ROBO-ADVISORS IN ASSET MANAGEMENT – THE EXPERIENCE FROM GERMANY

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ABSTRACT   The importance of the digitization is in the area of financial services is growing. One of the manifestations of the development of financial technology in finance is the use of the so-called robo-advisors in financial services, which offer asset and wealth management services using fintech technology. The aim of the article is to present the essence of financial services offered by robo-advisors and indicate the development trends of these services in the field of asset management on the German market. Moreover, the article presents the benefits and limitations associated with the use of robo-advisors in asset management. The results of the research show that it is very fast developing services' market, which is characterised by relative low cost; but – because of its nascent level – there is lack of long-term benchmark and investment returns history that would enable further studies on that issue

Introduction

Virtualization is entering new areas of life. The Internet is used in social, cultural, business and financial contexts. In the area of financial services, the Internet was initially used in banking, where customers gained access to their bank account, and then were allowed to make a growing number of different types of banking operations. Then, digitization extended also to brokerage services, thanks to which customers gained access to

online investment accounts and could place orders via the Internet. For several years, the intensive development of enterprises operating in the fintech[1] area, which provide IT solutions for the financial sector, have been observed. One of the manifestations of the development of fintech is the use of the so-called robo-advisors in financial services, which offer asset and wealth management services using fintech technology. Experts estimate that by 2020, assets worth from USD 2.2 to 3.7 trillion will be managed by robo-advisors (Deloitte, 2016a, p. 1).

The development of new services and financial products arising as a result of technological changes does not require the active role of traditional financial intermediaries. That is why more and more fintech companies are entering the financial service and asset management markets.

The aim of the article is to present the essence of financial services offered by robo-advisors and indicate the development trends of these services in the field of asset management on the German market. Moreover, the article presents the benefits and limitations associated with the use of robo-advisors in asset management.

The background of digital asset management development

Financial services have been offered by traditional intermediaries such as banks, investment funds, insurance companies or pension funds. Traditionally, investment manager is a professional who makes investments on behalf of a third-party, with the aim of generating the highest possible return. On the other hand, wealth management services are offered by specialized financial institutions, and are based on long-term management of assets of private persons and their families (Gabryelczyk, 2009, pp. 15–16). Wealth management services include also asset management services that come down to management of cash capital and financial instruments. Assets that are transferred by individual investors to asset management companies who manage them become an investment portfolio (Gabryelczyk, 2009, pp. 42–43). Therefore, asset management companies offer investment portfolio management services to their clients following a specific investment strategy.

With the development of digital technology, traditional financial intermediaries began to be active in the new distribution channel, which is the Internet. The concept of *Internet Finance*, understood as the third distribution channel, in addition to indirect financing (through the banking sector) and direct financing (on the capital market), was also distinguished in scientific works (Xie, Zou, 2013, p. 1).

Digitalization of wealth and asset management services started relatively late, when compared to digitization of the banking sector. Nevertheless, its strength and speed will introduce diversity to wealth and asset management services (Deloitte, 2016b, p. 2).

Before the development of robo-advisors, which were applied in wealth and asset management services, the IT tool was used for digital investment advice. Generally at the beginning of the 90s, digital investment tools were used by financial professionals to develop investor profiles, allocate assets or recommend specific portfolios. In 2005, the development of digital investment tools expanded further, and continued the intensive growth after the financial crisis 2008. The data show that after the crisis, the growing number of new entrants offering a wide range of digital financial tools has been noticed (FINRA, 2016).

According to FINRA report (2016), digital investment advice tools support one or more of the following core activities in managing an investor's portfolio:

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[1] Fintech can be identified as "computer programs and other technology used to support or enable banking and financial services…" (Oxford English Dictionary, 2016).

- customer profiling,
- asset allocation,
- portfolio selection,
- trade execution,
- portfolio rebalancing,
- tax-loss harvesting,
- portfolio analysis.

The development of robo-advisors is a proof that the Internet has not only become a convenient distribution channel, but more widely, the development of information technology has made it possible for new entities, which benefit from the development of fintech, to enter the financial service market. Undoubtedly, the development and application of digital investment advice tools in asset management is associated with the development of fintech, which is referred to as "a global phenomenon, born at the intersection between financial firms and technology providers, attempting to leverage on digital technology and advanced analytics to unbundle financial services and harness economies of scale by targeting long-tail consumers" (Sironi, 2016, p. 5). Whereas, robo-advisor is defined as "automated investment solutions which engage individuals with digital tools featuring advanced customer experience, to guide them through a self-assessment process and shape their investment behaviour towards rudimentary goal-based decision-making, conveniently supported by portfolio rebalancing techniques using trading algorithms based on passive investments and diversification strategies" (Sironi, 2016, p. 5). This is a technological approach that defines automated consultancy in the area of portfolio management as a technological solution. A similar approach is presented by J. Tönnesmann (2018), stating that robo-advisors are not robots that have a physical form, but computer programs that help a natural person allocate free financial resources.

On the other hand, FIRNA (2016) indicates that robo-advisors are client-facing tools that incorporate the first six activities listed above: customer profiling, asset allocation, portfolio selection, trade execution, portfolio rebalancing, tax-loss harvesting.

As indicated in Deloitte report, the term 'robo-advisor' consists of the word "robo" – understood as an automatic process occurring without human participation, which supports making investment decisions with the use of mathematical algorithms; and the word "advisor" – used as wealth and asset management services. Together, robo-advisors can be defined as "online portfolio management solutions that aims to invest clients' assets by automating client advisory" (Deloitte, 2016a, p. 2).

The characteristics of robo-advisor services

Traditional investment managers are people employed by traditional financial institutions such as banks, investment funds, pension fund or insurance companies. They offer services to a variety of parties, including both issuers and investors (Sironi, 2016). Whereas, robo-advisors, in contrast to traditional investment managers, interact with customers through online systems offering little or no human intervention (Lieber, 2014). The first robo-advisors appeared between 2008 and 2010, as one of the aspects of the development of financial technology (fintech) (Bjerknes, Vukovic, 2017). Robo-advisors can be qualified using the following criteria:

1. Service digitalization degree – with four degrees: 1.0, 2.0, 3.0, 4.0.
2. Investment strategy – active or passive, mixed.
3. Investment risk.

There can be distinguished a four-stage digital asset management, with every stage being more technologically advanced than the previous one. Over 80% of robo-advisors that operate in the largest markets (Germany, USA, UK) at level 3.0. offer fixed investment strategy, while others choose to include as well market changes in automated portfolio rebalancing proposals, which is the higher degree in service digitalization (Deloitte, 2016a, p. 3).
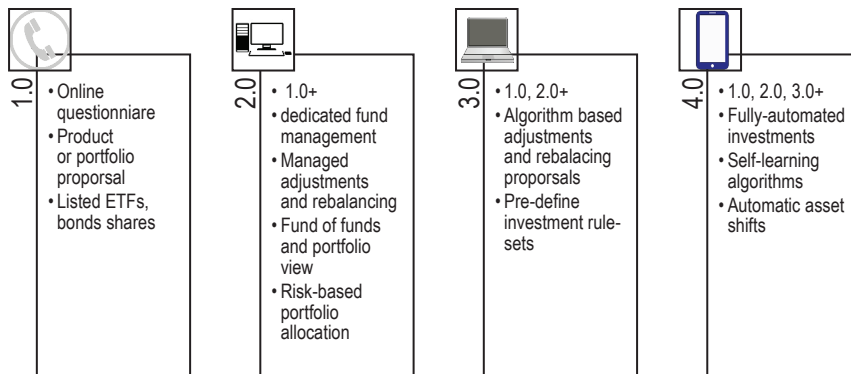

Figure 1. Robo-advisor evolution: Digital Wealth Management from 1.0 to 4.0

Source: Deloitte (2016a).

The individual levels define the scope and type of services available. Level 1.0 is usually a proposal of a specific product mix or portfolio allocation using phone or online questionnaire. Level 2.0. is a more advanced service including appropriate accounts, whereas 3.0. level of service development offers managing accounts and/or providing ongoing advices. The most sophisticated 4.0. applies machine learning techniques or even artificial intelligence to portfolio management (Deloitte, 2016b, p. 4).

Investment portfolios offered in Germany by robo-advisors are divided into risk classes depending on the applied investment strategy. The risk is assessed on a point scale and qualitatively (low, medium, high) on the basis of the composition of the portfolio. The higher the part of shares in the portfolio, the higher the risk is (Tönnesmann, 2018).

Some of the benefits resulting from digital asset management include (www.visualvest.de, 2018):

1. Low fees – thanks to the use of digital and automated processes as well as no need to maintain an expensive network of customer service points, the service provider can lower costs and offer asset management services at competitive prices.
2. Time saving – the digital asset manager is able to find the right investment within a few minutes and optimize the composition of the portfolio throughout the duration of the investment.
3. Flexibility – the choice of strategy, deposits and withdrawals to an account, online contact with the advisor, access to the advisor at any time from any place using a computer or only a telephone.
4. Availability – traditionally, professional asset management was reserved exclusively for wealthy investors. Thanks to digitization, individuals investing only EUR 25 per month can use digital asset management services.

5. Professional consultancy – automatic robots are created on the basis of models developed in scientific works on finances, and therefore their decisions and suggestions are professional and objective (no risk of subjective judgment or attitude of a financial adviser).

The negative aspects of the use of robo-advisors in asset management are (www.deutschefxbroker.de, 2018):

– limited choice of financial instruments and financial markets,
– no possibility to create an individualized portfolio,
– lack of data enabling assessment of the effectiveness of portfolio management by robo-advisors, due to the relatively short time of their operation and the related lack of historical data on rate of return,
– no possibility of personal meeting and discussion about management details,
– portfolio cannot be adjusted to the changing situation of the investor. Robo-advisors are not flexible and the client, if circumstances change, must change the strategy on his own.

Research results and conclusions

Data on the development of the German robo-advisor market covered the period starting from 2016. According to the statistics, in 2018, the value of assets managed by robo-advisor will amount to nearly EUR 4 million, while by 2022, an increase in assets of almost EUR 24 million is forecasted, which indicates an average annual increase by over 56% (www.de.statista.de, 2018).

Table 1. Basic data characterizing German robo-advisor market

	2016	2017	2018*
Value of assets in EUR million	718.7	1,787.5	3,976
Number of clients in thousands	73	132	210
Average value of assets per customer in EUR	9,858	13,510	18,915

* Values for 2018 are forecast values.

Source: own work based on data from Statista, July 2018 www.de.statista.de (2018).

Data obtained from German market indicates not only an increase in asset value of robo-advisor portfolios, but also an increase in the average value of customer assets. During a year (2017/2016), the number of clients of companies offering asset management by robo-advisors increased by over 80%, and according to forecasts, the dynamics in the next year will also be similar – an increase by approx. 70,000 customers per year.

Extra-Magazin (www.extra-funds.de) presented an overview and characteristics of 25 robo-advisors offered to German clients. In general, it can be concluded that these financial services are not of exclusive nature. Only seven companies introduced a threshold of the minimum level of invested assets at the level of at least EUR 10,000, which is not a high threshold when considering the wealth and value of household savings in Germany. This is also confirmed by the results of the Deloitte research (2016b, p. 4) which indicates that robo-advisors are definitely more available to individual investors than the traditional wealth and asset management companies, which in Germany require investment assets worth EUR 1,000,000.

The service costs depend on the investment costs. Fees charged for asset management by robo-advisors are relatively low, and only in the case of four companies, they are at the level of 1.1–1.3% of the value of managed

assets; in other companies the level of fees is below 1% of the value of assets. In the case of seven companies, the annual fees for asset management are lower if the value of the investment is higher.

Table 2. Robo-advisors in Germany – costs and minimum investment value

No.	Robo advisor	Annual fees		Minimum investment value in EUR
		with an investment value of EUR 5,000 (%)	with an investment value of EUR 100,000 (%)	
1.	Fintego	0.95	0.45	2,500
2.	Gimon	0.39	0.39	1,000
3.	Prospery	0.69	0.69	1
4.	Quirion	from 0.00	from 0.43	5,000
5.	Scalable Capital		0.75	10,000
6.	Vaamo	0.79	0.49	10
7.	VisualVest	0.60	0.60	500
8.	Whitebox	0.95	0.60	5,000
9.	Growney	0.99	0.39	1
10.	Investify	1.00	1.00	5,000
11.	Wüstenrot	0.95	0.45	2,500
12.	Baloise MONVISO	from 1.24	from 1.24	400
13.	Comdirect	0.95	0.95	3,000
14.	Easyfolio	from 0.95	from 0.95	100
15.	Minveo	1.00	1.00	50
16.	Robin	1.00	0.88	5,000
17.	WeltSparen	0.33	0.33	2,000
18.	Sutor Bank	0.70	0.70	5,000
19.	truevest		1.25	10,000
20.	United Signals	from 0.49	from 0.29	2,000
21.	Castel Insight		1.30	25,000
22.	Fundamental Capital		1.00	50,000
23.	Solidvest		1.10	25,000
24.	Warburg Navigator		1.20	20,000
25.	LIQUID		from 1.00	100,000

Source: own work based on data from: https://www.extra-funds.de/robo-advisor (2018).

Considering investment strategy offered by robo-advisors, the German market is dominated by companies offering active management (42%), while companies offering only passive management account for 25% of service providers, and 19% of companies offer both options – clients can choose between active and passive management style. There are also robo-advisors who do not provide portfolio management services, but only suggest traders on request (Deloitte, 2016b, p. 4).

The results of analyzes indicate that about 80% of robo-advisors on the German market are service providers that offer the 3.0 level (according to the division indicated in Figure 1). Usually the differences result from the application more or less sophisticated version of online questionnaire in order to propose a product or an investment portfolio (Deloitte, 2016b, p. 4).

Conclusions

Financial services offered by robo-advisors are a financial innovation resulting from the development of fintech. The world's largest robo-advisors market is the United States, with asset value estimated at EUR 24,699 million at the end of 2018 (www.de.statista.de, 2018).

Experts in the German market, in turn, estimate that in the following years, the value of assets managed by robo-advisors will increase. However, it seems that the biggest challenge is to increase the security, trust and transparency of investments, which may convince a larger number of potential investors to entrust assets to robo-advisors (www.roboadvisor-portal.com, 2018). The results of portfolio management efficiency and rates of return achieved by their clients are and will be as well very important for the development of robo-advisors services.

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