the legal basis for offering PEPP became applicable (on 22 March 2022), only one financial institution offers PEPP[97], a rather disappointing start for a promising product.

We see the low-cost business model of Robo-advisors as a potential avenue for the development of PEPP[98]. While traditional institutions may find it difficult to generate profit with a product where fees are capped at 1%, Robo-advisors, as this report has shown, manage to offer retail investment products with similar and even lower fees. The PEPP framework, with its guarantees, its simplicity and its mobility, might prove to be a good match for Robo-advisory platforms seeking EU-wide development, attracting a new generation of tech-savvy, cost-mindful savers.

2. RAISE AWARENESS OF INVESTOR PROTECTION REGIMES

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.

[96] BETTER FINANCE (2022), “Long-term & Pension Savings – The Real Return”. Available at: https://betterfinance.eu/publication/the-real-return-long-term-pension-savings-report-2022-edition/

[97] EIOPA Central Register, https://pepp.eiopa.europa.eu/

[98] To this day, ‘Finax’ is the first and sole automated investment planform (Robo-advisor) to have launched a ‘PEPP’ offer in 2022, https://www.finax.eu/en/products/pepp.

> "*Respondents who trust the European Union are more likely to invest in capital markets and diversify their savings*".[99]

ESMA and the 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 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.

3. INVESTMENT ADVICE

For the fifth time in a row, the findings of our robo-advice report show that all platforms do provide investment advice. The European Commission should consider adopting the CESR Guidelines on investment advice under the MiFID II Delegated Regulation (EU) 2017/565, especially to clarify that:

- both explicit and implicit advice fall under the scope of Arts. 4(1)(4), 24(1), 24(7) and 25(1);
- implicit advice can take either the form of actions or behaviour, including written and oral communications, which by their purpose or reasonable impression, amount to investment advice as regulated under the abovementioned provisions
- practices meant to circumvent the rules applicable to investment advice are explicitly banned and sanctioned;

For the purpose of implicit advice, the Level 2 MiFID II regulation should clarify the two circumstances, i.e.:

- purpose: if the nature and aim of the communication is to guide or steer the client's investment decision in a certain direction through the power of the "*value judgment on its relevance*" towards the client;
- reasonable impression: if the communication/behaviour of the advisor makes the client believe that the recommendation is (a) made in consideration of personal circumstances and/or preferences and (b) appears suitable for him/her.

To progress towards the EU Commission's stated goal of ensuring "bias-free advice"[100] and create a level-playing field for the few investment market participants that strive to offer such real – non-conflicted (independent) – advice to retail investors, the European Commission should also:

- Ban inducements, particularly on execution-only services
- Clarify and specify existing 'Value for Money' rules.

Prominently, the European Commission, with the advice of ESMA, EIOPA, and EBA, should harmonise the definition and applicable rules for financial advice across all EU categories of retail financial products.

4. ALGORYTMS APPROPRIATENESS, AI FRAMEWORK AND OPEN FINANCE

The use of algorithms, Artificial Intelligence (AI) and automated decision-making (ADM) produce several advantages as increased accuracy, speed and reduced costs, on the other hand. However, 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 even arbitrary discrimination. These risks could further undermine EU citizens' confidence in the financial system and financial services. The element of trust was also underlined in

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[99] 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.

[100] See the European commission (EC) 'Capital markets union 2020 action plan': A capital markets union (CMU) for people and businesses, September 2020, https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/capital-markets-union/capital-markets-union-2020-action-plan_en

the general comments of the *Draft Report with recommendations to the Commission on Digital Finance*[101] in the context of ensuring that operators, consumers and supervisors are able to have confidence in digital finance.

BETTER FINANCE strongly supports the proposal for an AI framework that allows providing legal and ethical clarity on the use of Artificial Intelligence. We have raised on several occasions in our policy recommendations and research on Robo-advisors that in order to regain the trust of consumers it is necessary to propose a legislative framework for Artificial Intelligence and to ensure that the use of algorithm is fair, transparent and accountable to consumers and does not harm EU citizens' fundamental rights.

In addition, we have for long advised undertaking an in-depth fitness check of all relevant EU legislations in the insurance and financial sector in view of proposing legislative updates where necessary.

However, requirements on the use of AI should cover entirely the EU financial services. The provision on the voluntary creation and application of codes on the use of AI in other financial services (other than credit directive and credit institutions) will not be enough to address its potential risks in face of consumer detriment in the retail financial market. The findings of this research show that there are persistent issues in terms of reliability of the algorithms when used to propose investments to financial services users.

As we have observed, new FinTech platforms such as Robo-advisors, operate as an alternative to more traditional financial advisors, with comparatively lower fees, offering access to simpler and cheaper products such as ETFs. However, due to lack of "human" intervention, the use of the algorithms may cause risks to consumers concerning e.g., the level of suitability of the investment advice:

a. investment advice inconsistent with the investor and risk profile of the mystery shoppers.
b. strong discrepancy in terms of investment gains and high dispersion of asset allocation for the same investor profile.

Finally, it remains to assess how the envisaged Open Finance framework could benefit citizens as investors without bringing new risks as further data may be compiled against their suitability questionnaire.

We therefore call the EU Commission and ESMA to investigate on the algorithms used by Robo-advisors in order to test their appropriateness and the suitability for retail investors and its transparency. As previously, mentioned Robo-advisors do not disclose information regarding the algorithm, or the asset allocation technique used to propose retail investments. The assessment of the use cases of other clients financial data sharing by (non)financial institutions in light of open finance should also be carefully considered in the context of investment. Such use of data should benefit the client without creating market and offer discrimination. Therefore, checks and balances will be needed, and clients should retain ownership of their data where consent as a primary consideration, and be able to opt in/out at any time – without any prejudice.

EU ARTIFICIAL INTELLIGENCE ACT

The European Commission has proposed *a Regulation laying down rules on Artificial Intelligence*. Its initial aim is to provide a uniformed legal framework for the internal market regarding the marketing and the use of Artificial intelligence (AI). The proposal establishes requirements for the use of AI in several activities and sectors. Regarding financial services, the proposal tackles the use of AI on the assessment of creditworthiness and credit scores. Individuals should be informed that they are interacting with AI. Transparency requirements also include chatbots. Credit institution will also need to observe a series of requirements based on "high risk" criteria and to complement AI deployment with human oversight. However, the requirements for the deployment of AI address only in part financial services and do not cover the use of AI in the entire financial sector, only encouraging financial firms to establish (voluntarily) and apply a code of conducts on the use of AI. The proposal is currently under review, its compromise version shows disagreements in the definition of the AI systems.

EC PROPOSAL ON OPEN FINANCE

As part of the Digital Finance Strategy, the European Commission announced a proposal on 'open finance'; which would entail access and re-use of customers' data (in principle upon consent) and across a range of financial services. its application, use cases and form in terms of data protection are currently the subject of an expertise.

This open finance proposal will come along the review of the PSD2 (payments service directive) and is scheduled to be delivered by the EC in end of 2023.

[101] 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.

5. ACTUAL COST, RISK AND PERFORMANCE DISCLOSURE

Once again, Robo-advisors investment recommendations display important divergences in return estimations, potentially misleading the retail investor. EU law should require investment advisors to present the main characteristics of the advice (risk, fees, past performance of the portfolio) in a way similar to that of the former UCITS KIID. Such disclosure is all the more important as the UCITS KIID disclosure regime, which is actual and accurate, is leaving place to a less transparent and reliable the PRIIPs KID regime in 2023.

Through the disruptive power of FinTech, there is an opportunity to address market inefficiencies and bring greater diversification, by including alternative providers, to a rather oligopolistic market. For this competition to "work for the people" (as per the CMU Action Plan), the EU Commission should consider the following initiatives for EU financial service users:

- Establishing independent savings products databases which imply standardised Key Information on actual costs, (past) performances and risks ("garbage-in; garbage-out").
- These independent databases (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* (several web comparing tools feed on this Portal).
- Rethinking mandatory disclosure documents like KID for online/ smart phone adaptation, for example using drawdowns and further contextual links for more detailed and standardised information.
- Enabling individual investor's 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 and exercising voting rights for individual shareholders and should be extended to funds investors. Such recommendations have also been discussed, in particular for direct shareholders, at the "HLF CMU", which released its report on 10 June 2020.

As seen in our study, they exist a wide variety of how the investment advice is disclosed between Robo-advisor. Notably, risk indicators are not uniform as platforms use them at their own discretion, whereas the recurrent lack of benchmark against historical returns makes it impractical for investors to assess the product they are presented with.

Therefore, we also call for a proper of a uniform risk-model application (SRI/SRRI) from all platforms, while we deem necessary to enforce presenting historical returns against benchmark for comparability.

6. 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.[102] Therefore, BETTER FINANCE continues to call on EU Authorities to fulfil their legal duty to promote simplicity and transparency of investment products, also with regards to their information and disclosures. Moreover, the advent of independent comparative tools of investment products should be fostered by ensuring simplicity, reliability and comparability of information (see previous recommendation on establishing a centralised database of such products). This would in turn favour financial education and adequacy and accessibility of information in a simple manner for consumers.

[102] See BETTER FINANCE's press release and assessment of ESAs reports on cost and past performance (2019): https://betterfinance.eu/wp-content/uploads/PR-ESAs-Reports-230119.pdf.

7. SUSTAINABLE INVESTING

Sustainability related products, services and preferences are becoming more integrated among various EU legislative initiatives, however there is an urgent need for greater harmonisation as well as simplicity in order to help retail investors understand and equally utilise sustainability provisions.

The main barriers remain with definitions of key terms on one hand, which needs to be addressed via regulatory and supervisory bodies' help in order to better meet retail investors' expectations of increased quality and comparability of disclosures on sustainable products, and lack of sustainability data and transparency from corporates on the other.

1. **EU taxonomy**[103]: A classification system that lists all environmentally sustainable economic activities and sectors. The taxonomy will have a central role in helping investors, policymakers and companies to identify sustainable economic activities. The classification will serve as a basis to reorient the capital market towards more sustainable assets.
   - **The Taxonomy should be expanded to encapsulate transitional activities to strengthen path towards overall sustainability aspirations across the EU.**
2. **Corporate Sustainability Reporting Directive**[104]: Imposes sustainability reporting requirements on a large number of EU and non-EU companies, which are expected to adhere to the set of European Sustainability Reporting Standards (ESRS).
   - **Consistency, comparability and coordination with other disclosure standards and initiatives remains of upmost importance to retail investors, while the CSRD and associated European standards are in the right direction, their clarity and intelligibility is likely to determine whether end users can indeed improve their decision-making processes when investing.**[105]
3. **Sustainable Finance Disclosure Regulation**[106]: This regulation lays down requirements for financial products manufacturers and financial advisors on financial products that pursue environmental objectives.
   - **The SFDR needs to urgently go through a comprehensive assessment and address key concerns related to key terminology, definitions and application**[107].
4. **MIFiD II changes on integration of sustainability factors, risks and preferences into certain conditions for investment firms**[108]: Since August 2022, investment managers and financial advisers have been required to obtain and incorporate their clients' "sustainability preferences" in the suitability assessment undertaken when making investment decisions and personal recommendations.
   - **The guides by ESMA in this regard provide some granular considerations which can benefit retail investors, however the current practice of those rules is not yet successfully integrated beyond "tick the box exercise".**[109]
5. **Greenwashing**[110]: claims lacking substantial evidence and misleading consumers has led to some amendments to the Commission's proposal of Unfair Commercial Practices Directive and the Consumer Rights Directive and supervisory authorities seek address greenwashing drivers and consequences.
   - **Regulatory efforts are needed to define and set parameters of greenwashing and the way retail investors can protect themselves from potential involvement as well as ways of redress.**[111]

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[103] European Commission, Taxonomy Regulation 2020/852, available here: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020R0852

[104] European Commission Corporate Sustainability Reporting Directive (CSRD) 2022/2464, available here: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022L2464

[105] See BETTER FINANCE's accompanying response to European Sustainability Reporting Standards (2022), available here: Comments letter in response to EFRAG on its draft EU ESRS

[106] European Commission Regulation 2019/2088 sustainability related disclosures in the financial services sector, available here: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32019R2088

[107] See BETTER FINANCE's position paper on classification of investment funds regarding sustainability (2022) available here: BETTER FINANCE position on the classification of investment funds regarding sustainability.

[108] European Securities and Markets Authority (ESMA) Guidelines on certain aspects of the MiFID II suitability requirements, available here: https://www.esma.europa.eu/sites/default/files/2023-04/ESMA35-43-3172_Guidelines_on_certain_aspects_of_the_MiFID_II_suitability_requirements.pdf

[109] See BETTER FINANCE's analysis on sustainability of Robo-advisors in this report

[110] European Commission proposal for a Directive on Green Claims (2023) available here: https://environment.ec.europa.eu/publications/proposal-directive-green-claims_en

[111] See BETTER FINANCE's response to the ESAs call for evidence on Greenwashing (2023) available here: Response to the 2022 ESAs Call for evidence on Greenwashing (betterfinance.eu)

We have observed that Robo-advisors ask sustainability preferences to their clients, which is a major change from previous iterations of this report whereby no such questions have previously been put forward by such platforms. However, in majority of the cases this is not a comprehensive effort but rather one which simply asks a question with no follow-up on sustainability. Few ask about the preference for a sustainable investment during the questionnaire, but the level of appropriateness of the question(s) and the extent of this requirement is translated into a mere "tick the box exercise".

Robo-advisors will need to ask comprehensive questions to their clients in order to carry out a meaningful suitability test according to their environmental, social and governance preferences, especially in the context of increased investor distrust which could hamper the effectiveness of such platforms in properly responding to their clients' expectations.

However, we have concerns that the Guidelines on certain aspects of the MiFID II suitability requirements may not be granular enough and in some instances provide much room for navigation for platforms which could serve as a barrier for standard and harmonised approach to questionnaires and general information presented for clients.[112]

[112] https://www.esma.europa.eu/sites/default/files/2023-04/ESMA35-43-3172_Guidelines_on_certain_aspects_of_the_MiFID_II_suitability_requirements.pdf

ANNEX I

METHODOLOGY

Fees

In order to analyse the costs associated with Robo-advisors, we collected data on different types of fees from the main pages on the website of Robo-advisors and on the investment advice results (when the platform present the investment advice at the end of the questionnaire). Regarding the data on fees collected from the investment advice, the research team collected the data according to the 2 risk profiles (Millennial and Baby Boomer).

- 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 others) 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.

Transparency

Regarding the transparency of the information provided by Robo -advisors. The research team has developed 4 main blocks to assess this indicator:1) transparency of fees, 2) transparency of portfolio composition, 3) transparency on past/ future performance and 4) transparency of risks:

a) *Transparency of fees*

One of the comparative advantages Robo-advisors have over more traditional providers of investment advice is lower fees on average. While an exact overview and comparison of fees has been outlined earlier in this research report, this section will focus on the transparency of fees as presented to the investors:

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?

b) *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?

c) *Past/ Future Performance*

When looking at the Robo-advisors' transparency as pertaining to historical data, this study has focused on the criteria below:

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?*

d) *Risks*

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?

The maximum score that each platform can obtain by considering all 4 blocks is 13 points. The result final score of the platform determines the level of transparency. In the graphs each 4 blocks are considered separately in order to provide an overview of each assessment.

Suitability

The methodology of suitability is divided in 2 parts: the suitability of the questionnaire and the suitability of investment advice.

Regarding the suitability of the suitability of the questionnaire, the research team has analysed whether the investor questionnaires do collect certain categories of information about the client, i.e.:

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

The scoring system awards 0-1 or 2 for each of the 4 points disclosed above. The results are then averaged at platform level and risk profile (Millennial and Baby Boomer) and calculated as % of the maximum points available.

Regarding the investment recommendations whether it is suitable for each "mystery shopper" risk profile, meaning the following criteria are applied:

1. the portfolio allocation is suitable for the risk profile of the investor.
2. the recommended investments are diversified.
3. whether the portfolio (incl. instruments) is aligned with the investor's ability to bear losses.
4. whether the proposed investments are complex or not.

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. The results are then averaged at platform level (results for the baby boomer and millennial mystery shopper) and calculated as % of the maximum points available. The chart below presents the results of each platform.

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. The results are then averaged at platform level (results for the baby boomer and millennial mystery shopper) and calculated as % of the maximum points available.

Sustainability

The methodology for sustainability is conducted by assessing ESMA's guidelines on MiFID II suitability requirements encompassing sustainability preferences that platforms should adhere to in ensuring clients receive the correct information when making investment decisions. Since the guidelines feature specific requirements such as appropriate questions on whether the provider offers sustainable investments, follow-ups on choosing specific sustainable investments and use of simple to understand terms throughout the process, BETTER FINANCE consolidated the main requirements to 6 questions.

7. Does the provider offer sustainable investments? (Yes/No/To a limited extent)
8. Does the provider let you choose sustainable investments according to preferences?
9. Does the provider ask for minimum preferences in relation to sustainability?
10. Does the provider inform you of its considerations to any of the ongoing EU Sustainable Finance requirements (SFDR, PAI, etc...)?
11. Are providers explaining terms and concepts used when referring to environmental, social and governance aspects?
12. Does the provider ask about specific focus on either environmental, social or governance sustainability factors or a combination of them or whether the client does not have such a focus?

For each question, each platform is allocated a score between 0-2, whereby 0 indicates no provisions, 1 some/limited provisions and 2 detailed provisions of information regarding the suitability and sustainability preferences. In these scenarios, what constitutes a limited extent and therefore a score of 1, is overly simplistic explanation/offer which does not differentiate or add further clarity (for example instances where a question is asked but no follow-up question/option is available thereafter). Where a platform is awarded a score of 2, it is based on comprehensive inclusion of information and consideration of clients' sustainability options, as well as general sustainability terminology and wider follow-up to ESMA's guidelines.

The scoring system awards 0-2 based on the integration and response of each platform for the questions disclosed above. The results are then averaged at platform level and summated for clear indication of ranking and points allocation out of possible 12.

ANNEX II

COMPLEMENT

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.

Disclaimer:
BETTER FINANCE did not enter into any agreement with any of the researchers of the Orange Envelope, or with the entity itself, except for using, quoting and referencing the relevant research provided on the Model Investor Questionnaire. The opinions and research expressed in this regard are those of its authors, for which BETTER FINANCE is not liable.

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