A LEGAL FRAMEWORK FOR ROBO-ADVISORS

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Abstract: *The aim of this paper is to offer a broad framework to allow a better understanding of the current legal situation of Robo-Advisory. The disruption of robo-advisors as new market players in the financial sector are bringing new challenges that the regulators must face in the short term. For this reason, at this time, it is necessary to delve into some key aspects that regulators should consider in order to create and implement efficient regulation of this new phenomenon. The goal of this work is to clarify some aspects in order to understand Robo-Advisory from the legal point of view, taking into account the determinant uses of Robotics, Artificial Intelligence (AI) and Digital Technologies to the financial services, with a brief and particular focus on the European Financial Market Regulation.*

1. Introduction

During the last years, much has been said, written and theorized about the so called «Internet of Value» versus the more common and extended «Internet of Information». This leap of technology and creativity on its application in the financial system has only been possible thanks to the development of the «Fintech Industry» [Haddad/Hornuf 2016]. Fintech or «financial technology» implies a new sector that has emerged to support the introduction and implementation of digital technologies in the financial system, by adding value to its normal operations [Kakavand et al 2016].

Embedded in the Fourth Industrial Revolution [Schwab 2017] characterized by the application of digital technologies that affect all aspects of human life, the development of Robotics, AI and Blockchain[1] are being considered «the next big thing» due to the many possibilities that they entail for the future of the economy and its many sectors, and in particular those regarding investment and financing [the economist 2015, Garvía/Sanz 2017].

One of the many disruptors through these innovative approaches to the economy, and applying modern technologies in doing so, are start-ups related to digital financial advising and asset management called robo-advisors [the economist 2015]. These new players, albeit more modest in size and resources than their traditional competitors (banks and other financial institutions and human professionals such as investment firms and financial advisors) are profiting from the aftermath of the 2008 financial crisis, and are thriving spectacularly in the financial sector [Blackrock 2016]. Robo-advisors have leveraged the mistrust of many consumers in the great banking corporations, and are thus offering simpler ways to invest, mostly via smartphone or through their websites, providing their customers with services accessible 24/7 at a minimal operational cost [Mercadante 2016].

[1] Uk Government Chief Scientific Adviser, Distributed Ledger Technology: beyond blockchain. Report, UK Gov-ernment Office for Science, 2016.

This new kind of financial start-ups using Robotics and AI, labelled with the term Fintech, are growing by the second, in all regions of the world, developing new financial products and tools, always trying to thrive and fulfill their customers' needs. And in doing so, they are shaping the present and the future of finance, and ultimately, of the global economy [Meola 2016].

One step further from these new prospects in financing is the application of the technologies in the regulatory and normative sectors. One of the major advantages that start-ups have against the banking corporations is the relative lack of regulation, as opposed to the major monitoring that banks suffer, especially since the 2008 crisis [Arner et al 2016]. In this sense, the so called «Regulatory Technologies», or «Regtech», are meant to enable better and more efficient compliance processes, solving legal requirements in a more cost efficient and secure way, and banks and other investment players have their sights set of these innovative solutions for their legal concerns [Institute Of International Finance 2017].

In this paper, we will analyze Robo-Advisory from the legal perspective, as one of the defining uses of Robotics, Artificial Intelligence (AI) and Digital Technologies in the financial sector. The aim of this work is to delve into some legal challenges that the application of robo-advisors entails and the different normative approaches that we can find for the improvement of the current legal framework of robotics in the financial sector. Legal implications as well as the shortcomings of these concepts and relations are discussed.

2. Some Reasons Beyond the Emergence of Robo-Advisors

Robo-advisors are a response to a more complex and wide-ranging set of services and instruments offered in the financial markets. On the one hand, because of the new complexity, new legal requirements have emerged in the financial sector (i.e. MIFID 2) and its very technical requirements can be easily accomplished by non-human advisors and managers (robots). On the other hand, robo-advisors represent an absolute competitive advantage for their users and financial institutions, considering big data analysis and management regarding their clients and products information.

For both reasons, we can state that Robo-advisory is a response to the complexity that is already allowing two functions for its users: firstly, because it allows them to comply with legal rules (compliance) and to manage a greater number of clients in an increasingly complex environment. Other market players, without robotic support and its applications in algorithmic trading, will not be able to comply with the new legal rules at this level since the current and future financial regulation is in knowing one's own clients and the products advised or managed (information duties, transparency, suitability and convenience test, customer profiling etc.). Secondly, the other advantage of robo-advisors is to take advantage of economies of scale (because they can manage thousands of customers with thousands of products, assets and portfolios) and because of algorithmic trading they can turn the financial business into a low-cost model with a more accurate level of legal compliance.

However, even though robo-advisors solve many current problems and improve market efficiency, they introduce new risks and regulatory challenges that are not being adequately addressed. Consequently, it is necessary to think about an optimal legal framework for robo-advisors based on two aspects: the adoption of legal entities for them, according to their operations; and an effective control of data and risk management, since otherwise we could attend a scenario of new systemic risks through the algorithmic trading performed by these software and digital technologies.

3. Some Basics about the Meaning and Scope of Robo-Advisory

Robo-advisor is a broad concept that can have different meanings for different kind of experts, institutions and professionals. For our purpose, we will define a robo-advisor as the algorithm that can provide investment services to an investor [Statista 2016]. It will be important to consider that a robo-advisor will necessary involve a mix of various roles that can be played by the same or different actors: the programmer, the owner,

the user and the investor or client. Considering the relation between each player, we can obtain information that will be valuable when analyzing the legal framework as well as the contractual relationship between the parties [Finra 2017].

If we consider the relation between the user and the investor, we can classify robo-advisors depending on the step of evolution in terms of features and services. Robo-advisors may range from what is called Robo-Advisor 1.0 (that only offers advising services) to Robo-Advisor 4.0 that offers a full integrated investment service, including customer profiling, asset allocation, portfolio selection, trade execution, portfolio rebalancing and tax-loss harvesting [Deloitte 2016].[2]

Finally, it is also relevant to consider the relationship between the robo-advisor and the information that they process. Here it is necessary to distinguish between the information related to the client profile and information related to the investment products. These are distinct levels of development which may not necessarily coincide. Whereas some robo-advisors may work in the field of product management, others could just have all their computer strength focused on their client's risk profiles.

4. Horizons for a Robo-Advisory's Legal Framework

In view of the technological developments, recent financial markets regulation is trying to provide for a degree of harmonization to offer investors a higher level of protection. This is one of the main objectives of the legislative reform movement of the financial markets as a result of the international economic crisis of 2008 and that ten years later has been lead to the implementation of MIFID 2[3] and Basel III[4]. In this sense, financial institutions, banks and investment firms must understand the features of the financial instruments offered or recommended by them and their networks, and establish and review effective policies and arrangements to identify the category of clients to whom products and services are to be provided.[5]

As a result of these new regulations, traditional financial services can be performed easier by robo-advisors. So, in our view, far from requiring new and specific regulation, robo-advisors could help in fostering compliance with newly developed financial regulation. For this reason, we advocate not to expand the amount of financial regulation but to clarify the current legal rules to allow a proper framework based on legal certainty for the introduction and effectiveness of robo-advisors. As previously argued, robo-advisors are giving to their users a competitive advantage that will lead them to manage a bigger number of clients, benefiting from economies of scale with a relatively low-cost business model. However, things are not as simple. A complete regulatory framework for the Fintech industry is still pending, as these technological innovations are growing fast and regulators cannot keep up their rhythm and changes [Garvía/Sanz 2017]. The case of robo-advisors is not different. In fact, the European Securities and Market Authorities recognized this lack of regulation and the need to establish a tailored regulation for Robo-Advisory [Esma 2015].

While the need for clear and effective regulation is beyond question, the scope and depth of regulation of robo-advisors is unclear and should be discussed. For example, Vanguard (2016) mentions in their article the following issues: Governance and supervision of digital advice tools and methodologies; Investors' profiles and assessing investor risk tolerance; Suitability; Customer understanding of digital advice tool methodologies

2 In addition to the several types of robo-advisors depending on the relationship between the user and the investor, we can find other classifications depending on the rest of roles. For example, regarding the degree of independence between the owner and the user, we can separate them into four groups that will require specific kind of agreements: Independent robo-advisor, Segregated robo-advisor, Integrated robo-advisor and robo-advisors that are used only as a tool for other users.

3 Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU.

4 https://www.bis.org/bcbs/basel3.htm.

5 See Introductory Paragraphs 70 and 71 of MIFID II.

and key assumptions; Cybersecurity risks and Systemic risks.[6] Considering these matters, we can develop a postion to contribute to the legal regulation of Robo-Advisories by identifying potential conflict areas that should be considered. We need an innovative legal framework to accommodate Robo-Advisory as one of the main exponents of the Fintech industry, together with digital currencies, blockchain, smart contracts are other innovations [Ey 2016]. That is why it is more necessary than ever to configure a world Regtech agenda to meet the challenges of Fintech [Deloitte 2016].

In the next section this work is going to focus on the discussion about the most suitable forms of legal entity for robo-advisors, the issue of information and data management in Robo-Advisory and the main legal requirements that robo-advisors need to comply with.

5. Ideas about the Legal Forms for Robo-Advisors.

Although at present there is not an explicit regulation for robotics under the European Union Law, robo-advisors could be easily regulated under a different type of entities called «Investments Services Companies» (ISC), depending on the financial services they can provide to the users and clients. For this reason, as we stated before, we must distinguish the task of providing advice, from the task of being able to invest in the name of clients or manage portfolios in an automatically way (algorithmic trading[7]). Accordingly, the requirements will be different depending on how robo-advisors are constituted and its role and features. That will be crucial to understand and develop an optimal and efficient liability regime.

The first aspect to consider is to distinguish between the legal entities that are only able to advise clients and those which can go further in the offer of financial services (manage portfolios and invest on behalf of their clients). Financial advisors and advising firms can provide advice to clients and investors only. However, it seems pointless to regulate robo-advisors using only one of these legal forms because these entities are not legally entitled to invest money on behalf of third parties, which is the crucial task that they can offer now thanks to advanced AI technologies. Advising and managing portfolios while investing on behalf of third parties should conform to ISC requirements. In this sense, the most suitable legal form would be the regulation of robo-advisors as a specific kind of ISC.[8]

Regarding MIFID 2 (which came into force in January 2018), the key issues in this kind of services are those related to compliance with Suitability and Appropriateness Rules, as well as Privacy Rules [pwc 2016]. However, the implementation of a suitable legal form for the robo-advisors would make their compliance with these requirements faster and easier. So for instance, European robo-advisors must comply with MIFID 2 regarding transparency rules in the prices of the services provided, investors' interest protection and clarity in the portfolio creation process.

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6 We should add the key point of the liability in case of faulty advice, technical failures in the robo-advisor´s operating. There are some theoretical and hypothetical models of liability that might be applied to robots (analogies to minors or animals) but it would be advisable to develop a specific liability rules for them and for any kind of similar IA machines or smart financial software, in order to regulate them.

7 We take the meaning of algorithmic trading from Article 4 (Definition Number 39) of MIFID 2: «trading in financial instruments where a computer algorithm automatically determines individual parameters of orders such as whether to initiate the order, the timing, price or quantity of the order or how to manage the order after its submission, with limited or no human intervention, and does not include any system that is only used for the purpose of routing orders to one or more trading venues or for the processing of orders involving no determination of any trading parameters or for the confirmation of orders or the post-trade processing of executed transactions».

8 Moreover, all the existing legal entities shall accomplish MIFID 2 and MIFIR6 regulation, which in some cases are entirely applicable and in others just partially. In any case, robo-advisors should report back to the Supervisors and Regulators about their operations, instruments and clients (disclosure and transparency rules).

6. Main Regulatory Requirements for Robo-Advisors

As any ISC, robo-advisors should comply with the main regulatory requirements for financial advice and asset management. It requires transparency pre- and post-negotiation regarding the volume, price, and existence of secondary markets, and some standards of conduct in terms of the type of client being advised -with higher protection for those that do not have financial knowledge-, the obligation to make a suitability and convenience test, the obligation to inform the client at all times in an understandable way about the services and product provided, and the obligation of best execution to provide the client with the best result possible.

In fact, the use of trading technology has evolved significantly in the past decade and is now extensively used by many market players. Many of them make use of algorithmic trading, where a computer algorithm automatically determines aspects of an order with minimal or no human intervention. So, because of these risks arising from algorithmic trading, robo-advisors should be regulated better and faster. For this reason, as MIFID 2 recognizes, investment firms that engage in algorithmic trading pursuing a market making strategy should have an appropriate system and internal controls in place.[9]

More control and supervision of Robo-Advisory sector would be desirable to strengthen the resilience of markets in the light of technological developments. In particular, one field to explore is to set specific measures and technical guidelines, issued by Esma, on systems and controls in an automated trading environment for trading platforms, investment services companies and competent authorities. In this sense, an European authority (Agency) in the field of Financial Robolaw would be a very desirable project in order to centralize and specialize the supervision of robo-advisors at the European level. It seems crucial and very necessary to ensure that all firms using algorithmic trading (whether they are financial institutions or investment firms, as users and owners of robo-advisors) are authorized, and report about the operations, clients and products of their robo-advisors or similar AI software for financial advice or asset management. Such authorization should ensure those firms are subject to organizational requirements under MIFID 2 and that they are properly registered and supervised.

In that respect, we endorse the MIFID 2 statement that Esma should play an important coordinating role, by defining appropriate tick sizes to ensure orderly markets at European Union level and ensure that market integrity is maintained in the light of technological developments in financial markets.

7. Information and Data Management in Robo-Advisory

One of the main competitive advantages of robo-advisors is their ability to manage massive amounts of data. Investment firms must therefore understand the features of their financial instruments and establish and review effective policies and arrangements to identify the category of clients to whom products and services are to be provided. Robo-advisors are a perfect tool to comply with this requirement. Not only do robo-advisors allow their users to know in a more exhaustive way their clients and financial assets, but also, they enable their users to manage a huge amount of complex and dynamic data which is very difficult and costly to handle for traditional investment firms. This is one of the major reasons of the quick expansion of robo-advisors, although they are also triggering the emergence of new systematic and operational risks.[10]

Unlike traditional advisors (human beings), robo-advisors can go beyond the basic protection of clients' personal information and have a solid control and monitor of their platforms to protect the algorithms from possible cyberattacks. European regulators shall require providing a stronger data privacy policy where the question

[9] See Article 17 MIFID 2.

[10] Legal requirements concerning robo-advisors and their databases depends on the type of information they are managing. If the information is related with their clients or investors, personal data protection and investor protection requirements shall be observed. If the information is related with the financial instruments under their control, then transparency, risk and valuation aspects should be considered.

about how personal data of clients are managed by robo-advisors should be answered in a proper and direct way.

8. Final Remarks on Legal Policy

After analyzing some aspects about the legal framework for robo-advisors, we consider that the existing market conditions are an outstanding opportunity for the introduction of robo-advisors in the financial sector. However, these opportunities and future developments require new and clear legal rules, better than the existing ones. For this reason, we urge lawmakers to enact laws on robotics (robolaw) with more precision and technique, in order to solve current and potential legal conflicts, as for example we can observe in terms of interpretation and implementation of MIFID 2.

Regarding Robo-Advisory, we propose a change in its conceptual understanding, to consider robo-advisors as a true «robo-managers» or «robo-brokers», since the regular operations of these computer programs or smart software -using advanced AI (deep learning)- can provide real decision-taking process of portfolios and financial asset management on behalf of human beings. So, considering this new digital technology, it should be necessary to clarify the current legal frameworks applicable to «robo-advisors» («robo-managers» or «robo-brokers» in a true and practical sense in many cases) because we can distinguish many types of them, and they present multiple features based on their functionality and the provision of financial services to clients.

With the implementation of MIFID 2, advising and asset management must be separated. For this reason, we suggest that independent robo-advisors (and also «robo-managers», i.e., AI computerized management) have now a significant opportunity for market expansion, so that regulators should focus on them as a matter of priority. Currently we face a lack of specific legal framework for the Robo-advisory sector. For this reason, regulators are called to satisfy this demand of legal certainty for financial market players, as it was acknowledged by Esma.

Meanwhile, waiting for a specific regulation, robo-advisors are under the legal system of each country, according to the rules governing their existing legal entities (ICS), institutions and principles. This is the case of liability issues for robo-advisors. Obviously, for the time being, in case of faulty advice (or reckless asset management) made by robo-advisors against its clients (damages), it constitutes a breach of legal or contractual duties, so it leads to a range of possible liabilities. The liability should be transferred to real users of the software or its owners (financial institutions and investment firms). If it is shown that the reckless operations made by the robo-advisors are due to the programming (software design), the liability should be transferred to its programmer. In any case, the management body of the firms involved should be responsible and accountable for the overall strategy and supervision of their robo-advisors, taking into account the firm´s business and risk profile. Appropriate and detailed liability rules regarding Robo-advisory need to be written into regulatory technical standards at an international level. This should ensure that the legal framework for robo-advisors is clear and certain.

The task of creating an innovative and specific legal framework for robo-advisors ought to be accomplished carefully since, as we stated above, there are many mixed features in robo-advisors that could generate new challenges for the existing legal rules, principles, institutions and entities, in case they only advise, or manage portfolios, or also make investments on behalf of their clients. For all these reasons, after analyzing the alternatives and prospective for European robo-advisors, we think that the option that best fits our criteria and that it is also safer and more feasible is to work under the legal form of ISC, since nowadays it seems pointless to operate robo-advisors with legal forms that are not legally entitled to invest money on behalf of third parties.

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