Initial Coin Offerings (ICO): Legal challenges from an Investor Protection Perspective

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ABSTRACT

In the recent years, the advances in the blockchain technology has provided a new and innovative vehicle for companies to search for an alternative form to raise capital: tokens offerings, also known as Initial Coin Offerings (ICO). Startup entrepreneurs are able to sell tokens registered on a blockchain in exchange for cryptocoins, allowing investors to incorporate a bundle of rights and obligations. This new phenomenon has been considerable growing in the past years. In 2016, an automated company called the DAO (Decentralized Autonomous Organization) raised around $150 million by selling tokens around the world to over 15,000 individual purchasers. The ICO can offer a number of benefits for investors through the vast return of investment that they can obtain, resulting in a significant increase of investor's financial health. However, there is also potential drawbacks. The high limited information that investors typically invest increases volatility. Being a market highly unregulated, many ICOs are provided with an insufficient disclosure of information. Moreover, there is a substantial issue regarding the information contained on the white papers due to the silence of its funders or either the possibility of fake identities, resulting sometimes in a high vulnerability to fraud or illicit activities. The main focus in this research is the challenges that ICO retail investors face regarding the cryptocurrency investment market, how investor's behavior can impact their investment decision, as well as the possible solutions aiming the retail investor protection. On the one hand, in order to invest with confidence and clarity, knowledge and awareness are strengths that investors need to have present. On the other hand, a clear regulatory framework as well as intervention by different jurisdictions are the key to protect investor´s interests.

Table of Contents

INTRODUCTION

After the massive impact that blockchain and cryptocurrencies generated in the past few years due to the increase of its value, the market of the Initial Coin Offering (ICO) has substantially rise, becoming an alternatively and important method to blockchain startups raising funds by issuing their own cryptocurrency. Since 2017, there have been a growth popularity of the ICO market, where almost $24B[1] has been raised by blockchain startups through the issuance of these new digital tokens[2], with EOS, a blockchain network and platform for decentralized applications, leading the ranking of the biggest ICO to date with an impressing amount of $4.1 billion being raised in June 2018. Due to its potential of benefiting from the speed of execution and cost savings, ICO phenomenon has giving rise to a considerable amount of investors all over the world to start using this alternative way to invest.

However, in the recent years, substantial concerns related to this new market have been attracting the attention of a vast number of investors. Between 2017 and 2018, the world saw Bitcoin losing a massive portion of its value[3], which led to many investors and crypto currency holders alarmed. The decreasing value of the most successful currency has enhanced investor's awareness of their own investments, mainly due to the lack of protection.

Figure 1: Total Market Capitalization. From September 2017 to September 2018.

Source: Coinmarketcap

[1] ICObench "ICO Market Analysis 2018", https://icobench.com/reports/ICO_Market_Analysis_2018.pdf
[2] CoinDesk, 'State of Blockchain Q4 2017', https://www.coindesk.com/research/state-blockchain-q4-2017/.
[3] The Economist "Bitcoin has lost most of its value this year". https://www.economist.com/finance-and-economics/2018/12/01/bitcoin-has-lost-most-of-its-value-this-year

The insecurity involved in the ICO market is considerable high. Given the uncertainty of the enforceable regulatory framework related to ICOs, investors are highly exposed to significant risks. On the one hand, investors may suffer from fraud attacks. Hackers can easily mislead investors by sharing fake ICOs digital wallets on social media in the expectation that they will transfer the funds to wrong accounts, being almost impossible to reclaim the invested amount. One of the largest fraud examples in the recent years happened with the Vietnamese cryptocurrency company Modern Tech who launched its Pincoin token, collecting around $660 million by promising investors with constant returns and then the team had disappeared with all the amount collected.[4] Given this concern related to fraud attacks, the SEC made it clear already in 2017 that the implementation of a rigorous digital scrutiny when it comes to ICOs would be one of their main focus[5].

On the other hand, frauds are not the only issue that investors may face when investing in ICOs. Given the unregulated framework in the ICO universe and the cryptocurrency market, without investment awareness and financial skills, investors are subject to a significant risk of losing all their capital. The high speculation around crypto-assets and ICOs as well as the price volatility can lead to investors becoming overconfident over their ICO returns or even try to manipulate the token price and thus the market. In addition, the information provided to the investor in the Whitepaper is incomplete and can be misleading since investors may be only aware of the potential benefits and not the risks resulting from their investments.

On a similar approach to SEC's warning, the European Securities Market Authority (ESMA) had already alert investors in 2017[6] and 2019[7]about the risks of extreme price volatility and speculation, as well as the vulnerability of frauds.

Although all market participants in crypto-assets may be affected due to the lack of clarity on how regulatory framework will be processed in order to prevent such risks, this thesis will explain in

[4] Biggs, J., "Exit scammers run off with $660 million in ICO earnings", (TechCrunch 2018), https://techcrunch.com/2018/04/13/exit-scammers-run-off-with-660-million-in-ico-earnings/

[5] Buck, J., "SEC Enforcement Division Says ICOs a Vehicle For Fraud", (The Coin Telegraph 2017) – https://cointelegraph.com/news/sec-enforcement-division-says-icos-a-vehicle-fraud

[6] European Securities and Markets Authority (ESMA, 2017) "ESMA alerts investors to the high risks of Initial Coin Offerings (ICOs)", https://www.esma.europa.eu/sites/default/files/library/esma50-157-829_ico_statement_investors.pdf

[7] European Securities and Markets Authority (ESMA, 2019) "Advice. Initial Coin Offerings and Crypto-Assets", At: https://www.esma.europa.eu/sites/default/files/library/esma50-157-1391_crypto_advice.pdf

Chapter II why such focus is only on retail investors. Thus, despite we are witness an increased attendance of institutional investors in the digital currency market, as it will also be discussed in the end of chapter II, there is still a high vacuum in terms of interest for such market. However, we can assume that the institutional investor's skills, knowledge and experience of investments in the stock market is improved and, in case of big attendance in ICOs, such experience might help them to access more easily all the clear information on the market, as well as such strengths would place them on a strongest position compared to retail investors when facing various investment challenges.

In order to reach a true regulatory field where retail investors can invest without being confronted with reasonable risks, this thesis will answer the following research question: How to improve the current regulatory approach in order to protect specifically ICO's retail investors that often invest in such market? Within this topic, we are able to detail the following sub-questions: 1) To what extent are these risks a serious threat to retail investors? 2) How the current scenario of lack of regulation and market uncertainty can be improved in order to maintain and protect the retail investor´s interests according to their investments and risk-taking?

The present analysis will be divided in four chapters: Chapter 1 will provide a background to the study, including a general overview of the term Initial Coin Offering. An analysis of its process will be integrated in order to understand the different stages of an ICO. In conclusion, a comparative study between Initial Public Offering (IPO) and Initial Coin Offering (ICO) will be conducted in order to recognize how both offerings can have similar and different characteristics regarding their oversight, structure and value. Chapter 2 will analyze how investor's behavior can negatively affect their decision-making investments though different theories and how this theories can be applied to financial markets. In conclusion, two different behavioral biases related to ICOs will be explained. Chapter 3 will consider the regulatory framework of ICOs concerning investments risks by demonstrating how this phenomenon is already being regulated by some different jurisdictions and how are they ensuring the investor protection. Chapter 4 will analyze the risks that retail investors may face, by giving a comparative analysis between the different risks associated in ICOs as well as other type of financing systems such as equity crowdfunding. Later, an analysis to the risks only associated within ICOs will take place in order to understand the level of protection in which the retail investor is subject. Finally, this thesis will close with an overview of the challenges and perspectives related to the retail investor protection in the future.

CHAPTER I

1. Initial Coin Offerings Explained

Although it is difficult to find a proper definition to characterize the term Initial Coin Offering due to its unregulated market and to the different functions and attributions given to its tokens, Rohr and Wright describe this digital currency market as the situation where *"organizers of a project sell digital tokens to members of the public to finance the development of new technological platforms and services. After the initial sale, cryptocurrency exchanges scattered across the globe list tokens for trading and facilitate an active secondary market in which wild price fluctuations are common*."[8] This phenomenon can be considered as a procedure of raising capital used by startups and companies inside the blockchain network. By selling these tokens to a crowd of investors, the token issuer will allocate the raised funds for different activities in his/her project or, instead, for business purposes. This innovative system can be analyzed as an alternative practice of crowdfunding, which presents various benefits such as the low costs of raising money and the fact that it works without the intervention of financial intermediaries, for instance, banks.[9] The tokens issued by investors may represent a range of either financial and consumptive rights, as they may serve as an investment vehicle or a right to access a product or a service in the issuer´s platform[10].

"ICO has become one of the most sought-after sources of revenue for projects that work based on blockchain technology"[11] The technology behind the market of cryptocurrencies and what supports the transactions related to Initial Coin Offering is called Blockchain. In contrast to other existing currencies in the market, Blockchain was described as digitized, decentralized, public ledger' for digital currency and "purely peer-to-peer version of electronic cash'[12] when introduced

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[8] Rohr, J. and Wright, A., "*Blockchain-Based Token Sales, Initial Coin Offerings, and the Democratization of Public Capital Markets*" (October 4, 2017). Cardozo Legal Studies Research Paper No. 527; University of Tennessee Legal Studies Research Paper No. 338. At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3048104

[9] Adhami, Saman and Giudici, Giancarlo and Martinazzi, Stefano, "*Why Do Businesses Go Crypto? An Empirical Analysis of Initial Coin Offerings*" (January 6, 2018). Journal of Economics and Business, Forthcoming. At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3046209

[10] Ibid [8]

[11]Vorobyev A. V.(February, 2018) "*ICO as Economic Security Threat. Possible Risks Analysis. Experience of Foreign States*" At: https://knepublishing.com/index.php/Kne-Social/article/view/1544/3655

[12] Nakamoto, Satoshi (2008) "*Bitcoin: A Peer-to-Peer Electronic Cash System*". At: https://bitcoin.org/bitcoin.pdf

in 2008 by Satoshi Nakamoto, the founder of Bitcoin. The Blockchain network enables a group of participants to share data and information in a decentralization method, ensuring that all the referred data can be stored and moved securely by anonymous users.[13] All transactions are recorded into small datasets known as the Blocks which are interconnected into a chain. Such transactions will be validated and recorded from peer to peer in a "network consensus", where the intervention of third parties such as brokers and banks are eliminated.[14]

The first part of this chapter aims to introduce how an ICO is processed between the pre-ICO and post-ICO stage. The second part seeks to provide a comparative analysis of the Initial Coin Offering (ICO) and Initial Public Offering (IPO) structures, assessing both benefits and risks for a retail investor may be subject to.

1.1. ICO Process

In order to better analyze the ICO process, we shall divide it into 3 phases: the pre-ICO, the ICO launch and the post-ICO.[15]

1.1.1. Pre-ICO

Regarding the pre-ICO from a potential investor´s perspective, when looking for a possible investment in an ICO, the first step should be looking for the relevant cryptocurrency forums, news and social media - for instance, Telegram - where the announcement of a project will be published via a document known as whitepaper, the most important marketing instrument when carrying out a certain project.

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[13] Arnold, L., Brennecke, M., Camus, P., Fridgen, G., Guggenberger, T., et al. (August, 2018) "*Blockchain and Initial Coin Offerings: Blockchain's Implications for Crowdfunding*". At: https://www.researchgate.net/publication/325128747_Blockchain_and_Initial_Coin_Offerings_Blockchain's_Implications_for_Crowdfunding

[14] Chen, Y. "*Blockchain Tokens and The Potential Democratization of Entrepreneurship and Innovation*" Business Horizons, Vol. 61, Issue 4, pp. 567-575, 2018, Stevens Institute of Technology School of Business Research Paper (October 25, 2017) At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3059150

[15]Bourveauand, T., De George, E., Ellahieand, A., & Daniele Macciocchi, D., (2018*) "Initial Coin Offerings: Early Evidence on the Role of Disclosure in the Unregulated Crypto Market*". At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3193392

The whitepaper should contain the relevant information in order to convince the perspective investor about its potential. This information includes the plan of the project, the purpose of the token and its description, how the collected funds will be used, the team behind the project and the possible risks involved.

Another sort of information that should be included is the required code for the constitution of the token, where potential investors are able to review the source code and confirm its viability through platforms such as GitHub[16]. However, as far as we go into more detail in this paper, it will be observed that, due to the unregulated market, the information disclosed in the whitepaper is unaudited and usually deceptive.[17]

Prior to the ICO launch, a pre-sale is conducted in order to help establishing the relevant price of the token sale as well as to collect funds for future expenses during the ICO. By taking the risk of investing at an early stage, bonuses and discounts will be offered to a small group of investors as a compensation[18].

This stage may benefit other potential investors in a way that may produce a positive connotation around the project and therefore, making them believing in its value and start investing.[19]
However, once again, Chapter 3 of this paper will demonstrate how this pre-sale rounds may negatively affect investors due to its early stage risks and also the possible impact created by fraud attacks.

[16] Ibid [7]
[17] Zetzsche, Dirk A. and Buckley, Ross P. and Arner, Douglas W. and Föhr, Linus, "The ICO Gold Rush: It's a Scam, It's a Bubble, It's a Super Challenge for Regulators" (February 15, 2018). University of Luxembourg Law Working Paper No. 11/2017; UNSW Law Research Paper No. 83; University of Hong Kong Faculty of Law Research Paper No. 2017/035; European Banking Institute Working Paper Series 18/2018. At: papers.ssrn.com/sol3/papers.cfm?abstract_id=3072298
[18] Ofir, M. & Sadeh, I. "*ICO vs IPO: Empirical Findings, Market Frictions and the Appropriate Regulatory Framework*". International Journal of Organizational Leadership 7(2018) 120-128 At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3338067
[19] Ibid [10]

1.1.2. The ICO Launch

During the token sale, the issuer may opt to sell a token for a fixed price to investors in exchange for either cryptocurrencies or fiat money. The structure of the funds to be raised are divided in three options: a hard cap, soft cap and no cap. Hard cap is considered as the maximum amount of capital that the ICO project is able to collect. The soft cap, for instance, is the minimum amount of capital required in order to distribute the tokens for the normal development of the ICO[20]. The funds will return to investors if the ICO is considered unsuccessful, i.e. if dos not reaches its soft cap.[21] No cap occurs when there is no limit of the amount that will be accepted.

Usually, ICOs tend to offer their tokens at a fixed price. However, during the offer, it is possible to opt for different types of pricing instruments. One particularly type is called "Dutch Auction", where the price of the token results from a bidding round. The bids collected from the investors are selected from the highest amount to the lowest. Until the sold of the total amount, all of this bids are accepted. The final price for the token results from the lowest accepted bid.[22]

1.1.3. Post-ICO

After the project successfully collects the necessary funds, the tokens classified as an investment vehicle may be listed in crypto exchanges, where the tokens issued by investors are traded on the secondary market, where high short-term returns by investors are a good indicator of the performance of the ICO.[23]
Crypto exchanges can be created depending on several factors, mainly, according to its accessibility, security and, in particular, fees. For instance, in order to be listed, some crypto exchanges require a payable fee from the issuer. Other exchanges enable their clients to vote on

[20] Ibid [18]
[21] Ibid [15]
[22] Bowman, R. (2018). "*GoNetwork ICO to Adopt Dutch Auction Sale Model*". At: https://www.icoexaminer.com/ico-news/hype-around-gonetwork-ico-continues-grow/
[23] Benedetti, H. & Kostovetsky, L. "*Digital Tulips? Returns to Investors in Initial Coin Offerings*" (May 20, 2018). At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3182169

the tokens that should be listed. Currently, there are 255 different crypto exchanges[24] where buyers and sellers are able to trade.

1.2. IPO vs ICO features

Even if it seems that Initial Public Offerings (IPO) and Initial Coin Offerings (ICO) have similar goals due to the common need of raising capital for a project or a company, both processes differ in the way they are structured, providing some benefits as well as risks to retail investors.

First, we argue that ICO´s duration and cost efficiency are in favour of these type of investors rather than IPOs in a manner that (i) the process that an IPO can last is considerable high due to the need of legal and compliance processes, which can take between 90 to 180 days[25] and (ii) the need of intermediaries in IPOs transactions, such as banks, brokers and lawyers. In ICO´s transaction, for instance, there is no need for the action of these intermediaries since it is entirely decentralized and operates on P2P blockchain mechanisms.[26]

Second, in contrast to what happen in typical IPOs where accredited investors[27] are required to be part of IPO´s transactions, we can assume that ICOs investors are mainly non-professional investors who only need an internet connection in order to perform a transaction[28]. However, as we are going to further analyse on Chapter 2, certain type of behaviours mainly from non-professional investors combined with the lack of information and experience on how to properly invest, may affect their investment decisions and consequently lead them to lose a considerable amount of their funds.

The type of documentation is another key able to differ these two processes. When an IPO of a company is issued, a legal document known as prospectus must be created and should include

[24] CoinMarketCap "*Top 100 Cryptocurrency Exchanges by Trade Volume*". At: https://coinmarketcap.com/rankings/exchanges/

[25] Pohl-Zaretsky, G. & Burgess, K. (2018) "*Initial Coin Offerings: Consumer Implications & Considerations*". At: http://consumersresearch.org/wp-content/uploads/2018/06/ICOs-Consumer-Implications-and-Considerations.pdf

[26] Ibid [10]

[27] U.S. Security ad Exchange Commission (SEC) Office of Investor Education and Advocacy (2019) "*Updated Investors Bulletin: Accredited Investors* " At: https://www.investor.gov/additional-resources/news-alerts/alerts-bulletins/updated-investor-bulletin-accredited-investors

[28] Ibid [8]

the necessary information about the project and the IPO´s process in order for an investor obtain the accurate information. ICOs instead are not limited to any legal documentation, the creation of a whitepaper with all the characteristics explained on Section 1.1.1., should be enough as the means to introduce the project to a crowd of investors. Even if this method seems simpler and less costly for token issuers because they are not required to comply with all the legal documents as an IPO´s company is, these required documents must meet some standards of transparency. In contrast, in ICO projects, lack of transparency is an obstacle for retail investors. Again, as it going to be further explained in Chapter 4, due to the lack of regulation and information asymmetry in ICOs, a significant part of whitepapers provides only a small portion of its financial information, as well as barely provide technical information about the project[29], which often leads investors highly exposed to significant risks like fraud attacks[30].

[29] Ibid [14]
[30] Ibid [4]

CHAPTER II

2. Behavioral Finance of Investors in the context of ICOs

The study of Behavioral Finance has been analysed since a few decades ago, when two cognitive psychologists named Daniel Kahneman and Amos Tversky developed the prospect theory which gave rise to the creation of Behavioral Finance[31] . Investor's sentiments may not be similar among each one of them. In fact, various type of investor´s sentiments are found when it comes to investment decisions. Factors such as educational and socio-economic background may influence different investors when acting on the market[32], as the decisions taken by each one can have a significant impact on the expected future returns.

This field of study contradicts several traditional finance theories such as the Efficient Market Hypothesis (EMH), *"the most venerable tenant of financial economics and a staple of contemporary legal analysis''* [33], when arguing that the individual investor's decision-making process is influenced not by their rational investment decisions, i.e., by the high appreciation of their financial goals and risk tolerance level in an efficient manner, but instead, from their cognitive biases, meaning that the impact of investor's decisions is the result of their own emotions while investing[34].

This type of behaviour may lead, in some cases, to the creation of market anomalies and inefficiencies, where investors, due to their instinctive and emotional acts such as fear, optimism or uncertainty, are able to make irrational decisions that goes against their own investment principles. This irrationality from the investors are called 'heuristics biases', where the personal,

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[31] Kahneman, D. and Tversky, A. (1979). ''*Prospect theory: an analysis of decision under risk*.'' Econometrica, 47(2), At: http://www.its.caltech.edu/~camerer/Ec101/ProspectTheory.pdf

[32] Kanndhasan, M., ''*Role of Behavioural Finance in Investment Decisions*''. At: https://www.researchgate.net/publication/265230942_ROLE_OF_BEHAVIOURAL_FINANCE_IN_INVESTMENT_DECISIONS

[33] Langevoort, D.(2002), ''T*aming the Animal Spirits of the Stock Markets: A Behavioral Approach to Securities Regulation*'', Northwestern University Law Review, Forthcoming. At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=305241

[34] Budhiraja, K., Dr. T. V. Raman; Dr. Gurendra Nath Bhardwaj, (2018) "*Impact of Behavioral Finance in Investment Decision Making*''. International Journal of Civil Engineering and Technology, Volume 9, Issue 6, pp. 1151 – 1157. At: http://www.iaeme.com/MasterAdmin/UploadFolder/IJCIET_09_06_130-2-3/IJCIET_09_06_130-2-3.pdf

quick and selective decision-making process leads investors to generate costly mistakes and, consequently, amount insufficient returns in their investments.[35]

One of the most considerable factors that is capable of influencing the behaviour of investors is demonstrated through the social media, where the largest sources of information are provided online.[36] In this context, it is certain to say that due to the fast growth of the internet, the role of social media has made a considerable impact on investor's opinions and actions, leading to the increase of the hype among them. On the one side, ventures usually utilize social media platforms in order to announce their company's projects as a method to influence investor's sentiments. On the other side, investors use such social media platforms with the purpose of analysing other people's sentiments about a project that is being initiated. By searching on chats and forums, investors are able to create their own opinions in connection with the opinion of other investors. Such factors may have a positive/negative impact on retail investor's decisions if there is a positive/negative sentiment across a big number of investors[37].

In the cryptocurrency sphere, retail investor's demand in token's sell also relies in sources such as social media platforms and news[38]. The role of this type of sources is strongly present since the beginning of the ICO process, i.e., the pre – ICO, where crypto startups use social media platform as a marketing tool, such as Facebook, twitter or coindesk.com, to let investors aware by announcing about the content of their project through the release of the whitepaper. In turn, in order to build an opinion about a project that is about to be released, crypto investors usually look to forums where other investors express their opinions. Reddit, one of the biggest forums among the internet has large community of investors discussing various ICO's projects.[39] Typically, a retail investor will use this platform or similar ones before having the intention to invest in an

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[35] Ibid [27]

[36] Calderón, O. (2018), ''*Herding Behavior in Cryptocurrency Markets*''. Universitat Autónoma de Barcelona, Department of Applied Economics. At: https://arxiv.org/pdf/1806.11348.pdf

[37] Gurdgiev, C., O'Loughlin, D., Chlebowski, B.,''*Behavioral Basis of Cryptocurrencies Markets: Examining Effects of Public Sentiment, Fear and Uncertainty on Price Formation*''. (February 3, 2019) Forthcoming: Journal of Financial Transformation Volume 49, March 2019. At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3328205

[38] Ibid [31]

[39] A community with more than 850k users called "subreddit'' was created for the cryptocurrency investors express their opinions. At: https://www.reddit.com/r/CryptoCurrency/ (last accessed May 1, 2019)

ICO. He/she will collect different opinions and sentiments from others and will make a decision of investing or not.

However, as it will going to be further explained in section 2.2., this thesis will hypothetical provide some theoretical factors in order to identify that some behavioural components also negatively affect retail investor's rationality/efficiency in the cryptocurrency market.

2.1. Definition of Retail Investors

In order to explain to what extent the risks about investing in an ICO could be a serious threat to the ''players'' inside the crypto market, retail investors were the type of investor selected in this thesis due to several reasons that will be further described. As explained in chapter 1, not only retail investors are subject to the risks inherent in investing in ICOs. Due to lack of clarity about the regulatory framework, there is a high amount of different players who may lose a big portion of their capital invested. However, 2 reasons should be explained in order to understand why retail investors were selected as the main player in this thesis.

First, it should be noted that the considerable difference of behaviours between retail and institutional investors is generally assumed in the market, whatever is related to stock markets or crypto markets. The experience, knowledge and protection are three fundamental characteristics to distinguish between institutional and retail investors. Consistent with academic literatures, it can be considered that retail investors are less sophisticated than institutional in a way that they are less aware of critical changes in the market due to the lack of knowledge, leading in some cases to act irrationally in their decision making[40] . On the other hand, institutional investors such as investment banks, mutual funds, hedge funds, etc., are considered sophisticated investors who have the necessary knowledge and experience to go into the market[41]. Therefore, we can argue that the lack of knowledge and experience, the highly unregulated market area such as the ICOs

[40] Chen, G., Kim, K., Nofsinger, J & Rui, O. (2007) ''*Trading Performance, Disposition Effect, Overconfidence, Representativeness Bias, and Experience of Emerging Market Investors*''. At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=957504

[41] Hacker, P. and Thomale, C., "*Crypto-Securities Regulation: ICOs, Token Sales and Cryptocurrencies under EU Financial Law*" (November 22, 2017). At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3075820

and the lack of transparency, particularly in the whitepapers[42], leads retail investors to not be fully legal protected against possible frauds, and, consequently, they are more exposed to risks rather than institutional investors.

Second, even though we don't have the necessary data, we assume that the digital currency market is highly dominated by retail investors[43], although we slowly note signal of institutional investors starting to enter the market[44] as we are going to further explain in section 3.2. Furthermore, as explained by now, one of the great advantages about ICOs is the simplicity of investing. Retail investors are aware that time and cost efficiency can be an obstacle in their decision making. However, ICO transactions provides the benefit of investors being able to purchase tokens in a manner of minutes and only with an internet connection[45], in contrast to what occurs in the stock markets where only accredited investors are allowed to operate in transactions[46]. This ease of entering in the ICO market allows startups to collect money from the average investor[47], explaining in this way the possible dominance of retail investors in the cryptocurrency market due to easy accessibility of ICOs to such investors.

2.2. Behavioural Biases in ICOs

In Initial Coin Offerings, little is known about the study of behavioural finance. However, it is hypothetical possible to combine the study of the prospect theory with the cryptocurrency market due to the existence of a high attendance of investor's irrational behaviour, mainly due to the lack of information in an efficient manner. This means that similarly to what happens in the stock market, emotions like fear, optimism or uncertainty are features that can be applied into the same sphere as the cryptocurrency market, also leading investors to take irrational actions on their decision making.

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[42] Ibid [4] [14]

[43] Ibid [11]

[44] Yakubowski, M. (2019) ''*Survey: 41% of Institutional Investors to Invest in ICOs Within Five Years*'' (Cointelegraph) At: https://cointelegraph.com/news/survey-41-of-institutional-investors-to-invest-in-icos-within-five-years

[45] Ibid [23]

[46] Ibid [22]

[47] Ibid [11]

After the Bitcoin craze, noise market gave rise in the cryptocurrency world. New investors started to be more attracted mainly because of attention given by the media and by the simplicity of acquiring cryptocurrencies[48]. Also, the massive amount of profits made by early investors, where the Returns on Investment (ROI) of the top 10 ICOs in 2017 was higher than 50,000%[49], conducted such increase.

Fear of Missing Out (FOMO) was among a great number of investors especially because they didn´t want to miss the chance of also earning large profits resulted from such phenomenon, wherefore quick decisions about investing in cryptocurrencies were made[50]. Another term to describe it is the ''Bandwagon effect'', where investors are attracted by the increasing of the cryptocurrency prices and, even without the adequate knowledge to take an action, they will follow the steps of other investors, mainly sophisticated investors such as experienced and wealthier investors (''*jump on the badwagon''*) in order to make easy profits[51].

Among various types of behaviours, ICO investors can be sensitive about noise market. As mentioned above, given the lack of knowledge and experience, retail investors does not have access to a great part of the certain information. Most of the times, retail investors do not have a secure opinion or the necessary confidence to invest by their own. Instead, they are strongly influenced by what their listen on news, social media and even from other opinions or sentiments, leading retail investors to do costly mistakes. Therefore, we can support that these noise traders began to make investment decision because some psychological biases pursuant to emotions or sentiments from other players.[52]

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[48] Clements, R., "*Assessing the Evolution of Cryptocurrency: Demand Factors, Latent Value and Regulatory Developments*" (February 3, 2018) Forthcoming, Volume 8, Michigan Business & Entrepreneurial Law Review, At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3117635.

[49] Coin and Crypto (Hacker Noon, Dec. 5, 2017) "*Early Investors are Making 50,000% Returns on ICOs*", At: https://hackernoon.com/investors-are-making-50-000-returns-on-icos-32432bc741d1; CoinTelegraph "*Top 10 ICOs with the Biggest ROI"* At: https://cointelegraph.com/ico-101/top-10-icos-with-the-biggest-roi;

[50] Protho, K., (2017) ICO Alert "*7 Cognitive Biases that Are Plaguing the Cryptocurrency Industry*". At: https://blog.icoalert.com/7-cognitive-biases-that-are-plaguing-the-cryptocurrency-industry

[51] Ibid [30]

[52]Sherman, N. "A Behavioral Economics Approach to Regulating Initial Coin Offerings" Nathan J. Sherman, A Behavioral Economics Approach to Regulating Initial Coin Offerings, 107 Geo. L.J. Online 17 (September 2, 2018) At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3243028

Although there is some dearth related to academic literature about investor´s behaviour in Initial Coin Offerings, this thesis aims to provide 4 different behavioural biases in which cryptocurrency retail investors go through in their investment decision-making.

2.2.1. Overconfidence

The overconfidence bias is perhaps one of the most studied heuristics in individual investors. Being recognize as an attitude of overestimate their own abilities, individuals tend to be optimism in certain circumstances as they have excessive confidence in their expertise, skills or even in the way they accurate information.[53] The expression "it will not happen to me" is common on people who usually are invulnerable to risky situations.[54]

Regarding investment decision making, this kind of behaviour can be harmful to investors in a way that they may overestimate their own ability to analyse a company or a stock. Given their lack of information about past trends or future expectations, retail investors exclusively rely on their own judgment when deciding to invest, leading in most of the cases to unsuccessful investments.[55]Even if retail investors get poor returns, the overconfidence bias is present because there are situations where they are going to blame the market due to failures.

In terms of cryptocurrency markets, a notable example of overconfidence happened in the end of 2017 when early investors made fortunes with the Ripple virtual currency (XRP)[56], where its price reached an incredible value of 36,600%[57]. Because of its great success, a large group of investors, particularly investors with lack of experience, remained optimism and proceeded investing on Ripple assuming that this ''gold moment'' would continue. This excess of confidence

[53] Ibid [30]
[54] Ricciardi, V. (2004) "*A Risk Perception Primer: A Narrative Research Review of the Risk Perception Literature in Behavioral Accounting and Behavioral Finance*" Golden Gate University. At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=566802.
[55] Ibid [28]
[56] Popper N., ''*Rise of Bitcoin Competitor Ripple Creates Wealth to Rival Zuckerberg*'' (The New York Times). At: https://www.nytimes.com/2018/01/04/technology/bitcoin-ripple.html?_r=0&module=inline
[57] Frankel, M., '' *If You Bought $1,000 of Ripple in 2017, Here's What It Would Be Worth Today*'' (The Motley Fool). At: https://www.fool.com/investing/2018/02/15/if-you-bought-1000-of-ripple-in-2017-heres-what-it.aspx

resulted in great losses of money in the beginning of 2018, where only investors with some cautiousness were able to keep considerable profits.[58]

2.2.2 Herding Behaviour

Herding behaviour can be defined as the notion that people tend to behave in a certain way because others are acting and thinking similarly"[59]. In some situations of uncertainty, individuals tend to rely on the group's behave in order to make a decision instead of design their own analysis. One of reasons can be the fact that individuals are afraid to make personal decisions in critical moments that may turn later to be considered a wrong decision.

Although the cryptocurrency market remains a quite unexplored market, the lack of regulation, information asymmetries between investors and price volatility in the ICO market makes it possible to find evidence of herding behaviour. As explained above, news and social media have a significant impact on crypto investor's sentiments as it operates as a tool to let investors aware of which tokens should be purchased. However, not all type of investors are able to make the right decisions because even if there is a lot of information from such sources, some level of knowledge is required to investments be considered successful.

Even without considering the risks, inexperienced investors will rely most of its time in information they find in forums, social networks or news and, after some research, they will probably be influenced by other opinions rather than their own judgements. A good example of how social opinions had influenced crypto assets and thus, increased the herding behaviour, happened when cryptocurrency leaders such as Vitalik Buterin (creator of Ethereum) and Charlie Lee (creator of Litecoin) gave their opinion on certain cryptocurrencies, affecting in such way the prices[60].

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[58] Bitcoin Exchange Guide News Team (2018) "*How To Deal With "Overconfidence" When Trading Cryptocurrency Markets'' (Bitcoin Exchange Guide)*. At: https://bitcoinexchangeguide.com/how-to-deal-with-overconfidence-when-trading-cryptocurrency-markets/

[59]Lin, T., (2011) '' *A Behavioral Framework for Securities Risk''*, (April 16, 2012) 34 SEATTLE U. L. REV. 325, 347 At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2040946

[60] Bourie, E., Gupta, R. & Rouband, D. (2018) ''*Herding Behaviour in cryptocurrencies*'' USEK Business School, Holy Spirit University of Kaslik, Jounieh, Lebanon; Department of Economics, University of Pretoria, Pretoria 0002, South Africa; Montpellier Business School, Montpellier, France. At: https://www.sciencedirect.com/science/article/pii/S1544612318303647

A few academic researchers are found to develop this kind of behaviour in connection to cryptocurrencies. Bouria et al. argue that market uncertainty is related to herding behaviour in a way that ''*crypto traders become more confident about the (upward) direction of cryptocurrencies and thus tend to mimic the trading actions of others*''[61]. Furthermore, Caldéron finds that the existence of herding behaviour depends on the expose of positive returns[62]. In contrast, Leclair figure that the announcement of banning ICOs in China caused a shock in the market and, as a consequence, positively affected the herding behaviour among investors.

2.2.3. Availability

Another significant heuristic bias which may influence retail investor's decision making is known as availability. This behavior clarifies that individuals usually form their decisions based on the most easily available information[63]. The availability heuristic points out that investors tend to make irrational decisions provided from information that was easy to access or to understand or even from recent information in the memory that investors think that might be relevant. However, in some cases, such information may be considered a risk for investors as it may be not truly relevant or even incorrect to their decision making[64].

Once more, it is possible to analyze how a particular behavior may be influenced by sources such as social media and news. Before deciding to invest, retail investors will assess the startup in order to develop his knowledge and interest about the project. In the cryptocurrency market, the ICO assessment will be though the whitepaper of a blockchain startup. If the project of the startup is easy to comprehend or it looks similar to another project previously analyzed, retail investors will usually rely on that type information and invest on it.[65] As it was mentioned above in the present sub-chapter, this may not be the best solution for retail investors because due to their conformity and the desire of making quick profits, they will likely not analyze other projects or other type of

[61] Ibid [43]
[62] Ibid [30]
[63] Ibid [38]
[64] Ibid [28]
[65] Stanley, M .(2019), ''*The Application of Behavioural Heuristics to Initial Coin Offerings Valuation and Investment.*" University of Essex, UK, At:https://jbba.scholasticahq.com/article/7776-the-application-of-behavioural-heuristics-to-initial-coin-offerings-valuation-and-investment

information. Instead, retail investors will probably rely on the basis of the information assessed by them, resulting in some cases in the loss of profits due to the lack of knowledge.

2.2.4. Disposition Effect

Following the Kahneman & Tversky's prospect theory[66] to investment decision making, the disposition effect was first introduced by Shefrin & Statman[67], being described as "*the tendency of investors to sell winning stocks too early and hold losing stocks too long*''[68]. The disposition effect demonstrates that, regarding his/her investment decision making, after the investor analyzes the several possible alternatives of winnings and losses, he/she will be more risk averse in terms of winnings, i.e., low returns with less risk and, in contrast, will be more risk tolerance in connection with possible losses[69]. In addition, other kind of sentiment investors may carry on in their decision making is known as the stimulation of regretless caused by the situation when an investors decides to purchase stocks that in time will depreciate its value.[70]

As mentioned above, investors can be very sensitive in terms of decision making. They don't like to see their capital invested vanishing, so usually investors tend to sell their winnings because it conveys a positive feeling among them. In contrary, if their returns are considered poor, they will try to avoid regret by not selling the stock due to the fear that the value of the stock it rises again[71].

In the virtual currency market, the disposition effect had its first signals of relevance especially with the bitcoin boom at the end of 2017 and with its significant fall on the beginning of 2018.

[66] Ibid [25]
[67] Shefrin, H., & Statman, M. (1985). "The disposition to sell winners too early and ride losers too long: Theory and evidence". Journal of Finance, 40, 777–790. At: https://www.researchgate.net/publication/294684138_The_disposition_to_ride_winners_too_long_and_sell_losers_too_soon_Theory_and_evidence
[68] Hien, N., Duy, N., Vu, L & Tram, N., (2012) ''*Empirical Research of Disposition Effects in Vietnam's Stock Market*''. At: https://pdfs.semanticscholar.org/c8ac/787d3ae5f2e81a3321e137da9701aab15487.pdf
[69] Ibid [32]
[70] Ibid [53]
[71] Ibid [51] [53]

Figure 2: The rise and fall of Bitcoin price

Source: CoinMarketCap

After some investors made considerable returns while investing in ICOs[72], in the beginning of 2018 a large crowd of investors saw their investments highly decreasing, resulting in big losses[73]. However, instead of quickly remove their money invested with the fear of losing all the amount, numerous investors, with the help of social media, news and other opinions[74], performed as risk tolerance investors by deciding to hold their funds in hope for the rise of cryptocurrency prices.

2.3. Impact of Institutional Investors on the ICO market

Although it is still a market where is assumed that retail investors are in abundance[75], we can clearly observe an increasing interest of the ''big players'' in this disruption industry. Together with a large group of unsophisticated investors, other references such as experienced and wealthier investors, or as it might be called "crypto whales" are already in the crypto market for a considerable time. Examples like the twin brothers Cameron and Tyler Winklevoss, who's became famous after the lawsuit against the Facebook´s CEO Mark Zuckerberg, were one of the earlier investors in Bitcoin. In fact, the twins owned 1% of all bitcoins on the market, becoming

[72] Ibid [33]
[73] Popper, N. & Lee, S., (2018) ''*After the Bitcoin Boom: Hard Lessons for Cryptocurrency Investors*'' (The New York Times) At: https://www.nytimes.com/2018/08/20/technology/cryptocurrency-investor-losses.html
[74] Conner, S., (2019) ''*Experts Predict Bitcoin Will Boom Again in 2019*'' (The Independent Republic) At: https://theindependentrepublic.com/experts-predict-bitcoin-will-boom-again-in-2019/
[75] Ibid [11]

one of the wealthiest early investors in the world with an amount of almost $1 billion[76]. Other example is the former actor Brock Pierce who already made a fortune between $700 million and $1 billion in blockchain investments[77]

"Wait until institutional investors embrace crypto",[78] it has been said in the past few years by crypto investors and crypto enthusiasts. Even after some considerable ups and downs in the ICO market, particularly between 2017 and 2018, Institutional Investors such as venture capital firms, investment banks, investment funds and also pension funds are starting to show some considerable interest about joining cryptocurrency investments on their portfolios. This significant consideration by such institutions may present various new opportunities to retail investors[79].

One of the main reasons that explains why institutional investors were at a step back in relation to crypto markets is the uncertainty regulatory framework around ICOs and its lack of protection which may lead to the occurrence of frauds[80]. However, similarly to retail investors, the ease of liquidity provided by ICOs[81] and the potential of such technology made institutional investors begin to be more attracted by it and especially after the great amount of profits made by early investors in 2017[82].

[76] Reynard, C., (2018) "*Who are the richest cryptocurrency investors*?" (The Telegraph) At: https://www.telegraph.co.uk/technology/digital-money/richest-crypto-investors/

[77] Ibid [68]

[78] Kharif, O., (2018) ''*Institutional Investors Are Using Back Door for Crypto Buys*''. At: https://www.bloomberg.com/news/articles/2018-10-01/institutional-investors-are-using-back-door-for-crypto-purchases

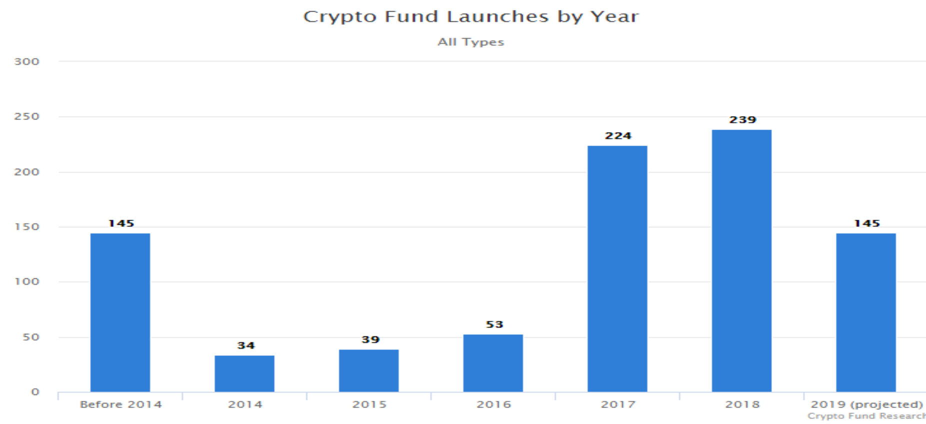
[79] Arnold, A., (2018) ''*How Institutional Investors Are Changing The Cryptocurrency Market*'' (Forbes) At: https://www.forbes.com/sites/andrewarnold/2018/10/19/how-institutional-investors-are-changing-the-cryptocurrency-market/#2e5e231c1ffe

[80] Kastelein, R., (2017) ''*What Initial Coin Offerings Are, and Why VC Firms Care*'' (Harvard Business Review) At: https://hbr.org/2017/03/what-initial-coin-offerings-are-and-why-vc-firms-care

[81] Ibid [68]

[82] Ibid [41]

Figure 3: Number of crypto funds launched



Source: Crypto Fund Research

Through figure 3, we can observe that more than 750 venture capital firms were already launched, as the number of crypto funds created during the past 7 years significantly increased between 2017 and 2018, where such rise was followed by the high value of cryptocurrencies such as Bitcoin, Etheurem or Ripple.

One of the first and most notable venture capital investors in the blockchain area is called Digital Currency Group where consulting, networking, and access to capital are their three main services in order to support blockchain companies[83]. Digital Currency Group often invests in early stages, according to data provided by the group, 72 of the 127 investments were seed investments, where the average investment amount in 2018 was $3.24m[84]. In 2018, another prominent Silicon Valley venture capital known as Andreessen Horowitz, along with two of their general partners, Chris Dixon and Katie Haun[85], launched its crypto venture fund ("a16z") with the total capital of $350M for cryptocurrency investments[86]. More recently, endowment funds such as Harvard

[83] Grant, E., (2019) ''*List of Crypto And Blockchain Venture Capital Firms*'' At: https://usethebitcoin.com/crypto-blockchain-venture-capital-firms/
[84] Digital Currency Group (2019) '' *Blockchain Deal Data (2016–2018*)'' (Digital Currency Group'' At: https://insights.dcg.co/blockchain-deal-data-2016-2018-fcc548b040f
[85] Konrad, A., (2018) "*Andreessen Horowitz Launches $300 Million Crypto Fund Co-Led By Its First Female General Partner*" (Forbes) At: https://www.forbes.com/sites/alexkonrad/2018/06/25/a16z-hires-first-female-gp-for-crypto-fund/#277cb1083b04
[86] Dixon, C., (2018) "*Introducing a16z crypto*" (a16z crypto) At: https://a16zcrypto.com/2018/06/introducing-a16z-crypto/

University has joined a group of institutional investors in order to purchase more than $90 million of a crypto company known as Blockstack Inc[87].

Big investment banks are also being attracted and following the steps of venture capital firms. In fact, between the end of 2018 and beginning of 2019, the crypto world saw two of the big institutions such as J.P Morgan and Goldman Sachs entering on the market. In February, J.P Morgan announced the creation of the first cryptocurrency released by one of the biggest US banks[88]. Its own coin (JPM Coin), allows that payments between institutional accounts are made in an immediate transfer[89]. In 2018, Goldman Sachs' Principal Strategic Investments group along with the venture capital firm Galaxy Digital Ventures LLC closed a Series B investment round[90] with a blockchain security company BitGo.[91]

It is still a long way in order to note a balance between individuals and institutional investors in this market. Lack of protection resulted from an unregulated market remains an obstacle to institutional investors[92]. However, 2 positive aspects may result from the growth of institutional investors in the ICO market. First, such growth may create a positive impact among retail investors, in a way that they might be influenced by these big players in order to keep their interests in investments and risk-taking. Second, the increased crypto market entry of institutional investors might lead to a better improved infrastructure resulted from a stronger regulation in the ICO framework and, consequently, might lead to a closer protection of the retail investors.

The following table presents the some relevant institutions that already entered in the digital assets market, including the announcement´s date and the respective statements:

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[87] McDonald, M. and Marsh, A. (2019) "*Harvard Takes the Plunge Into Crypto With a Token Sale Investment*".(Bloomberg) At: https://www.bloomberg.com/news/articles/2019-04-11/harvard-takes-plunge-into-crypto-with-a-token-sale-investment

[88] Woodford, I., (2019) ''*JPMorgan launches its own cryptocurrency; the first for a major U.S. bank*'' At: https://www.theblockcrypto.com/2019/02/14/jp-morgan-launches-its-own-cryptocurrency-the-first-for-a-major-us-bank/

[89] J.P. Morgan (2019) "*J.P. Morgan Creates Digital Coin for Payments*" At: https://www.jpmorgan.com/global/news/digital-coin-payments

[90] Market Watch (2018) "*Goldman Sachs and Galaxy Digital Ventures Invest in BitGo to Build $1 Trillion Crypto Wallet*". At: https://www.marketwatch.com/press-release/goldman-sachs-and-galaxy-digital-ventures-invest-in-bitgo-to-build-1-trillion-crypto-wallet-2018-10-18

[91] Wikipedia (BitGo) At: https://en.wikipedia.org/wiki/BitGo

[92] Ibid [72]

Figure 7: Relevant institutional investors entering in the cryptocurrency market

Institutions	Date of Publication	Comments
Investment Banks		
J.PMorgan Chase & CO.	February 14, 2019	*''We have always believed in the potential of blockchain technology and we are supportive of cryptocurrencies as long as they are properly controlled and regulated. As a globally regulated bank, we believe we have a unique opportunity to develop the capability in a responsible way with the oversight of our regulators. Ultimately, we believe that JPM Coin can yield significant benefits for blockchain applications by reducing clients' counterparty and settlement risk, decreasing capital requirements and enabling instant value transfer.''*[93]
Goldman Sachs' Principal Strategic Investments group & Galaxy Digital Ventures LLC,	October 18, 2018	*"This strategic investment from Goldman Sachs and Galaxy Digital Ventures validates both our market opportunity and unique position," "No one is better positioned than BitGo to serve institutional investors who want to trade cryptocurrencies and digital assets. That's why we're focused on figuring out what it takes to secure a trillion dollars. The market's not there yet but our job is to be ready first."*[94]
Pension Funds		
Morgan Creek Digital	February 12, 2019	*''This morning our team at Morgan Creek Digital announced a new $40 million crypto venture fund anchored by two public pensions. The institutions aren't coming. They're already here''*[95]- Anthony Pompliano, Co-founder & Partner
VC Firms		
Pantera Capital	February 22, 2019	*"Blockchain venture equity continues to be very strong, both in terms of returns and deal flow. Pantera's first two venture funds, which were launched in 2013 and 2015, are currently valued at 7.2x and 2.8x, respectively. [For the third,] we've raised $130mm of the $175mm fund in the previous closing. Venture Fund III will have its final close on March 28th."*[96] – Bill Healy, President

[93] Ibid [81]
[94] Ibid [82]
[95] David Z. Morris (2019) "*Morgan Creek´s $40 Million VC Fund May be a Turning Point in Crypto Winter*" (Breaker Mag) At: https://breakermag.com/morgan-creeks-40-million-vc-fund-may-be-a-turning-point-in-crypto-winter/
[96] Marie Huillet (2019) "Crypto Hedge Fund Pantera Capital Seals $130 Million for Third Crypto Venture Fund" (Coin Telegraph) At: https://cointelegraph.com/news/crypto-hedge-fund-pantera-capital-seals-130-million-for-third-crypto-venture-fund

Digital Currency Group	2015	*''We are a team who passionately believe bitcoin and blockchain technology will drive global economic and social change. Our unique model enables us to deploy our resources to build the bitcoin and blockchain ecosystem over the long term.*[97]*'* – Barry Silbert, CEO & Founder

[97] Barry, S., At: https://dcg.co/who-we-are/

CHAPTER III

3. ICO Regulatory Framework

Although the main content of the present thesis is focused in Initial Coin Offerings as an investment vehicle, it is important to have in mind that the tokens sold during an ICO may have other purpose rather than using it as an investment outlook. The phenomenon of ICOs during the past few years made a considerable amount of investors earning high profits[98]. However, such explosion of token sales led to a sense of uncertainty among different jurisdictions by raising questions regarding the statute of these tokens.

Usually, two different approaches are able to explain the reason why investors intend to purchase tokens from a blockchain startup. First, a token may be used as an expectation of the performance of the startup's project. This means that by purchasing a token, holders will have the right to access the platform and utilize the online service and usually the right to vote on how such service must be developed.[99] Second, the token may be utilized as an investment vehicle, i.e., the investor's expectation of future profits based on the speculation of the market. Such purchased tokens may be subsequently listed and traded on the secondary market in exchange for other cryptocurrencies or fiat currency[100].

Given the uncertainty in determine the exactly motivation of the purchaser of the token, i.e. if it´s driven by the consumption or the access of an online service, or in turn, if it´s driven by the expectations of profits, that creates a challenging tasks to authorities in the entire world. Such challenges becomes even harder because in most of the times, blockchain tokens displays a hybrid nature when is purchased. This means that in most cases, the motivation of consumption and investment are interconnected, mainly in the case of utility tokens.[101] On the one hand, purchasers acquire their tokens for consumption purposes, on the other hand, due to the active secondary market, it makes it possible to purchaser sell these tokens in crypto changes for investment purposes[102]. Wherefore, it is almost impossible to be certain about the precise

[98] Ibid [43]
[99] Ibid [8]
[100] Ibid [41]
[101] Ibid [8]
[102] Ibid [8]

motivation that drives purchasers buy blockchain tokens. Given the hybrid nature of the token, such phenomenon may also give rise to a hybrid nature of the purchaser´s motivation, which consequently, raises the issue on how regulators are approaching this situation? Below, it will be analysed different approaches by authorities, mainly in the US and Europe.

However, given the lack of certainty within the crypto asset ecosystem mainly due to the legal status of the tokens where different rights can be associated whit it, it is currently not possible to find a specific applicable law in order to regulate the ICO market. Special efforts from different jurisdictions were already made in the past few years, however due to such uncertainty, only case by case assessments were possible to realise. On the one hand, the United States first enforcement related to ICOs took place in 2017, when the Securities and Exchange Commission investigated the application of the U.S. federal securities laws to the offer and sale of DAO tokens[103] by imposing the *Howey Test,* as it will be further explained. The European Union, in turn, had a "wait and see" approach in what concerns the risks of investing in an unregulated market[104], where authorities including the ESMA had only released a few warnings about the possible challenges faced by investors as well as a survey to the Member States, as it will be further explained in section 3.2.. On the other hand, countries like China, Macedonia or Ecuador took a stance against ICOs by banning it on the market[105][106].

3.1. United States

Although there is still an uncertainty in how to classify each token due to the fact that virtual currencies are still in an early stage in terms of regulation, different approaches may occur regarding the qualification of the offer and sale of tokens in the United States. Earlier in 2015, authorities already had manifested about cryptocurrencies. In fact, the US Commodity Futures Trading Commission (CFTC) officially classified Bitcoin as commodity[107]. However, such

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[103] U.S. Securities and Exchange Commission (SEC), Release No. 81207/25 July 2017. At: https://www.sec.gov/litigation/investreport/34-81207.pdf
[104] Ibid [6], [7]
[105] Reese, F., (2018) ''*ICO Regulations by Country*''. At: https://www.bitcoinmarketjournal.com/ico-regulations/.
[106] Kaal, W., (2018) ''*Initial Coin Offerings: The Top 25 Jurisdictions and their Comparative Regulatory Responses*" (February 2, 2018)'' CodeX Stanford Journal of Blockchain Law & Policy (2018) U of St. Thomas (Minnesota) Legal Studies Research Paper No. 18-07. At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3117224
[107] U.S. Commodity Futures Trading Commission Release pr7231-15 (2015) At: https://www.cftc.gov/PressRoom/PressReleases/pr7231-15

qualification is limited to Bitcoin, wherefore other cryptocurrencies or tokens, in contrast, should be evaluated individually, depending on their structure[108]. A different approach was took in 2017 from SEC. In fact, the DAO case was a determining factor for the possibility of application of the U.S. federal securities laws to ICOs. The DAO, a decentralized autonomous organization developed by the founder and Chief Technology Officer of the company Slock.it[109]which operates through smart contracts, raised around $150 million by selling tokens around the world to a crowd of 15,000 individual purchasers[110]. However, the SEC considered that transactions regarding DAO tokens involved the offer and sale of a security in the United States and consequently, its duty in complying with the various securities laws[111]. The application of the requirements of the *Howey Test* was fundamental to the SEC conclude in fact that the DAO was considered a security under the Securities Act of 1933 and the Securities Exchange Act of 1934, despite no enforcement was taken against the DAO.

Similar situation took place also in 2017 in the SEC v Munchee[112]. On the offering of its MUN token, Munchee had raised around $15 million in order to improve its app of restaurant´s meal review. However, the SEC considered the MUN token as an investment vehicle and, consequently, a security under Section 2(a)(1) of the Securities Act.

After the DAO report, several warnings were issued by the SEC to further warning investors as well as token issuers about possible risks in investing in a "grey area'' such as the crypto market. In fact, SEC Chairman Jay Clayton had already warned investors in December 2017 that ''*A number of concerns have been raised regarding the cryptocurrency and ICO markets, including that, as they are currently operating, there is substantially less investor protection than in our traditional securities markets, with correspondingly greater opportunities for fraud and manipulation*.''[113] In

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[108] Wöckener, K., Carsten Lösing, C., Diehl, T., Kutzbach, A. (2017) ''*Regulation of Initial Coin Offerings*'' At: https://www.whitecase.com/sites/whitecase/files/files/download/publications/regulation-of-initial-coin-offerings.pdf

[109] Jentzsch, C., (Medium, 2016) "*The History of The DAO and Lessons Learned*" At: https://blog.slock.it/the-history-of-the-dao-and-lessons-learned-d06740f8cfa5,

[110] Becker, B. and McAvoy, D. (2017) ''*Initial Coin Offerings: A look to 2018.''* At: https://www.nixonpeabody.com/-/media/Files/Alerts/December-2017/initial-coin-offerings-ICOs.ashx

[111] Ibid [97]

[112] Securities Act of 1933 Release No. 10445 / December 11, 2017 At: https://www.sec.gov/litigation/admin/2017/33-10445.pdf

[113] Clayton, J. (U.S. Securities and Exchange Commission, 2017) '' *Statement on Cryptocurrencies and Initial Coin Offerings*''. At: https://www.sec.gov/news/public-statement/statement-clayton-2017-12-11

turn, in October 2017 it was Stephanie Avakian's, turn to alert investors about the chances of the sale of tokens resulting in frauds. The co-director of the SEC stated that *"Blockchain technology presents many interesting issues and can of course present legitimate opportunities for raising capital. But, like many legitimate ways of raising capital, the popular appeal of virtual currency and Blockchain technology can be an attractive vehicle for fraudulent conduct. We think that creating a permanent structure for the consideration of these issues within the Cyber Unit will ensure continued focus on protecting both investors and market integrity in this space."*[114]

3.1.1. The Howey Test

Previously implemented in the DAO case and with the goal of attempting to clarify the legal status of the tokens provided by blockchain startups, the SEC released in 2019 a guidance to determine whether the U.S. federal securities laws apply to ICOS.[115] Such guidance provides an analysis of whether a digital asset such as tokens has the characteristics of an investment contract. According to the *Howey Test*[116], four elements including 1) *investment of money by a person*; 2) *a common enterprise*; 3) *the expectations of profits by an investor* and; 4) *trough efforts from others*[117] needs to be satisfied in order to define a token as a security.

The first element involves, aside from money itself, other types of currency such as *"goods, services, promissory notes, and other "exchanges of value."*[118] In this way, by purchasing a token, such situation should meet the prong of the Howey Test due to its similarity as fiat currency or also as an exchange value[119]. In fact, two decisions related to the qualification of Bitcoin as money took place already[120]. Secondly, through this test, an investment in a common enterprise should happen in order to be considered a security. Despite there is no specific definition from the

[114] Ibid [5]
[115] Hinman, B., Director of Division of Corporation Finance & Valerie Szczepanik, Senior Advisor of Digital Assets and Innovation (SEC, 2019) "*Framework for ''Investment contract''. Analysis of Digital Assets*'' At: https://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets
[116] Choi, S. and Pritchard, A., "Securities Regulation: Case and Analysis, 4th Edition *SEC v. W. J. Howey Co. – 328 U.S. 293 (1946).* The Supreme Court had to determine whether some transactions were qualified as investment contracts.
[117] Ibid [96]
[118] Ibid [8]
[119] Ibid [8]
[120] United States v. Faiella, 39 F. Supp. 3d 544, 545 (2014) and also SEC v. Shavers, Civ. No. 4:13–CV–416, 2013 WL 4028182, at *2 (2013)

Supreme Court, some smaller courts approached such element in 3 different ways: the horizontal commonality, the broad vertical commonality, and also the narrow or strict vertical commonality .Given the fact that tokens are usually sold to more than one purchaser/investor, a great part of the tokens, whether utility or security, will be treated as the horizontal commonality.[121] Third, based on the United Housing Foundation, Inc. v. Forman, the Supreme Court defined profits as "*either capital appreciation resulting from the development of the initial investment . . . or a participation in earnings resulting from the use of investor's funds"*[122]. Lastly, under the final element of the Howey Test, such expectations of profits should come through the efforts from others. Despite that the court on the original case of the SEC v Howey Co. in 1946 stated that the expected profits must come *"solely from the efforts of the promoter or a third party"*[123]. However, recent case laws had relaxed the requirement of "solely" and focus more on the nature of such efforts, meaning for example that if the efforts from investors relies mainly on the generation of profits, their participation will not be considered s transaction involving a security[124].

According to the SEC, an ICO token that meets such elements shall be considered an investment vehicle, i.e., as a transaction involving a security and consequently will fall under Section 2(a) (1) of the Securities Act of 1933[125] as well as under Section 3(a) (10) of the Exchange Act[126]. In order to register as a security under such provisions, the companies or projects which are decided to raise funds through an ICO shall have the same requirements as an IPO structure, where registration, prospectus requirement, disclosure of information and other characteristics are considered mandatory, with the risk of facing criminal charges if companies do not compliance with it. Since 2017, after the application of the Securities Act of 1933 and the Securities Exchange

[121] Ibid [8]
[122] United Housing Foundation, Inc. v. Forman, 421 U.S. 837, 852 (1975)
[123] SEC v. Howey Co., 328 U.S. 293 (1946)
[124] Ibid [8]
[125] Securities Act of 1993: *"The term ''security'' means any note, stock, treasury stock, security future, security-based swap, bond, debenture, (…) investment contract, (…) any interest or instrument commonly known as a ''security''(…)''*
[126] *SEC v. Edwards 540 U.S. 389, 393 (2004); SEC v. W.J. Howey Co., 328 U.S. 293, 301 (1946*); and *United Housing Found., Inc V. Forman, 421 U.S. 837, 852-53 (1975)''(…) the presence of an investment in a common venture premised on a reasonable expectation of profits to be derived from the entrepreneurial or managerial efforts of others*

Act of 1934 to the DAO, around 180 crypto projects were already requested to register their tokens as securities[127].

In the United States, despite there is considerable expensive in terms of "going public" as a company, mostly due to the high costs of comply with prospectus regulation wherefore naturally most of the startups aren´t able to afford it, the registration of the tokens as securities provided by crypto startups, in turn, can be considered as an added value for retail investors in terms of transparency, since there are a number of provisions which are applicable to the protection of investors. First, according to Section 325 of the Trust Indenture Act of 1939, '' *Any person who willfully (…) makes any untrue statement of a material fact or omits to state any material fact required to be stated therein or necessary to make the statements therein not misleading, shall upon conviction be fined not more than $10,000 or imprisoned not more than five years, or both.''*[128] Sarbanes-Oxley Act of 2002 in Section 804 provides a sentencing guideline about securities fraud[129]. Finally, Section 207 of the Investment Advisers Act of 1940 states that *''It shall be unlawful for any person willfully to make any untrue statement of a material fact in any registration application or report filed with the Commission under Section 203 or 204 of the Advisers Act, or willfully to omit to state in any such application or report any material fact which is required to be stated therein.''*[130]

3.2. Europe

Since 2017, the fast growth of ICOs globally and mainly in the USA had also led European authorities concerned on the possible risks resulted from the uncertainty of the legal status of crypto-assets. In fact, the European Securities and Markets Authority (ESMA), an independent EU

[127] ICO Bench, one of the most active ICO rating platforms has a list with all the security tokens registered. At: https://icobench.com/icos?filterBonus=&filterBounty=&filterMvp=&filterKyc=&filterExpert=&filterFar=&filterHot=&filterFreeTokens=&filterTokenClass=security&filterSort=&filterCategory=all&filterRating=any&filterStatus=&filterPublished=&filterCountry=any&filterRegistration=0&filterExcludeArea=none&filterPlatform=any&filterCurrency=any&filterTrading=any&s=&filterStartAfter=&filterEndBefore=

[128] Trust Indenture Act of 1939 (Section 325) At: https://legcounsel.house.gov/Comps/Trust%20Indenture%20Act%20Of%201939.pdf

[129] Sarbanes-Oxley Act of 2002 (Section 804) At: https://pcaobus.org/About/History/Documents/PDFs/Sarbanes_Oxley_Act_of_2002.pdf

[130] Investment Advisers Act of 1940 (Section 207 – Material Misstatement) At: https://www.db.com/tcr/docs/Investment_Advisers_Act_of_1940.pdf

Authority who works as a financial regulator[131] already started to monitor this concern in the ICO market in November of 2017 when released two warnings. The first statement resulted on risks that, due to lack of protection in an unregulated market, investors are able to face, primarily because of the ease of losing all of their investment.[132] In such announcement, ESMA stated that: ''*ICOs, depending on how they are structured, may fall outside of the regulated space, in which case investors do not benefit from the protection that comes with regulated investments.''*[133] The second statement was related to the concern among European firms [134] in which ESMA has alerting about their obligations to comply with the relevant legislation if the tokens provided by these firms are considered financial instruments[135].In fact, the same debate about the Howey Test in the US also has its rationale in EU, where the discussion involves the question about if the tokens are considered transferable securities under the EU scope. The Art. 4(1)(18) MiFID defines 'Transferable securities' as "*classes of securities which are negotiable on the capital market*"[136]. Such relevant legislation includes also: The Prospectus Directive (PD), the Markets in Financial Instruments Directive (MiFID), the Alternative Investment Fund Managers Directive (AIFMD) and the Fourth Anti-Money Laundering Directive.

Moreover, follow the European Commission's 2018 FinTech Action Plan including but not limited to the ICO's regulatory framework as well as to the continuation of the lack of clarity in what concerns the application of financial instruments to crypto tokens[137], two reports were provided in the beginning of 2019. First, a report from the European Banking Authority (EBA) advising the

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[131] European Securities and Markets Authority (ESMA) ''*Who we are*'', At: https://www.esma.europa.eu/about-esma/who-we-are
[132] Ibid [6]
[133] Ibid [6]
[134] European Securities and Markets Authority (ESMA, 2017) ''*ESMA alerts firms involved in Initial Coin Offerings (ICOs) to the need to meet relevant regulatory requirements*'' At: https://www.esma.europa.eu/sites/default/files/library/esma50-157-828_ico_statement_firms.pdf
[135] According to Article 4(1)(15) of MFID *II "'financial instrument' means those instruments specified in Section C of Annex I''* which are "*transferable securities'', money market instruments'', ''units in collective investment undertakings''* and other instruments. At: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0065&from=EN
[136] DIRECTIVE 2004/39/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 April 2004 on markets in financial instruments amending Council Directives 85/611/EEC and 93/6/EEC and Directive 2000/12/EC of the European Parliament and of the Council and repealing Council Directive 93/22/EEC. At: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32004L0039&from=EN
[137] European Commission (2018) *''FinTech Action plan: For a more competitive and innovative European financial sector''* At: https://eur-lex.europa.eu/resource.html?uri=cellar:6793c578-22e6-11e8-ac73-01aa75ed71a1.0001.02/DOC_1&format=PDF

European Commission that ''*because some crypto-assets/activities do not appear to fall within the scope of current EU financial services law and are highly risky, as identified in this report, risks arise with regard to consumer protection, operational resilience, and market integrity''.*[138] Second, an advice from the ESMA to the EU commission, Council and Parliament regarding ICOs and crypto assets[139]. In such report, the ESMA had enlightened: (i) the current and relevant legislation regarding the tokens that are qualified as financial instruments such as Prospectus Directive, the Transparency Directive, MiFID II, the Market Abuse Directive, the Short Selling Regulation, the Central Securities Depositories Regulation and the Settlement Finality Directive; (ii) the ESMA's position regarding the gaps existing in EU financial structure and (iii) the risks that investors are subject when the issued tokens are not considered financial instruments.[140]

Such Advice from the ESMA is also followed by a survey realized in the summer of 2018 addressed to the National Competent Authorities (NCAs) in order to understand how each Member State had transposed the MiFID II[141] to its own legislation, i.e., to determine the current position each Member State has about the possible qualification of tokens as financial instruments.[142] According to Steven Maijoor, the Chair of ESMA, "*Our survey of NCAs highlighted that some crypto-assets may qualify as MiFID financial instruments, in which case the full set of EU financial rules would apply. However, because the existing rules were not designed with these instruments in mind, NCAs face challenges in interpreting the existing requirements and certain requirements are not adapted to the specific characteristics of crypto-assets. Meanwhile, a number of crypto-assets fall outside the current financial regulatory framework. This poses substantial risks to investors who have limited or no protection when investing in those crypto-assets.''*[143], whether tokens are or

[138] European Banking Authority (EBA) (2019) ''*Report with advice for the European Commission''.* At: https://eba.europa.eu/documents/10180/2545547/EBA+Report+on+crypto+assets.pdf
[139] European Securities and Markets Authority (ESMA) (2019) ''*Advice Initial Coin Offerings and Crypto-Assets*''. At: https://www.esma.europa.eu/sites/default/files/library/esma50-157-1391_crypto_advice.pdf
[140] Ibid [116]
[141] The MiFID II has resulted from a revision of the MiFID with the goal of improve the efficiency, the strength and the transparency of the European financial markets in order to better protect investors.
[142] European Securities and Markets Authority (ESMA) (2018) ''*Legal qualification of crypto-assets – survey to NCAs''.* At: https://www.esma.europa.eu/sites/default/files/library/esma50-157-1384_annex.pdf
[143] European Securities and Markets Authority (ESMA) (2019) '' *Crypto-assets need common EU-wide approach to ensure investor protection*'' At: https://www.esma.europa.eu/press-news/esma-news/crypto-assets-need-common-eu-wide-approach-ensure-investor-protection

not qualified as financial instruments, ESMA considers that all type of crypto-assets should be susceptible of Anti Money Laundering provisions.[144]

In this context, and following the 2014 *''EBA Opinion on virtual currencies''*[145] where the connection between money laundering and virtual currencies has been already analyzed, the European Parliament gave 'green light' to the adoption of the fifth Anti-Money Laundering Directive[146] (MLD5). One of the main amendments was the creation of a legal definition of virtual currencies, as a ''*digital representation of value that is not issued or guaranteed by a central bank or a public authority, is not necessarily attached to a legally established currency and does not possess a legal status of currency or money, but is accepted by natural or legal persons as a means of exchange and which can be transferred, stored and traded electronically''*[147]*.* Thus, the MLD5 also extends the scope of MLD4 including ''*providers engaged in exchange services between virtual currencies and fiat currencies as well as custodian wallet providers*''[148]. 18 months is the limit date in which Member States are required to transpose MLD5 to their national law.

In the context of national legislation, the development in terms of regulation of technological innovation was already approached by some authorities. Despite being neither an EU nor EEA member but part of the single market, Switzerland, which is included on the top 5 of countries that had raised more funds in 2018 with an incredible amount of $845 million[149], was one of first European countries embracing and promoting the cryptocurrency market, as the country looks to virtual currencies and the blockchain technology as an advantage to the financial markets. In response to the great ICO activity that occurred in the past few years, the Swiss Financial Market Supervisory Authority (FINMA) published a guidance in September 2017 where ''*recognizes the innovative potential of distributed ledger/blockchain technology'', and ''welcomes and supports*

[144] Ibid [116]
[145] European Banking Authority (EBA) (2014) *''EBA Opinion on virtual currencies''* At: https://eba.europa.eu/documents/10180/657547/EBA-Op-2014-08+Opinion+on+Virtual+Currencies.pdf
[146] Official Journal of the European (2018) ''*Directive (EU) 2018/843 of the European Parliament and of the Council of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU''*. At: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L0843&from=EN
[147] Ibid [126] (Article 1(2)(d) (18))
[148] Ibid [126]
[149] Ibid [1]. Besides such great amount, Switzerland is also included on the top 5 of countries with more ICOs completed in 2018, mainly 135 ICOs.

all efforts to develop and implement blockchain solutions in the Swiss financial centre''.[150] In addition, FINMA states the fact that there are no specific regulations governing ICOs, however existing financial regulatory provisions may be applied instead, depending on its structure. Such provisions are essentially the combat of money laundering and terrorist financing, banking law, securities trading and collective investment.[151] In February 2018, FINMA published another letter by issuing ICO specific guidelines in order to provide market participants with a clear information about the implementation of an appropriate regulatory framework in ICOs.[152] Such guideline provides that the various type of tokens and the different ICO structures makes impossible it to generalize, therefore the circumstances must be broadly considered in each individual case[153]. Furthermore, FINMA differs the tokens in different categories, including the specific function of payment tokens, utility tokens and asset tokens, with the intention to create transparency on such dynamic market.[154]

As it can be analyzed above in terms of regulatory response, there is still a great concern related to the way retail investors may be protected by preventing risks in ICOs, whether such risks are originated from frauds attacks or even due to the lack of information that is provided to them. Despite there is an increase in terms of efforts from different financial regulators, mainly the United States and Europe, it seems that authorities still have a long journey in order to create a coherent framework for the offer and sale of tokens. While in Europe there is clearly a ''wait and see'' approach wherefore the regulators prefer a ICO case-by-case analysis depending on the specific structure of the token, in the United States in turn, it seems there are a higher concern about investor protection by applying the U.S. federal securities laws to tokens used as investment vehicles. Regulators from different jurisdictions, especially those with a high amount of ICOs, shall cooperate together with a goal of ensure market integrity as well as to strengthen investors protection in order to allow retail investors feel protected about their investments and risk-taking.

[150] Financial Market Supervisory Authority (FINMA) Guidance 04/2017 ''*Regulatory treatment of initial coin offerings*'' At: https://www.finma.ch/en/documentation/finma-guidance/
[151] Ibid [134]
[152] Financial Market Supervisory Authority (FINMA) *''Guidelines for enquiries regarding the regulatory framework for initial coin offerings (ICOs)''* (2018)
[153] Ibid [136]
[154] Ibid [136]

CHAPTER IV

4. Risks Associated

In Section 1.2. it was explained that, despite this new type of crowdfunding provides a great variety of benefits to all type of investors, especially retail investors who don´t necessary need to have an accredited profile to invest in ICOs or even in the secondary market, as well as because of the absence of cross boarders which allows mostly of the public in the world to have access to a cryptocurrency platform in order to buy and sell tokens, retail investors are subject, however, to considerable risks in the market of cryptocurrencies.

Risks associated with the digital currency market do not arise only from the structure of the market itself and the way it is regulated. As it was previously analyzed in Chapter 3, different type of behaviors are susceptible to the creation of a negative impact in retail investor´s decisions. Lack of knowledge and experience leaves this type of investors take irrational decisions often resulted from the opinion of others or from the basic information accessed by them, where such decisions may lead to a great loss of their investment. However, as it will be further analyzed, even an investor with the necessary knowledge to take rational investment decisions is able to face significant risks due to market frictions existing in the cryptocurrency world.

4.1. Market Frictions

Market frictions, which may occur in crypto market and also in other financing mechanisms, can be described as any market situation which may influence the regular process of an investment decision, preventing in this way investors to trade in normal circumstances[155]. Although it was already described how certain behaviors may influence investor´s decisions, market frictions can also result from different circumstances that leaves retail investors exposed to several risks. The present section will identify how different type of market frictions affects retail investors in the ICO market as well as other sources of funding capital such as equity crowdfunding. In both ICO

[155] Gegennaro, R. and Robotti, C. (Reserve Bank of Atlanta, 2005) "*Financial Market Frictions*". At: https://www.frbatlanta.org/-/media/documents/research/publications/economic-review/2007/vol92no3_degennaro-robotti.pdf

and equity crowdfunding companies, the project developments are still on an early stage scale where the levels of uncertainty about its success are considerable high. There is a lack of guarantee that services or products launched on this level will succeed in the market, however a great variety of retail investors are not aware of the big chance of the project failures at this stage.[156] For example, following a study took by Ernst & Young, "*about a year after raising money, only a small portion of ICO-funded start-ups have progressed towards working product offerings*."[157] This is indeed a very small number even in comparison with regular startup market.

It is usual to see an increased volatility in such financial mechanisms. Speculation is a phenomenon that these type of crowdfunding systems in early stage levels provides due to lack of background of revenues and incomes[158]. Retail investors usually buy shares/tokens in order to late trade in secondary markets, however cross boarder requisites may rise retail investor´s concern because different trade exchanges may be regulated in accordance with its jurisdiction or not regulated at all in its domicile jurisdiction. In the crypto secondary markets (e.g. exchanges), tokens are priced in accordance with the supply and demand in the market. However, due to the massive activity in social media platforms such as Twiter and the possibility to manipulate the level of scarcity of tokens, the price of the tokens may be considerable volatile.[159] In addition, there is a high chance that many of these exchanges in the digital currency market are unregulated and susceptible of price manipulation[160], wherefore retail investors may be in a position where the return of its funds is a difficult challenge due to the lack of protection.

Given the limited disclosure provided and the uncertain regulatory framework applicable, it is apparent that high information asymmetry between the founders and the investors may occur. On one hand, startup companies that raise finance through equity crowdfunding rounds need a platform in order to launch its campaign, whereby only a small portion of the information about

[156] Ibid [6]
[157] Ernst & Young (EY, 2018) "*EY study: Initial Coin Offerings (ICOs) The Class of 2017 – one year later*" At: https://www.ey.com/Publication/vwLUAssets/ey-initial-coin-offerings-the-class-of-2017-one-year-later/$FILE/ey-initial-coin-offerings-the-class-of-2017-one-year-later.pdf
[158] U.S. Security and Exchange Commission (SEC) Office of Investor Education and Advocacy (2017) "*Updated Investor Bulletin: Crowdfunding for Investors*" At: https://www.sec.gov/oiea/investor-alerts-bulletins/ib_crowdfunding-.html
[159] OECD (2019), "*Initial Coin Offerings (ICOs) for SME Financing*", At: http://www.oecd.org/finance/ICOs-for-SME-Financing.pdf
[160] Ibid [6]

the project and the future of the company has to be disclosed and unlike a listed company which is obligated to file annual and quarterly reports, crowdfunding startups are only required to file reports once per year[161]. .On the other hand, crowdfunding platforms in this respect serve as gatekeepers that cherry-pick the most potential startups to offer to investors. Nevertheless, in contrast to the founder who has access to all the information,investor in turn has only access to a limited part of such information in the platform, leaving him/her with a sense of lack of trust due to the possible advantage of the founder using such information in an unfair manner.[162] On the other hand, blockchain startups who are about to transact a sale of a token, typically provide the information of the project from a white paper to investors. Previously mentioned, this document should provide the investor with all the necessary information in order to make sure that he/she will invest properly based on the content of such information. However, in contrast to what happens in an IPO transaction where some standards of transparency should be met because companies are required to comply with all the legal documents, retail investors in an ICO transaction face a great obstacle in terms of lack of transparency due to the regular inadequate information provided by the team of the project. A great part of the information contained on the whitepapers are considered incomplete, unaudited and also misleading, whereby instead of focus on the potential risks, usually it is only mentioned its benefits, leaving investors unaware of such risks at the time of their decision making.[163]

By examinee these aspects, it can be argued that different financial mechanisms are able to put retail investors subject to considerable risks. Early stage financing systems like Equity Crowdfunding and Initial Coin Offerings provides only a few certainty to retail investors. However it still has to be emphasized that equity crowdfunding does not face legal uncertainty as it is in the case of ICOs. Due to the high degree of speculation combined by the irrationality decisions taken by these class of investors, we can assume there is a substantial ease of losing a great amount of their funds, especially in the secondary market where still remains a lack of regulation. In addition, the lack of financial skills will always remain a challenge to retail investors comparing to the superior knowledge of sophisticated investors who are expected to have higher returns or

[161] Ibid 140

[162] Lenz, R. (December 2015) "*'Take Care of the Crowd!' – Legal Protection of Retail Investors in Crowdfunding is Long Overdue"* (University of Applied Sciences, Bielefeld) At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2702243

[163] Ibid [6]

the necessary skills in order to take rational decisions, also the lack of mandatory disclosure related to financial information in the digital currency market or even the minimal disclosure requirements in case of crowdfunding startups will impair retail investors in comparison to the founders/token issuer.

4.2. Particular risks in ICOs

Previously examined, lack of experience and knowledge regarding investments, increased information asymmetry, lack of or limited required disclosure and high levels of speculation are characteristics existing some financial mechanisms, mainly early stage funding systems, which may affect the future financial results, i.e., the possible profits desired by retail investors. However, there are also some challenges that, due to the way the system is structured, it is only possible to harm retail investors in digital currency markets.

4.2.1. Risks related to the Blockchain technology

In contrast to other type of funding startups where there are usually “financial experts” advising investors on the best solutions or even professionals, who have investment skills in particular fields, the lack of expertize in blockchain startups and unproved nature of their business models related to the technology of the blockchain represents one of the major issues that retail investors face in this field. Investors who participate in an ICO transaction should have in mind that financial skills are not enough to interpret the system of the blockchain, technical skills should be included also[164]. However, learning about the basis of the technology should not be sufficient in order to gain such skills and being able to invest properly. The quality of the code and the concept as well as the performance of mathematical verification also should be learned. Because it is a totally new financial and technological field, retail investors and even venture capital investors can´t properly rely on their previous investment knowledge because there still is a lack of capacity in order to evaluate the maturity of the solution provided by the blockchain technology. Thereby, we can argue that retail investors with no technical skills are exposed to possible higher risks even compared to regulated startup investing.

[164] Ibid [142]

In addition to the lack of technical skills, the blockchain technology also presents some limitations. First, given its recent emergence, the blockchain as well as other distributed ledger technologies remains mostly untested, resulting in a limited development in identifying and react to issues involving such technology. [165] Thus, the complexity of the blockchain combined with its distributed and encrypted nature as well as the very gradual increase of users, makes this technology potentially slow, where tokens may take hours to process a transaction[166]

4.2.2. Frauds

So far, we had already analyzed that there is a high threat in terms of risks deriving from the way retail investors behave in certain situations before their investment decision as well as the way some type of financial mechanisms are structured that leads retail investors exposed to potential losses. Therefore, it will be further examined that despite risks related to investing may occur at any time, the remaining regulatory uncertainty in the cryptocurrency market also allows other type "players" intentionally acting in a malicious manner in order to take benefits from such transactions.

In a market where ICO tokens are mostly intended to be used as a mean to have access to the startup´s platform as well as to utilize its services avoiding in this way the issue of tokens designed for investment purposes, token issuers who may fall outside of the scope of the securities regulation may be able to prevent legal and financial requirements demanded by legislation and supervisory authorities. However, for retail investors who aim to buy tokens with the sole expectation of future profits, such absence of financial regulations leads them to a field where the level of frauds is significant high and consequently, investors may not benefit from the legal protection that such regulations provide in order to help recover the lost funds.

[165] Martin, R., (Ignite, 2018) "*5 Blockchain Security Risks and How to Reduce Them*" At: https://igniteoutsourcing.com/blockchain/blockchain-security-vulnerabilities-risks/
[166] Marr, B., (Forbes, 2018) " *The 5 Big Problems With Blockchain Everyone Should Be Aware Of*" At: https://www.forbes.com/sites/bernardmarr/2018/02/19/the-5-big-problems-with-blockchain-everyone-should-be-aware-of/#1f42f83b1670

This lack of regulation in the ICO market combined with the lack of transparency in the whitepaper as well as the absence of investment knowledge and experience in this market makes frauds in ICOs occurring frequently. One of the biggest strategies occurs when investors use to rely on startup project through the information contained in the whitepaper without being aware that the information contains misleading facts and it serves to impress retail investors about the future goals of the company. In addition, retail investors may also be deceived by hackers when the latter pretend to be someone of the team. The fraudster will manipulate investors by creating fake accounts and convince them to transfer their funds into such accounts. Only in the first quarter of 2019, investors and also crypto exchanges were affected with more than $350 million being already stolen by hackers.[167] Along with other type of funding mechanisms, we can see that investors are also affected by frauds in the cryptocurrency world. In order to explain how frauds may negative impact their investments, three different type of frauds in ICOs will be further analyzed.

First, the "Pump and Dump Scheme" has been identified by the SEC in relation to the sale of shares in the stock market[168] and also in relation to the increase of emerging technologies[169] which leaves investors fully exposed to scams and market manipulation due to the ease of investing online. In the digital currency market, these type of fraud can be analyzed as the criminal act of fraudsters stimulating the price of a token by giving false statements about the value of the project through campaigns via press release or social media. By alleging that they have access to inside information, promoters persuade investors in order to quickly buy the coins before the rise of its price. Fraudsters will sell their shares and dump the coins into the market when there is an increase of the value of the coin resulted from such hype. This phenomenon will give rise to the fall of the coin´s value and consequently to the big loss of investor´s funds. Such scheme usually targets early stage projects due to the ease of manipulation.[170] One of the most popular "pump and dump" scheme happened in June of 2017 when a famous currency known as ChainCoin was

[167] Trace, C., (2019) "*Q1 2019 Cryptocurrency Anti-Money Laundering Report*" At: https://ciphertrace.com/articles/q1-2019-cryptocurrency-anti-money-laundering-report/

[168] U.S. Securities and Exchange Commission (SEC) "*Pump and Dump Scheme*" At: https://www.investor.gov/protect-your-investments/fraud/types-fraud/pump-dump-schemes

[169] U.S. Securities and Exchange Commission (SEC) "*Investor Alert: Public Companies Making ICO-Related Claims*" At: https://www.investor.gov/additional-resources/news-alerts/alerts-bulletins/investor-alert-public-companies-making-ico-related

[170] Dhir, R., (Investopedia, 2019) "*Pump and Dump*" At: https://www.investopedia.com/terms/p/pumpanddump.asp

highly praised by a group of youtubers at a time where the value of its coin was close to zero. Two weeks after such influence trough social media, the coin´s value of ChainCoin increased significantly by $7.00 with a market cap value of almost $100 million. However, only a couple days after this explosive growth, ChainCoin value decreased around 90% where its current value remains at $0.05[171].

Second, the "Ponzi Scheme" is considered an investment scam that usually entails the payment to old investors of alleged returns from funds coming from new investors[172]. In this scheme, fraudsters usually promise new investors with high returns generated by investing in great opportunities which allegedly pose no risk to them. Fraudsters aims to collect new funds in order to pay earlier investors and, at the same time, take part of the funds for themselves. With the current growth of technology and with the remaining absence of regulations related to virtual currencies, authorities started to become concerned about the ease of misleading investors through this kind of schemes. In addition, the SEC published an investor alert in order to advise investors about the potential scams derived from the use of virtual currencies.[173] In SEC v. Shavers, a fraudster was charged after being involved in a Ponzi scheme. The founder of Bitcoin Savings and Trust (BTCST) offered an alleged investment opportunity through the internet by promising investors up to 7% weekly interest, wherefore the purpose of such funds was it to be used for some Bitcoin market arbitrage activities and consequently to generate returns. However, the intention of such funds coming from new investors was to transact alleged interest payments to existing investors[174].

Finally, the other alternative of fraud and perhaps the most usually to occur in an ICO is known as "Exit Scam". Through fake contents included in the whitepaper such, token issuers pretend to have a promising project in order to convince investors buying its tokens in exchange for fiat currency or other cryptocurrencies. After investors had contributed with their funds, the issuers

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[171] Huffman, Z., (Nulltx, 2018) "*Top 3 Biggest Losers – Coins that have Lost 99% in Value*" At: https://nulltx.com/3-biggest-losers-coins-that-have-lost-99-in-value/#3_Nitro_NOX
[172] U.S. Securities and Exchange Commission (SEC) "*Ponzi Scheme"* At: https://www.investor.gov/protect-your-investments/fraud/types-fraud/ponzi-scheme
[173] U.S. Securities and Exchange Commission (SEC, Office of Investor Education and Advocacy) "*Investor Alert Ponzi schemes Using virtual Currencies*". At: https://www.sec.gov/investor/alerts/ia_virtualcurrencies.pdf
[174] [174] U.S. Securities and Exchange Commission (SEC, 2013) "*SEC Charges Texas Man With Running Bitcoin-Denominated Ponzi Scheme"* At: https://www.sec.gov/news/press-release/2013-132#.Ue6yZODmp-I

close the activity of the project and disappear with the investor´s funds, being impossible to them recover the loss amount. Only in first quarter of 2019, $195 million were stolen through the strategy of "exit scam"[175]. As it was previously mentioned, one of the biggest cases involving "exit scam" took place in 2018 when a Vietnamese crypto startup called Modern Tech raised $660 million from almost 32,000 investors by promising them numerous returns resulted from the purchase of the company´s token known as Pincoin.[176]

Another example happened in the end of 2017 when the SEC reported that the founder of Plexcoin, Dominic Lacroix, was defrauding American and Canadian investors with the amount of $15 million by stating that the purchase of such token would give a massive return to the investors of of 1,354% in less than one month[177]. Even worse, Dominic Lacroix tried to create fake experts profiles in order to give an excellent rating to its coin. However, investment experts soon realized the impact of this scheme and alerted the SEC. Lacroix was sentenced to jail, as the amount raised from the scheme was frozen and the company was fined in $100,000[178].

According to all situations analyzed in the present chapter, whether resulting from the poor structures of crypto startups or from the remaining vacuum in terms of regulation, it is evident that retail investors find themselves exposed to an enormous amount of risks. One the one hand, due to its early development stage, cryptocurrency startups provide weak structures in terms of protection of investors. The non-required disclosure of legal and financial information leaves investors without the proper access to accurate the right information and consequently in a weaker position in comparison to the token issuers. In addition, the absence of financial and also technical skills related to blockchain structure may also give rise to possible risks because of the lack of experience in evaluating a decision through this technology. One the other hand, besides such issues arisen from the structure itself, retail investors are also threatened by the malicious behaviors from token issuers, their team and even from hackers who, supported by the unclear regulation which affects the investor´s protection as well as the ease of mislead investors on an

[175] Ibid [150]
[176] Ibid [4]
[177] Huillet, M., (Coin Telegraph, 2018) "*US SEC Seeks Sanctions Against Individuals Behind Alleged Crypto Scam PlexCoin"* At: https://cointelegraph.com/news/us-sec-seeks-sanctions-against-individuals-behind-alleged-crypto-scam-plexcoin
[178] Icodog (2019) "*Top 5 Crypto Exit Scams*" At: https://icodog.io/analysis/top-5-crypto-exit-scams/

open field such as the internet, are able defraud investors and “vanish” with the amount stolen. Investors, in addition, become unable to retrieve the lost funds.

CHAPTER V

5. Future Recommendations

Based on the analysis conducted throughout this thesis, it may be questioned whether the current legal framework can cope with this technological growth that we are seeing today. Given the fast growth of blockchain startups raising funds through Initial Coin Offerings, regulators around the world should continue in becoming familiar with the technology surrounding this new crowdfunding method. In other words, regulation should keep upholding innovation while simultaneously protecting the most vulnerable investors from potential harm. Despite that in some cases, as previously considered, risks associated with the investment decision are caused by the irrationality of retail investors instead of systematic breaches, it can be argued that this irrational decisions can also result from the legal uncertainty around the crypto market, where these type of investors feel at first more attracted to invest their funds. For a better investor´s protection, whether in terms of supporting a greater efficiency in such financial structure or even helping reduce such irrationality, some measures should be carefully taken at the global level by a vast of different jurisdictions.

In the context of the structure related to a crypto startup, where there is a great fragility due to its early stage financing system, certain failures involving lack of transparency on the whitepapers as well as potential frauds among hackers and members of such startups are continuously observed. In order to reduce such weakness, certain reinforcements should be taken into account.

- First, some minimal requirements concerning legal and financial disclosure in the whitepapers should be applied from all the authorities around the world in order to maintain a certain level of transparency from the retail investor.
- Similar to equity crowdfunding platforms where a minimal disclosure is required, if we subsume the ICO market under crowdfunding regulation since there is no platforms in ICOs, it could be possible to require the same amount of disclosure for both types of financing.
- For the purpose of complying with specific regulations, authorities must specify what they will disclosure and which rights and obligations should the investor carry.

Through these recommendations, by having access to more and accurate information contained in the whitepaper, such entrance would encourage more investors to entering in the digital currency market as well as would make it possible for them to distinguish between a good or bad investment, i.e., being aware about the possible gains and losses. At the same time, the implementation of disclosure in such documents would help reduce the information asymmetry between token issuers and retail investors.

In terms of regulatory responses regarding risks assessed to retail investors, after an analysis of all regulatory responses provided in the past few years concerning the lack of protection of an investor in an unregulated area such as this digital currency market, whether in the USA, Europe or other jurisdictions where the rapid develop of cryptocurrencies is growing, we consider this warnings to have a very limited impact on the investment decision of a retail investor. If we look to what happen in the past few years, especially in 2013, where a warning related to consumers on virtual currencies was released by the European Banking Authority[179], we can clearly see that such warnings didn´t had impact on investors when the price of the Bitcoin increased between 2017 and 2018. In this context, a range of solutions should be discussed:

First, a stronger cooperation between all jurisdictions within the crypto market, in especial USA and European Union, should be a key to a positive change. For this to happen, authorities must consider:

- determine exactly which rights and obligations should be given to tokens with a consumer purpose as well as the rights and obligations to tokens used for expectation of profits;
- For tokens used as an investment vehicle, a stronger enforcement of securities rules should be applied in every jurisdictions, since it can be assumed that most of tokens created are considered being used for investment purposes and consequently, the ones which cause more interest to retail investors as well as more concerns to regulators in terms of uncertainty framework; and
- A stronger and effective exchange information in a global level in order to enhance the development of this market and reinforce its regulation.

[179] European Banking Authority (EBA, 2013) *"Warning to consumers on virtual currencies"* At: https://eba.europa.eu/documents/10180/598344/EBA+Warning+on+Virtual+Currencies.pdf

Such collaboration instead of an analysis case by case from different authorities would help to mitigate the risks involved. In this case, a cooperation among authorities in order to embrace a stronger regulation regarding the nature of tokens and also the crypto exchanges would definitely protect retail investors on their investment decisions against potential risks.

A different solution that has been discussed in the end of 2018, mainly after a significant decrease of the value of the tokens in the markets as well as the remaining occurrence of frauds and scams in the crypto market is known as the issue of Security Token Offerings (STOs). In Securities token Offerings security token offerings (STOs), "*companies sell tokenized traditional financial instruments, like equity, debt, revenue sharing rights or any other mechanism in the form of a cryptographic token*"[180]. Through such solution, there are some benefits in order to protect investors:

- They are now able to more and accurate information, since there are some mandatory requirements of disclosure and compliance;
- They are also able to trade tokens through crypto exchanges; and
- They see themselves in a more "comfortable zone" to invest their funds without the danger of being defrauded.

Despite token issuers see STOs as a burden in terms of costs, mainly because they are on an early stage level without any guarantees of profits, such tokens however would help in increasing the transparency in the digital currency market and consequently, would benefit the industry with more and more investors joining the cryptocurrency market.

Second, as far as we know, cryptocurrency exchanges play a crucial role in such industry since retail investors who are looking for a possible investment in digital currencies usually will start investing through secondary markets e.g. in cryptocurrency exchanges. However, most of the crypto exchanges are not regulated which leaves retail investors to the main problem: losing their funds with the possibility of never retrieve it again. In fact, a study from a regtech firm known as Coinfirm found that only 14 % of the 216 crypto exchanges existed in the world are considered

[180] Ante, L. and Ingo Fiedler, I. "*Cheap Signals in Security Token Offerings*". (March 16, 2019)BRL Working Paper Series No. 1 (2019). At: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3356303

being regulated[181]. For more transparent and efficient exchange markets, regulators should focus in what may affect retail investors on such exchanges. A proper recommendation should be:

- Similar to other type of markets[182] , specifically regulate trading facilities between purchaser and sellers transactions
- Encourage a “gatekeeping” role in order to prevent illegal trading and criminal activities derived from such exchanges;
- Impose of an “investor test” to make investors become more cautious about the risks of being a retail investors, similar to what happens in equity crowd funding platforms like Seeders or Crowdcube,
- Implement of warnings in each crypto exchange in order to inform retail investors about which investment is considered highly risky.
- Possibility of restricted the participations to risk tolerance investors

Finally, in the context of the technology itself, we already mentioned that, due to the explosion of the technology in the last decades and the tools supporting the innovation of these new methods of raising money, not only token issuers but also investors should develop more their technical skills and more importantly understanding of specific features of blockchain business models for a proper investment. Learning more about the blockchain structure will always be a plus for investors and will put them in a better position in terms of possible returns of funds comparing to other investors who only know the basis of the technology.

[181] Partz, H., (CoinTelegraph, 2019)” *Study: 14% of Major Crypto Exchanges Are Licensed by Regulators”* At: https://cointelegraph.com/news/study-14-of-major-crypto-exchanges-are-licensed-by-regulators

[182] For example, the Multilateral trading facility (MTF) adopted by the MiFID II under Section A (Investment services and activities) Annex I point 8. At: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0065&from=EN

CHAPTER VI

5. Conclusion

Considering what was previously analysed in this thesis, it is possible to assume that the cryptocurrency market is fundamentally driven from the investor´s desire in purchasing tokens with the expectation of profits. The growing interest in crypto coins may be derived from the recent expansion in this market, mainly between 2017 and 2018. Such expansion left retail investors around the world feeling that investing in such market would bring them a high percentage of profits, with the ease of using only a simple internet connection. Given this significant crypto market increase, more and more retail investors started to purchase these tokens with the goal of selling them in the secondary markets. Similar to stock markets, we studied that different type biases of retail investors can also apply to the digital currency market. Mainly, retail investors were affected by heuristics such as, among others, the "Fear Of Missing Out" the change of also earning large profits through quick decisions; Overconfidence in a way that such increase in the market would never stop; or even the "Disposition Effect" based on selling their winnings too early and poor returns too late. As previously analysed, all of this biases may affect both professional and non-professional investors, however, given the retail investor´s limited degree of knowledge and experience on the markets, there is a higher chance of them taking irrational decisions and consequently being exposed to a considerable chance of losing their returns.

Moreover, this thesis also considered that addition risks arises in the context of the information provided to retail investors when considering investing in an ICO. Whitepapers are in most cases an insufficient tool in order to help them on the investment decisions given the poor quality of information contained and the possible lack of transparency. The combination between the lack of mandatory disclosure from the token issuers and the lack of experience and knowledge from the retail investor leaves them exposed to significant risks. Retail investors found themselves in a critical situation where they have the decision of whether being understanding and withdraw from investing or instead, carrying the potential risks of fraud and undertake the responsibility of investing. In addition, the absence of technical skills in how to understand the important role of the blockchain and the code provided from the token issuer might also leave retail investors unware of evaluate the proper decision from this technology.

The actual responses from different jurisdictions, mainly warnings and advices, addressed to this unsophisticated investors seems less likely to have a significant impact on their investment decision due to the way they tend to behave before the market fluctuation, meaning that despite such warnings concerning the potential risks of investing in unregulated area as the crypto market, retail investors tend to ignore it if the price of the tokens starts to increase. For such reasons, some measures need to be taken from regulators all over the world. For instance, a key to a positive development should be a cooperation among different jurisdictions to promote an efficient and transparent market that is capable to protect retail investors and promote their interest in investing in the digital currency market. In particular, efforts to regulate cryptocurrency exchanges should be one of the major concerns since there is a high level of trading activity on the secondary market by retail investors and also where there is more concerns about criminal activities and illegal trading. Simultaneously, the implementation of "investor tests" and specific warning on these crypto exchanges would leave retail investors aware of which investments are qualified as risky.

For enabling this technology and innovation in the blockchain field, regulators must carefully look to the current flaws in the market and be able to improve it, but always giving a major importance to those who are more harmed, in this case, the retail investors. Such cautiousness in terms of regulation might be a step forward to the regrowth of the cryptocurrency market and consequently, a potential benefit for the growth of the global economy.

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