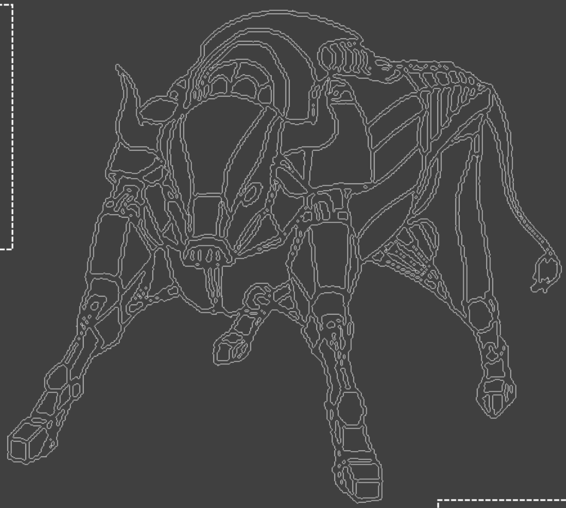
ROBO-INVESTING:

CYBORGS VS ROBOTS:

COMPETING TO ATTRACT EUROPEAN CITIZENS' MONEY



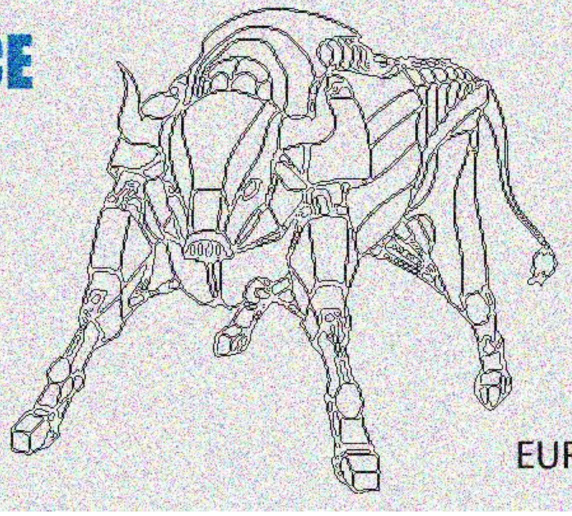
a Better Finance research paper

June 2017

BETTER FINANCE

The European Federation of Investors and Financial Services Users

Fédération Européenne des Epargnants et Usagers des Services Financiers



ROBO-INVESTING:

CYBORGS VS ROBOTS: COMPETING TO ATTRACT EUROPEAN CITIZENS' MONEY

JUNE 2017

A Research report by BETTER FINANCE

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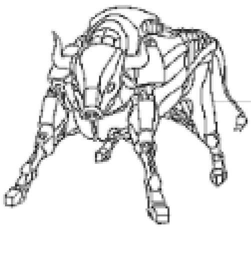
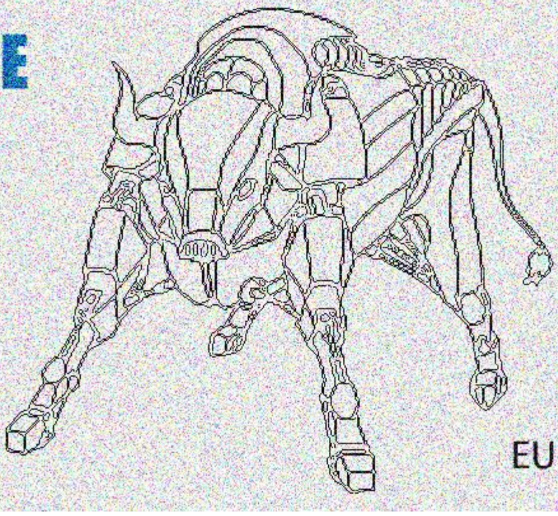




INTRODUCTION

Better Finance, the European Federation of Investors and Financial Services Users is the dedicated representative of financial services users at European level. It counts about fifty national and international members and sub-member organizations in turn comprising about 4.5 million individual members. Better Finance acts as an independent financial expertise centre to the direct benefit of the European financial services users (shareholders, other investors, savers, pension fund participants, life insurance policy holders, borrowers, etc.) and other stakeholders of the European financial services who are independent from the financial industry. Its activities are supported by the European Union since 2012.

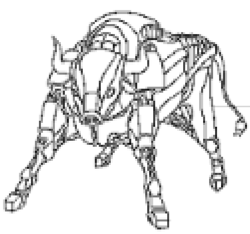
Better Finance believes that the financial system exists to serve the real economy and citizens by ensuring the optimal allocation of capital and providing other financial services in the most efficient way. In order to restore trust in financial services, the current dominance of financial institutions over the real economy must be curbed and the primacy of a sustainable real economy promoted.

For this very reason, Better Finance supports initiatives and policies that will restore equities to their rightful place, whilst simultaneously help reduce the costs charged by intermediaries who stand between the investor and the companies operating in the real economy.

There is an abundance of investable private capital in Europe, with households desperately looking for positive real returns on their savings in an ongoing climate of low interest rates, excessive fees, high complexity of investment products, financial repression, and financial illiteracy.

For too long individual investors and savers have been crowded out of equity markets and too often pushed into under-performing packaged products. The fragmentation of equity markets has meant that they have, for all intents and purposes, been limited to data on, and transactions in, regulated venues, while the larger part of transactions are now being executed in the 'dark' by 'professional' players. This situation is problematic because it hampers retail investors from achieving a decent return and often prevents fledgling businesses around Europe from acquiring the necessary long-term and sustainable capital.

ROBOTS TO THE RESCUE



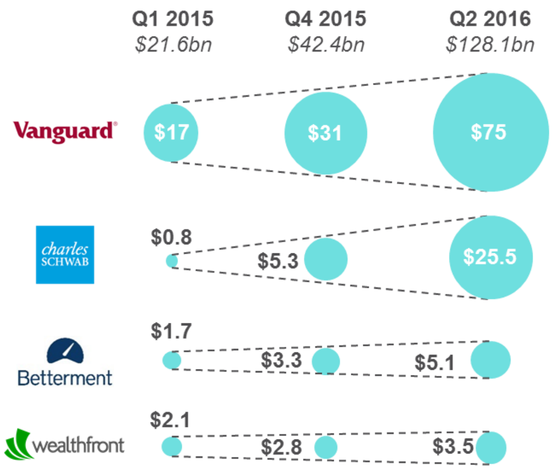
There have been many arguments for why Europeans by and large do not invest in capital markets, these include: a lack of trust due to conflicts of interests, lack of transparency on performance and fees, disappointing financial education, cultural barriers, difficult access to markets, high costs of investing and low levels of transparency leading to misinformation. Technological developments within the financial sector, such as Robo-Investing, might just turn the situation around and help transform European savers into investors.

The concept of Robo-Investing is actually quite simple. Robo-Investing, better known as Robo-Advice[i], uses computer programs and algorithms that feed on input provided by the consumer regarding their background, risk tolerance and financing needs in order to direct customers to the appropriate investments.

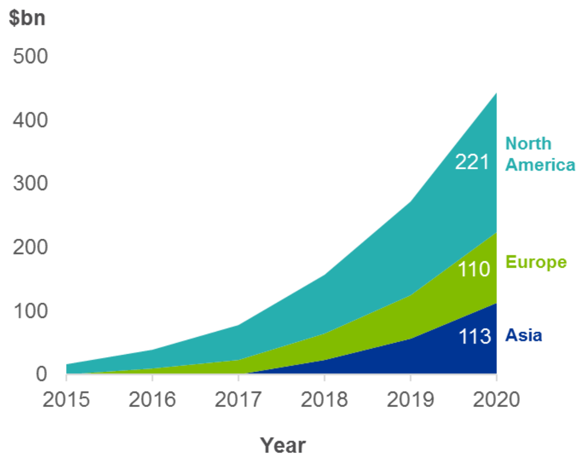
As pointed out by Better finance in its first research report on Robo-Advice (2016), these automated financial advice services have the advantage of being considerably less expensive than their traditional counterparts. They are also fee-based instead of commission–based which helps to prevent conflicts of interests from arising between the advisor and the client as well foster more transparency. They constitute an interesting alternative for those investors who do not require custom-made solutions. This is potentially great news for savers and individual investors, since, within the ongoing environment of low capital market returns, these new players could make a real difference on the actual performance of financial advice, safeguarding the purchasing power (the real value) of people's savings rather than obliterating it due to excessive fees.

As demonstrated by the graphs below, Robo-Investing seems to pick up speed, especially in Asia. But one should distinguish between "Robo-Advice" provided by established financial institutions (such as Vanguard in the US for example), and new independent players who are still relatively small, even in the US.

Growth in US Robo Advisory Platforms



… not just a US phenomenon



Sources: Financial Times, Citi Business Advisory Services "Industry Evolution Survey" Oct. 2016

The Retail Investor Perspective

This research report looks at Robo-Investing from the perspective of retail investors and does not claim to constitute a review or comparison of individual platforms or models but rather aims to establish if and how Robo-Investing can deliver for individual investors.

Our comparison of the different Robo-Investing models (see tables in annexes 2 and 3) is aimed at establishing general trends in the industry and best practices as well as identifying issues and areas that we feel can be improved upon. More specifically, the goal of this research is to examine Robo-Investment providers for their ease of use, transparency, cost-efficiency and suitability for retail investors.

The Business Model

Misnomer: "Robo-Advice" most often looks more like "Robo-Investing"

The European MiFID II Directive (Article 4, 1.4) 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*". The providers taken up in this study do indeed provide investment advice under this definition, although the degree of personalisation is debatable and varies between the different platforms. Most providers will ask the prospects/clients to fill out a questionnaire regarding their needs, their tolerance to risk or their risk appetite and on their existing financial situation, assets and debts. Based on their answers, some then direct customers to a rather limited number of predefined investment strategies or portfolios, whereas others tend towards a more personal approach.

That being said, the majority of the platforms under review, with the exception of Marie Quantier and Feelcapital, also provide asset management services, since they typically implement the personal recommendations provided to their clients by executing the proposed investments, including in many cases rebalancing those investments periodically to stick to the agreed asset allocation. In fact, several of the providers researched are registered as asset management companies with their National Competent Authority, or partner with an asset management company.

Therefore, terms such as "robot investing" or "robot investment management" would designate this emerging business more appropriately.

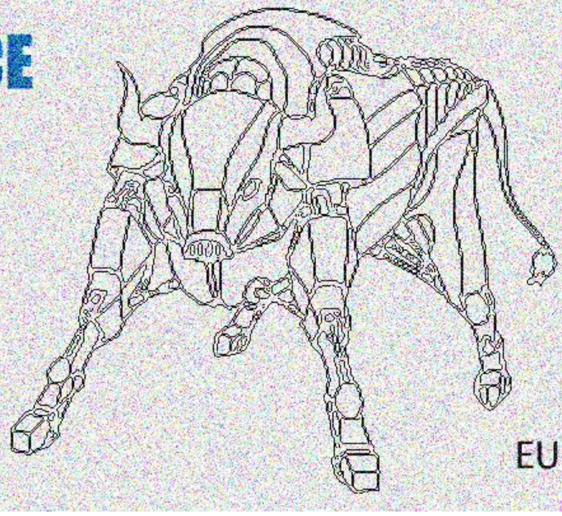
SIMPLER, LOWER AND MORE TRANSPARENT FEES

Most "robo" providers display a much simplified fee scale, often a single "all-in" fee or consisting of a simple combination of an advice fee and a fund fee. There typically are no other fees such as entry fees, custody fees, transaction / trading fees, performance fees, wrapper fees, etc. which are frequently found in standard "human" financial advice and private banking services. Fund fees are not always disclosed in the presentation of the platform services but their existence on top of the advice fee is usually mentioned.

Whereas fees for robo-investing services are generally far simpler and more transparent than those for "human" financial advisors or private bankers, information on underlying fees could still be significantly improved upon for most cases listed in this research.

The fees are also much lower than for traditional services, especially since most platforms use only or mostly exchange-traded funds (ETFs), as mentioned above. ETFs are like mutual funds, except for that they trade on stock exchanges and generally track an index such as the S&P 500 in the US, or the Stoxx 600 in Europe. Because the fund simply tracks an index and is not actively managed by a fund manager, and because it can be purchased on a securities market instead of through an intermediary, the cost to the client can be significantly lower:

- between 11 and 102 "basis points" (fund fees included) in the US (between 0 and 89 bps for advice plus 11 to 45 bps typically for underlying fund fees)



- between 25 and 125 basis points (fund and wrapper fees included) in Europe, with much more recent and smaller providers (between 0 and 100 bps for advice plus 19 to 30 bps typically for funds).

This compares very favourably with traditional overall fees charged by financial advisors and private bankers that are typically far above 100 bps when one includes underlying fund management fees. This difference has a very important impact over time on the actual performance of financial advice, especially in an environment of low capital market returns. It can indeed make the difference between protecting the purchasing power (the real value) of people's savings and destroying it.

The basis for charging fees, however, remains, in most cases, traditional: it is asset-based, not performance based. This still constitutes a limit to a better alignment of interests between providers and clients. There is a notable exception though: the French robot adviser "Marie Quantier" has developed a rather revolutionary and investor-friendly fee model: from € 79,60 fixed per year for administration plus 5% of annual gains.

Two Outliers

As already mentioned, Robo-Investors are starting to take on different shapes and sizes. This is making it increasingly difficult to compare them. Whereas the Robo-Investors covered in this report by and large can still be said to operate on roughly the same business model, some other significant players are very different, hence the reason for not including them in our comparative tables in annex.

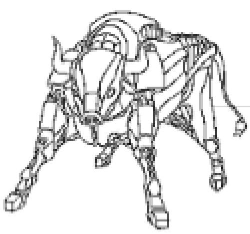
Two platforms stand out: Motif Investing in the US and Feelcapital in Europe.

Motif Investing

In agreement with the view espoused by Better Finance, Motif is the only platform to take issue with the name "Robo-Advisor", calling the industry (with the exception of Feel Capital) "automated investing" instead.

Moreover, Motif – more like "theme investing" than robo-advice – also has an altogether different take on automated investing, which is another reason why we did not include Motif in our comparison table either.

Unlike other robo advisors and investors, rather than assign investors a selection of ETFs or other pooled investment funds, the platform will ask investors to pick "motifs", groups or baskets of stocks or ETFs based on themes that can be aligned with



their own personal values. While a motif can be said to have the same functionality as an ETF, it gives the investor direct, fractional ownership of the individual securities and eliminates the need to pay for a product from an investment manager.

A Motif will also list every single security it comprises which, besides favouring increased transparency, allows investors in any particular Motif to eliminate or replace as they see fit any of the stocks it contains with a couple of clicks.[ii]

Motif Investing provides many different options[iii] for investing, ranging from what could be said to be mere brokerage services providing the option to simply buy a motif or a stock without advice or rebalancing, to different automated advice, investing and rebalancing packages (Motif Blue).

Just like for the Spanish Robo-Advisor detailed below, Better Finance decided not to include Motif Investing in the comparison tables, since the parameters for comparison are too different between its business model and the more common one shared by Robo-Investors in general.

BETTER FINANCE	MOTIF INVESTING
ASSETS UNDER MANAGEMENT	$176,100,000
NUMBER OF CLIENTS	120,000 clients
Historical Returns	7 years
ANNUAL FEES IN € - DETAILED	**Motif Blue** You can subscribe one of the 3 packages: - **Motif Starter : $59,40/year** (Auto-invest in 1 Motif and Auto- rebalance 1 Motif) - **Motif Standard**: **$119,40/year (** 3 Motifs + commission free trade on 1 Motif) - **Motif Unlimited: $239,40/year** (3 Motifs + commission free trades on 3 Motif or stock trade per month)
ANNUAL ADVICE FEES - Best Case	$ 119,40/ year
PRODUCTS AVAILABLE	Retirement and 401k, IRAs, Investments, IPOs
UNDERLYING INVESTMENT FUNDS	ETFs, Stocks
TYPICAL UNDERLYING REGIONAL OR NATIONAL EQUITY INDEX FUND	Motif Investing offers different type of "Motifs" (Cleantech Everywhere, Gay Friendly, Income Inequality, Modern Warfare...)
TYPICAL UNDERLYING FUND FEES	ETFs management fees when applicable
TOTAL ADVICE + MGT FEES - Best Case	$119,40/ year + ETFs management fees when applicable + Trading Fees
TRADING FEES	$4,95 per Transaction on stocks or ETFs and $9,95 per Motif
Legal Status	Motif Capital Management, Inc., is an SEC-registered investment adviser and a separate, wholly-owned subsidiary of Motif Investing, Inc., a registered broker-dealer and member SIPC.
SOURCES	www.motifinvesting.com

Feelcapital

This Spanish platform is frequently labelled as the largest Robo-Advisor in Europe in terms of Assets under Management (AuM), cited as managing over €1,7 billion in assets. However, Feelcapital is the only platform taken up in this study that can actually be said to be purely a Robo Advisor, rather than a Robo Investor, in that they do not provide asset management services. It follows that Feelcapital does not have any AuM, at least not in the same sense as it is understood for the other Robo Investors under review.

Better Finance felt that it could not be included in the main table comparing Robo Investors since it operates on a very different business model. Feelcapital does not invest their clients' money but merely advises clients on a selected series of investment options, determining which would be most suitable for each particular client. Once the client has been given what Feelcapital feels is the most suited portfolio for the client in question, the client takes the order for the portfolio to his or her bank to acquire said portfolio. Like most Robo-Advisors, Feelcapital's services are entirely fee-based without relying on commissions from the fund-providers they recommend.

Intriguingly Feelcapital advises rather 'exotic' funds in terms of asset allocation (apparently there are no allocations to any large cap Spanish or European equities or to any investment-grade European bonds). Also, they do not advise any low cost ETF, since they point out that Spain, as opposed to most countries worldwide, has a rather unfavourable tax treatment of investments in ETFs.

Trends

"Passive" Expansion

Since the 2008 financial crisis the investing world has witnessed the meteoric rise of indexed Exchange Traded Funds (ETFs), multiplying the number and size of different ETFs available on the market.

An ETF is a form of investment fund that's bought and sold on stock exchanges. A large majority of them are also index funds: they seek to track the performance of a benchmark index, and hold assets that help them to do just that. Being index-based, they give you a way to buy and sell a basket of assets without having to buy all the components individually. The ETF replicates the performance of its underlying assets, thereby providing the diversification benefits of mutual funds but with significantly lower fees.

Irrespective of the current financial environment, there is also a growing realisation that paying high fees for active management may not be the best strategy, since few actively managed portfolios manage to beat the capital markets in the mid- to long-term.[iv]

The ETF success story is actually part of a wider trend that has seen a significant shift towards passive management, with investors putting money into passive funds rather than actively managed ones. In the current low-interest environment investors are increasingly opting for lower fees, thereby ensuring better net returns on investment in the long-run.

However, up to now, ETFs have rarely been promoted to retail investors in Europe. Whereas in the US the market is shared equally between institutional and retail investors, in the EU the market is still for 90% in the hands of institutional investors. This is largely due to the predominantly commission-based and closed-architecture business model of retail financial distribution in Europe.

The fact that all the emerging robo-investors researched by Better Finance are predominantly offering ETFs represents a great opportunity for European retail investors. Furthermore, this emerging trend will be helped by those Member States who have taken steps towards abandoning commission-based distribution model in favour of a fee-based one, like the UK and the Netherlands.

CYBORG TAKEOVER ?

Earlier we already alluded to the fact that the Robo-Investing landscape has been evolving quickly and in the year since Better Finance first carried out this research, we have noted an increasing diversity and complexity of the products and services on offer. Whereas on the one hand this evolution can be seen in a positive light as a response to the perceived needs for more customised advice and services, it also has negative consequences in that it undermines one of the attractive features of Robo-Investing, namely its simplicity and accessibility for retail savers and investors.

The earlier research carried out by Better Finance concluded that investment management through the use of automated tools did not always lead to adequately personalised advice or investment choices since some platforms seemed to allocate all prospects and clients to a pre-determined and rather limited number of standard portfolios. There seemed to be little or no taking into account of more complex situations (like varying income needs for example), of tax optimisation, asset/liability management (debt issues), or generational issues, etc. Whereas such basic investment advice has the advantage of being easy to understand it does not, in our view, fully replace the benefits of more customised advice and face-to-face interviews that go beyond the asset allocation and the selection of investment products for quite simple objectives and time horizons.

It seems that the emerging industry has now caught on, with several players reintroducing a human element to the mix in case clients have questions, specific needs or express a desire for a certain degree of active management with the aim of beating the market.

This change is resulting in more choice for investors and better-suited advice, whilst at the same time making it more difficult to compare between platforms and different products, for investors as well as for this study.

For those investors, especially younger ones, who prefer to use technology, do not care for keeping continuous track of their investment and do not place high priority on outperforming the market, the human touch may be less relevant. For those who still place value on a personalised approach and have specific needs, the Cyborg is coming to the rescue.

Traditional Players Wake Up and Smell the Coffee

The disruptive changes introduced by FinTech companies can, on the one hand, pose a threat to the livelihood of established financial institutions. On the other hand, the developments brought about by these companies also show traditional players where new opportunities exist and how to capitalise on them.

Accordingly, established asset managers such as BlackRock, Schwab or Vanguard have all recently launched robo-investment platforms. Providing robo-investment services allows for wealth management companies to respond to the developing expectations of a new type of investors whilst becoming more cost-efficient and remaining profitable even in a business with lower fees.

These technologies allow established providers to widen their market and target potential customers such as investors with a lower net-worth as well as the next generation of internet savvy do-it-yourself investors that would traditionally have steered clear from such services.

A Fragmented & Expensive European Market

From the research a clear pattern emerges showing that robo-investing fees remain higher in Europe than they are in the US, although the gap is closing somewhat compared to last year's results.

This can, to some extent, be explained by the smaller size in terms of Assets under Management of the platforms in Europe, resulting in fewer means to cover fixed costs. More importantly though, it reflects other findings outlined in other research by Better Finance and others, indicating that investment–related fees are overall much higher in Europe (i.e.: fees that are 2 to 2.5 times higher for equity investment funds on average). This fact can be attributed to the fragmentation of the European capital markets and to a lack of product standardisation as well as insufficient competition. In addition, in some countries, the use of an additional wrapper around the selected funds for tax optimization purposes contributes significantly towards higher fees.

REGULATION & SUPERVISION

In December 2015 the Joint Committee of the three European Supervisory Authorities (ESAs) – EBA, EIOPA and ESMA – launched a Discussion Paper[v] on automation in financial advice, aimed at assessing what, if any, action is required to harness the potential benefits of this innovation and mitigate its risks. The Joint Committee then published a report[vi] at the end of 2016 concluding that "*the proliferation of automated advice, often referred to as robo-advice, is still at an early stage and the phenomenon is not equally present across the insurance, banking and investment sectors, currently having a greater prominence in the investment sector. The ESAs also note that financial advice in general is already addressed in various ways through a number of EU Directives.*"

Indeed, nearly all providers researched were duly registered as financial advisors in their respective jurisdictions like traditional, non-automated financial advisors are. In addition, many are logically also registered as asset managers or have a contractual relationship with a registered investment company. It follows logically therefore that these newcomers are regulated as such and need to comply with rules governing investments and advice, and in particular MiFID.

Better Finance, contrary to some critics of "robot" advice, did not really identify a weaker regulatory framework for automated investment services when compared to traditional financial advice. Better Finance recommends for the European regulators to more precisely define "investment advice", and more specifically "personal recommendations". We also noted that the French robo-advisors also registered as insurance brokers. That is because insurance-based investment products are the most popular retail investment products in France, partly due to tax advantages.

We could not, however, test the adequacy and performance of the advice itself, i.e. of the algorithms used. First, because most providers lack a sufficient track record in terms of years of operation, second because the advice is too a greater or lesser extent personalised, and third because Robo-Investment platforms – like most standard advisors – typically do not disclose performance yardsticks or benchmarks.

CRITICISM & PITFALLS

Research commissioned by the United Kingdom's Financial Services Consumer Panel and carried out by Boring Money[vii] reveals some of the worries financial consumer organisations express vis-à-vis the emerging robo-investing sector.

COMPLEXITY

Whereas Better Finance agrees that one size does not fit all when it comes to financial advice, increasing the amount of different investment options complemented by additional services such as tax optimisation, may actually lead to further confusion.

As shown by this research, comparing different platforms has become increasingly difficult as they increasingly provide different services, products and a bewildering choice between 'more or less human input'. This is endangering one of the main assets and benefits of robo-investing: its simplicity.

FEE AND PERFORMANCE DISCLOSURE

Whereas fee disclosure in the robo-investing sector is generally much more transparent than with their traditional counterparts, there is still room for improvement.

It goes without saying that the fewer products on offer, the easier the fee disclosure. Some of the platforms studied for this report do provide an annual overall fee (as an asset-based percentage) including an estimated average fee for the underlying funds.

Others providing different products and services do not provide this average fee information since, more often than not, they disclose the underlying ETFs but not their fees, making it very difficult to calculate the overall cost of the investment. Too few actually disclose the total overall fee to be borne by the client on an annual basis.

Past performance is rarely provided, and when it is, it tends to lack depth proving information covering only a very short time frame, often shorter than the recommended holding period or than the time horizon expressed by clients. To some extent this can partly be explained due to the limited track record of these new players that only recently entered the market.

A FIRST ATTEMPT AT SCORING ROBO INVESTORS

We based this study on the assumption that the average retail investor potentially using Robo-Investing services would only have limited financial literacy. Since the research was carried out from the perspective of retail investors, we focused only on what could be found on the providers' websites, rather than calling them with questions that an average retail investor would not necessarily come up with.

To do this we first decided to identify some of the principal independent Robo-Investors from the United States and Europe respectively (please refer to Annex I) which would serve as our sample for further analysis. For this reason this sample does not always include the biggest national players, who can be affiliates of established financial institutions. This in itself was not an easy exercise, since most European Robo-Investment platforms do not disclose information on their assets under management (AuM) or their number of clients on their website.

Warning: This is a first attempt at identifying the best-in-class from the retail investor point of view. Better Finance lacked the time and resources to develop a full-scale scoring method and to apply it to a larger number of independent Robo-Investors this time.

INSUFFICIENT INFORMATION AND INCREASED CHOICE

As mentioned, this study aims to approach the subject of Robo-Investing from the retail investor's perspective and therefore seeks to collect the necessary information from the different Robo-Investing platforms directly.

As shown in Annexes II and III, several platforms do not provide all the information. Especially information on 'assets under management' and the number of clients is absent from most platforms' websites, making it difficult to identify which are the largest Robo-Investors in Europe or the US.[viii] In several instances, we had to contact the firm to clarify the minimum fees charged.

Besides information issues, many platforms have diversified away from the one-model-fits-all approach and are offering a wider range of services or are slightly adapting the Robo-Investing model to slightly different types of platforms such as Hybrid Robo Advice.

Whereas, on the one hand, this is a positive evolution in the sense that Robo-Investors are adapting to different target groups. On the other hand it also increases complexity for investors as well as for the purpose of this study.

Further complicating matters, the success of this fairly nascent sector has started attracting traditional players to the scene. In the United States large financial institutions such as Vanguard and Schwab have entered the fray, leaving the Robo-Investing "start-ups" far behind in terms of Assets under Management. In Europe more established players, such as Keytrade Bank and Deutsche Bank, have also joined in. This research does not include those.

BETTER FINANCE SCORING CRITERIA

For each of the platforms selected we gathered both quantitative and qualitative data to evaluate the Robo-Investing platforms according to their performance in four different categories:

1. Transparency / Clarity / Simplicity
2. Suitability
3. Cost / Price (Fees)
4. Financial Education

TRANSPARENCY / CLARITY / SIMPLICITY

- *"Information must be fair, clear and not misleading."*
- *"it shall be accurate and in particular shall not emphasise any potential benefits of an investment service or financial instrument without also giving a fair and prominent indication of any relevant risks."*
- *"it shall be sufficient for, and presented in a way that is likely to be understood by, the average member of the group to whom it is directed, or by whom it is likely to be received."*
- *"it shall not disguise, diminish or obscure important items, statements or warnings."*

(EU MiFID II Directives)

Unfortunately fair, clear and not misleading information is one of the least enforced investor protection rules in the EU[ix].

For this criterion of 'transparency' the evaluation is based on the amount of information available regarding fees, assets under management, number of clients, product information and past-performance.

Criteria:

- Information regarding fees and costs is comprehensive and clearly displayed on the website.
    - Is it clear what the different fees are for?

- Information on past performance, for how long, and with benchmark comparison…
- Does the platform clearly mention all relevant information?

➔ **<u>Best in Class 2017</u>: Money Farm (Germany – UK)**

The platform provides a very easy-to-understand overview of its pricing model and thanks to a comprehensive simulator, individual investors will be able to easily have an overview of the overall costs for their particular investment, as well as a breakdown of the costs.

European Robo-Investors generally do better in this category than their US counterparts, although it has to be said that Betterment is very transparent and easy to understand for laymen.

SUITABILITY

There is no EU legal definition of an "unsuitable" or toxic investment product. Worse, the EU Authorities currently have no power to suspend or ban toxic investment products sold in the EU, contrary to their counterparts regulating cars or drugs for example.

Better Finance has on several occasions put forward[x] a definition of a toxic or "unsuitable" investment product: an investment product that is not likely to at least protect the real value (purchasing power) of the clients' savings over the advised or needed time horizon.

For instance, retail investment products that charge more than 1% on savings every year and are invested largely or totally in national currency fixed income securities (for example Euro Government bonds) are currently hardly suitable since - given the very low interest rates level - they are unlikely to generate a gross return that will offset these fees plus inflation over their recommended holding period. In other words, these products are very likely to reduce the real value of the savings of their clients.

<u>Criteria:</u>

- Products and services adapted to investors' profiles and needs: risk of proposing unsuitable toxic product as defined by Better Finance
- Direct (to minimise the number of layers of fees, and to strengthen the link between savings and the real economy, as targeted by the European "CMU" initiative), but guided and simple access to capital markets

- No nonsense approach to “responsible” investments
- Human advisor available to guide the investor in case of need

➔ **BEST IN CLASS 2017: MOTIF INVESTING**

For this section Better Finance is tempted to nominate one of the ‘outliers’ (see below) that deviate significantly from the dominant business models in the sector. So, whereas Motif Investing scores very highly in terms of suitability, it does not compare well with the other platforms (and is therefore not included in the overall table in Annexes 2 and 3). However, Motif is a US-based provider, and therefore not easily accessible to European savers and individual investors.

PRICE (FEES)

Criteria:

- Level of overall fees compared to other robo-advisors and to traditional players
- Asset based/ performance based

Future returns on investment are unknown and not predictable. Fees are a key driver of the performance of retail investment products as demonstrated by Better Finance research on the real return of long-term savings in Europe.

Overall fees are based on the total amount of charges, from the lowest to the highest amount (see annexes 2 and 3 for the detailed analysis).

➔ **BEST IN CLASS 2017: MARIE QUANTIER (FRANCE)**

Marie Quantier is the only researched Robo-Investor to depart from the traditional asset-based pricing model used by all others (and by “human” advisors). Its model is performance based (5% of annual positive returns). This better aligns the interests of the advisor with that of the client.

This is particularly advantageous in the case of a € 100,000 investment, for which the overall annual fee drops to as low as 0,28% in case of flat or negative performance. This is three times lower than the next competitor on price (MoneyFarm) and is even cheaper than the US players. This is quite a feat since US players are not only much bigger (economies of scale), but they also benefit from far cheaper underlying fund fees, since the US ETF market is significantly larger and not fragmented like in Europe. Also, to be sustainable, such a business model needs critical mass.

However, with the website only being available in French, it would be difficult for non-French-speaking EU citizens to use this provider.

FINANCIAL EDUCATION

For the criterion termed 'financial education' the score is based on the extent to which information is available on the individual websites providing definitions and guidelines for retail investors on issues ranging from basic investing instructions to understanding investor information to current market trends and everything in between.

Criteria:

- Are there easily accessible definitions of terms and explanations for layman investors?
- Does the Robo-Investor propose webinars or videos to its clients?
- Is there easy access to information on the underlying funds?

➔ **BEST IN CLASS 2017: NUTMEG (UK)**

For this category Better Finance would argue that the Robot Investors in the US perform better than their European counterparts. US platforms provide a lot of easy-to-understand background information, with definitions of concepts and terms and overviews of investing methods and practices.

In this sense Nutmeg follows the same best practices as the US platforms, providing laymen with easy-to-understand definitions and clear explanations regarding their investment practices.

CONCLUSION

Robo- and Cyborg-investing is still an emerging trend but one that is growing and evolving rapidly. Better Finance believes that it can lead to significant benefits for EU citizens as savers and individual investors, and therefore to the real EU economy as a whole which needs a more direct and strengthened link between savings and the real assets they are invested in. Even today, the emergent sector already provides:

- significantly lower and more transparent fees,
- a better alignment with their clients' interests since they are mostly fee-based rather than commission-based,

- better value for money by combining low overall pricing with the use of index ETFs which, on average, have over-performed a majority of active funds over the mid- and long-term.

Even more recent innovations are also very exciting for savers and individual investors such as pricing based on performance instead of assets as well as making direct individual equity investments easy and more responsible / sustainable, as featured in this report.

However, these services are not without weaknesses, such as:

- the fact that the services they provide are less customised than those of "human" advisors,
- and that they still deal with rather complex and difficult to understand products and services, requiring clients to be relatively financially literate to really understand the value of their offers.

Also, Better Finance sees threats to this emerging model:

- It will be an uphill struggle for many of these emerging players to acquire the critical mass required by their low-cost approach.
- Already established financial institutions are either creating their own robo business or have started investing in robo start-ups; thereby posing a real risk to the sector if established players then partially or totally strip it of the key benefits they currently provide to EU savers and individual investors mentioned above.

Better Finance calls for EU Authorities to follow up on their "consumer financial services action plan" released on 23 March 2017, and help build independent web-based comparison tools for retail long-term and pension investments. Better Finance is ready to contribute to this process, as this is a major challenge for EU citizens as long-term savers, for the Capital Markets Union initiative, for the EU economy and for the adequacy of our pensions and even more so for those of our children.

[This research report was produced by Better Finance team members Sibille Allgayer, Alvero Kavanagh, Arnaud Houdmont, Guillaume Prache, Alex Rodríguez Toscano and Marie Vial and by Christiane Hölz from Better Finance's German member organisation DSW.]

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[i] See previous Better Finance study: "Robot Advice for savings & investments - A misnomer with real potential benefits - 2016 Edition"

[ii] Wealth Management, "Motif's Robo Is More Than a Values-Based Approach To Digital Advice", 10/03/17
[iii] Motif Investing, Pricing Details
[iv] See, for example, the IODS Study for the European Commission's FSUG on the Performance and Efficiency of the EU Asset Management Industry, October 2014.
[v] ESAs Joint Committee Discussion Paper on automation in financial advice, December 2015
[vi] ESAs report presenting the conclusions of its assessment on automation in financial advice, December 2016
[vii] "Assessing online investment & advice services", Report by Boring Money on behalf of the Financial Services Consumer Panel, December 2016
[viii] "*No regulator was able to provide data on the assets under management (AUM) or the total amount of client assets attributable to firms offering automated advice tools*", Update to the Report on the IOSCO Automated Advice Tools Survey, December 2016
[ix] For a detailed analysis of this issue, see Better Finance briefing paper: "A major enforcement issue: the mis-selling of financial products", April 2017.
[x] See, for example, Better Finance's reply to the ESMA consultation on the Draft guidelines on MiFiD product governance requirements, January 2017.

ANNEX 1

Scope of the Research

EUROPE

EASYVEST (Belgium)	https://www.easyvest.be/
LIQID (Germany)	https://www.liqid.de/
MARIE QUANTIER (France)	https://mariequantier.com/
MONEY FARM (UK & Germany)	https://www.moneyfarm.com/
NUTMEG (UK)	http://www.nutmeg.com/
SCALABLE CAPITAL (UK & Italy)	https://uk.scalable.capital/
VAAMO (Germany)	https://www.vaamo.de/
YOMONI (France)	https://www.yomoni.fr/
FEELCAPITAL (Spain)	https://www.Feelcapital.com/

UNITED STATES

ASSETBUILDER	https://assetbuilder.com/
BETTERMENT	https://www.betterment.com/
FUTUREADVISOR	https://www.futureadvisor.com/
PERSONAL CAPITAL	https://www.personalcapital.com/
WEALTHFRONT	https://www.wealthfront.com/
MOTIF	https://www.motifinvesting.com/

ANNEXES 2 & 3

See below:

- Annex 2 – Comparison Table of Robo-Investors in Europe, p. 19
- Annex 3 – Comparison Table of Robo-Investors in the United States, p. 20

BETTER FINANCE

	United Kingdom	UK and Germany	UK and Italy	Germany		France		Belgium
	Nutmeg	Scalable Capital	Money Farm	LIQID (formerly OwlHub)	Vaamo	Yomoni	Marie Quantier	Easyvest
ASSETS UNDER MANAGEMENT	£600 million	€250 million	not available	€100 million	not available	€17,9 million	not available	not available
NUMBER OF CLIENTS	50000	6000	not available	not available	not available	2985	not available	not available
HISTORICAL RETURNS	Since 2011	Since 2014	Since 2011	Since 2014	Since 2013	Since 2014	Since 2011	Since 2012
ANNUAL FEES (% of assets) - DETAILED	<u>First £100,000</u>: - fully managed portfolio: 0.75% - Fixed allocation portfolio: 0.45% <u>Beyond £100,000</u>: - fully managed portfolio: 0.35% - fixed allocation portfolio: 0.25%"	0.75% per annum	<u>0%</u>: £ 0 - £ 10,000 <u>0.6%</u>: £ 10,001- £ 100,000 <u>0.4%</u>: £ 100,001 - £ 1,000.000 <u>0%</u>: over £ 1,000.000	Minimum investment: €100,000 Administration Fee, depending on the amount invested and the service provided : <u>LIQID Global</u>: 0.25% - 0.5% p.a. <u>LIQID Select</u>: 0.6% - 0.90% p.a. Fund fees depending on the service provided: <u>LIQID Global</u>: 0.25% p.a. <u>LIQID Select</u>: 0.86% p.a. Transaction fees not disclosed (only to clients)	Service fee 0.79% p.a. (for administration plus third party fees (0.3% p.a. on average for "funds internal costs" plus 0.15% on average as transaction fees) Above € 200,000 agreement on individual conditions possible	All inclusive fees of 0.7% (+ 0.6% wrapper)	3 differents packs according to customers' needs: • <u>Execute</u>: €19.90/ quater + 5% of annual return • <u>Create</u>: € 39.90/quarter + 5% of annual return • <u>Analyze</u>: € 149/quarter +5% of annual return (+ 0.6 % if insurance wrapper used)	Minimum amount : €5,000 € 5,000€ - € 24,999 = 1.00% € 25,000€ - € 49,999 = 0.90% € 50,000€ - € 99,999 = 0.75% € 100,000€ - € 249,999 = 0.60% Over € 250,000 = 0.50%
ANNUAL ADVICE FEES - €/$10,000 INVESTMENT (BEST CASE)	0.75%	0.75%	0.00%	n/a	0.79%	0.7% (+ 0.6 % wrapper fee)	€ 79.60 (fixed annual fee) + 5% of annual returns	1%
ANNUAL ADVICE FEES - 100,000 €/$/£ INVESTMENT (BEST CASE)	0.75%	0.75%	0.6%	0.50% (LIQID Global)	0.79%	0.7% (+ 0.6 % wrapper fee)	€ 79.60 (fixed annual fee) + 5% of annual returns	0.6%
PRODUCTS AVAILABLE	Investment, ISAs, Pensions	Investment, ISAs, SIPP	Investment, ISAs	Investment	Investment	Investments, Life Insurance, PEA	Investments, Life Insurance	Investments and Savings
UNDERLYING INVESTMENT FUNDS	ETFs	ETFs	ETFs	ETFs	ETFs	ETFs	ETFs	ETFs
TYPICAL UNDERLYING EQUITY INDEX FUND	Vanguard FTSE 250 UCITS ETF	Vanguard S&P 500 ETF	Vanguard FTSE All-World UCITS	n/a	iShares Stoxx Europe 600	Amundi ETF CAC 40	iShares Stoxx Europe 600	iShares MSCI ACWI ETF
AVERAGE OF TYPICAL UNDERLYING FUND FEES	0.19%	0.25%	0.25%	0,25%*	0.2%	0.3%	0.2%	0.3%
TOTAL ADVICE + MGT FEES FOR 10,000 portfolio (BEST CASE) :	**0.94%**	**1.00%**	**0.25%**	**n/a**	**0.99%**	**1.00%**	**1.25%****	**1.3%**
TOTAL ADVICE + MGT FEES FOR 100,000 portfolio (BEST CASE) :	**0.94%**	**1.00%**	**0.85%**	**0.75%**	**0.99%**	**1.00%**	**0.53%****	**0.9%**
TRADING FEES	none	none	none	none	0.15%	none	0.08%	none
Legal Status	Nutmeg® is authorised and regulated by the UK Financial Conduct Authority, no. 552016.	Scalable Capital Limited is authorised and regulated by the UK Financial Conduct Authority (Firm Ref No 672532).	Money Farm is Authorised and regulated by the UK Financial Conduct Authority as an Investment Advisor and Investment Management Company - Authorisation no. 629539	LIQID Asset Management GmbH has a license from the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienst-leistungsaufsicht, BaFin) for investment brokerage, investment advice, financial intermediation and financial portfolio management.	Sciuridae Vermögensverwaltungs GmbH (trade mark vamoo) is a financial institute and is licensed by BaFin for investment advice, investment brokerage, financial portfolio management and financial intermediation (BaFin ID 147708)	YOMONI is auhtorised and regulated by French Regulator AMF as an asset management company, no. GP-15000014 and registered insurance broker (ORIAS 15003517).	Q-Hedge Technologies, the company behind MarieQuantier.com is a certified Financial Investment Advisor (ANACOFI-CIF: E003608 agreed by French Regulator AMF) and registered insurance broker (ORIAS: 13008517).	Easyvest SPRL is an agent in banking and investment services for Leleux Associated Brokers, authorized and regulated by the Belgian Financial Services and Markets Authority, no. FSMA 114522 cB Last updated on 20/10/2015
Sources	www.nutmeg.com	uk.scalable.capital	www.moneyfarm.com	www.liqid.de	www.vaamo.de	www.yomoni.fr	www.mariequantier.com	www.easyvest.be

** LIQID does not provide information on underlying ETFs. They do provide, however, an average of underlying fund fees.*

*** Assuming a positive 5% annual nominal return*

BETTER FINANCE	ASSETBUILDER	BETTERMENT	FUTUREADVISOR	PERSONAL CAPITAL	WEALTHFRONT
ASSETS UNDER MANAGEMENT	$733 million	$7,3 billion	$969 million	$3,9 billion	$5,0 billion
NUMBER OF CLIENTS	2,676	220 000	13,751	1,3 million	100,202
Historical Returns	7 years	13 years	3 years	5 years	7 years
ANNUAL FEES (% IN $ OR €) - DETAILED	Minimum investment: $50,000 -$50,000- $249,999.99 : 0.45% -$250,000.00 - $ 599,999.99: 0.43% -$600,000.00 - $999,999.99: 0.40% -$1,000,000.00 - $3,999,999.99: 0.30% -$4,000,000.00 - $19,999,999.99: 0.25% -$20,000,000.00 and above: 0.20%	3 plans depending on capital invested and services provided : - 0.25% (no minimal requirement) - 0.40% (minimal balance of $100,000) - 0.50% (minimal balance of $250,000)	FutureAdvisor's management fee is 0.5% annually on assets that we directly manage. Average expense ratios and trading fees are minimized, and result in an all in average cost of 0.65% per year of assets managed.	Personal Capital charges one, all-inclusive fee of between 0.49% and 0.89% of assets under management: - 0.89% : under 1 million - 0.79%: under 3 million - 0.69%: under 2 million - 0.59%: under 5 million - 0.49%: under 10 million	Wealthfront managed the first $10,000 for free. Above $10,000, the company charges 0.25% per year on amounts over the initial $10,000, assessed monthly.
ANNUAL ADVICE FEES- €/$10,000 INVESTMENT (BEST CASE)	n/a	0.25%	0.5%	0.89%	0,00%
ANNUAL ADVICE FEES IF INVESTMENT 100,000 €/$ (BEST CASE)	0.45%	0.4%	0.5%	0.89%	0.25%
PRODUCTS AVAILABLE	Investments	Financial Planning, Retirement, IRAs, Trusts, Tax Loss Harvesting, Tax Coordinated Portfolio	Retirement planning, college savings, investment	Retirement & 401k, estate planning, college savings, tax management	Individual accounts, joint accounts, trust accounts, IRAs, 401k rollovers
UNDERLYING INVESTMENT FUNDS	ETFs, Stocks	Equity & Bond ETFs	Equity & Bond ETFs	US Stocks, International Stocks, US Bonds, International Bonds, Alternatives (ETFs, etc.) , Cash	Equity & Bond ETFs
TYPICAL UNDERLYING REGIONAL OR NATIONAL EQUITY INDEX FUND	DFA US Large Cap Growth Instl (DUSLX)	Vanguard U.S. Total Stock Market Index ETF (VTI)	Vanguard S&P 500 ETF (VOO)	Vanguard U.S. Total Stock Market Index ETF (VTI)	Vanguard U.S. Total Stock Market Index ETF (VTI)
AVERAGE OF TYPICAL UNDERLYING FUND FEES	0.45%	0.12%	0.16%	0.13%	0.11%
TOTAL ADVICE + MGT FEES FOR 10,000 €/$:	n/a	0.37%	0.66%	1.02%	0.11%
TOTAL ADVICE + MGT FEES FOR 100,000 €/$:	0.90%	0.52%	0.66%	1.02%	0.36%
TRADING FEES	0.01%	none	In some cases (rebalancing...)	none	none
Legal Status	AssetBuilder Inc. is an investment advisor registered with the Securities and Exchange Commission ("SEC") and Registered Investment Adviser(RIA) (CRD# 142665 / SEC# 801-67404)	Betterment.com is operated by Betterment LLC, an SEC Registered Investment Advisor. Securities products are offered to clients of Betterment LLC by Betterment Securities, a registered broker dealer and member of FINRA/SIPC.	FutureAdvisor Inc. ("FutureAdvisor") operates an online financial advisor at www.futureadvisor.com (the "Site") and is registered with the Securities and Exchange Commission under the Investment Advisers Act of 1940.	Personal Capital Advisors Corporation is an investment advisor registered with the Securities and Exchange Commission ("SEC").	Wealthfront Inc. is registered with the Securities and Exchange Commission under the Investment Advisers Act of 1940, as amended. Wealthfront does not provide personalized financial planning to investors, such as estate, tax, or retirement planning.
SOURCES	www.assetbuilder.com	www.betterment.com	www.futureadvisor.com	www.personalcapital.com	www.wealthfront.com

BETTER FINANCE

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Fédération Européenne des Épargnants et Usagers des Services Financiers

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