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Are cryptocurrencies the new "financial weapons of mass destruction"?

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Abstract

Before 2008, one thing that could be said about the derivatives market was that they were anything but regulated. Nowadays, the same thing can be said about the current financial innovation: cryptocurrencies. However, there are many private law institutions which have not been regulated for centuries, yet they did not trigger a worldwide financial crisis. The reason for that is that the financial crisis constituted a complex phenomenon caused by many factors, occurring jointly and affecting the derivatives market in unison, not just by lack of regulation.

This paper will elaborate whether factors which, in the opinion of the author, caused the recent financial crisis, currently exist, or can occur in the future, in the cryptocurrency market. Such a study will allow a conclusion to be drawn as to whether cryptocurrencies are capable of triggering a similar financial crisis as derivatives did before their current partial regulation.

Keywords: cryptocurrencies, derivatives, financial crisis, market transparency

JEL: E22, G01, G22, G24, K22, K29, O16, O31

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1 Introduction

The financial crisis caused by the derivatives market turned out to be a complex phenomenon driven by a number of factors (FCIC 2011). Their list may be controversial[1] but for the sake of this paper it will be assumed that these factors included: globalization and the size of the derivatives market, a lack of market transparency, the complexity of the derivatives as financial instruments (and the related difficulties in assessing potential risks), a conflict of interest on part of the rating agencies when it came to rating derivatives, the nature of investors in derivatives, as well as the existence of an unsupervised, speculative over-the-counter (OTC) derivatives market. Nowadays, some observers believe that it was possible to easily anticipate the crisis (Stout 2011, p. 1). However, the complexity and the interrelation of the above mentioned factors cannot be underestimated. It is also much easier to look for the causes of a crisis after it occurred than before, when the market is constantly growing and the entire community is living in hossa's euphoria and when indications of impending crisis encounter hostility or they are swept under the rug.

Cryptocurrencies are a different financial innovation than derivatives, but the distinction becomes more blurred when we notice that cryptocurrencies are beginning to constitute an underlying asset for derivatives.[2] Thus, the question may be asked whether it is justified to analyze cryptocurrencies in the light of crisis-inducing features ascribed to derivatives. Yet, it seems that nothing stands in the way of doing so. The reasons for this assertion are twofold. Firstly, the complexity of the above-mentioned factors allow the researcher to at least suspect that the next financial crisis (if any) will also be caused not by one single feature of cryptocurrencies but by their complex mosaic. As we will see, it is hard even to define cryptocurrencies, and all the harder to establish a closed and unquestionable list of circumstances in the light of which their crisis-inducing possibility can be studied. Therefore, the list of factors presented in this paper constitutes a form of introductory compilation open to a further study of cryptocurrency-associated risks and can be enhanced further. Secondly, there is room for a precautionary paper which will try to bring some awareness to the market. The drawback to adopting such an approach is the fact that this paper in being so construed, instead of answering the question whether cryptocurrencies can cause a next global crisis in general terms, will take a more limited approach and answer this question in a limited manner, i.e. in the light of the features indicated above.[3] The question whether and how cryptocurrencies should be regulated will be answered from an equally restricted perspective. Before doing all of that, it is necessary, however, to highlight the difficulties associated with defining cryptocurrencies.

[1] Stout, for example argues that the crisis was mainly caused by changes in the law, however, even he notices that the origins of '29 and the Great Depression are still debated, which shows how difficult it is to find the causes of a crisis (Stout 2011, p. 1).

[2] See chapter 2 and subchapter 3.6 of this paper.

[3] Therefore, because of the limited number of factors studied, it may be that the title whether cryptocurrencies are "financial weapons of mass destruction" is somewhat too broad. However, it has to be noted that the quote was taken from Warren Buffet, who said these words in reference to the derivatives market, therefore, looking at the issue from such a limited derivatives perspective seems to be justified (Buffet 2002).

2 A problem with defining "cryptocurrencies"

The following definition of cryptocurrencies can be found in the literature:[4] "A »digital currency« is a store of value that is both (A) issued by a private entity and (B) fungible via an established system of exchange on the Internet." (Tucker 2009, p. 593).

This definition is very broad and does not seem to give a lot of guidance to the reader in terms of what cryptocurrencies actually are. In essence, it says only that cryptocurrency is "something"[5] traded on the Internet which is issued by private, not public entities. The question remains if it is possible to provide the reader with a much more precise definition of this financial instrument. The honest answer seems to be "no"[6] and the reason for such a response is the magnitude of cryptocurrencies[7] which differ from one another to a varying degree.[8] They differ not only with respect the way how they are structured[9] but also with respect to the function which they fulfill. Depending on the cryptocurrency, it can be used, for example, to purchase goods and services[10] (mechanism of trade) and/or as an investment property (Alcantara, Dick 2017, p. 25). The more purchase-based function a cryptocurrency will fulfill, the more normal-currency-like it will be. Accordingly, the more investment-like functions it fulfills, the more commodity-like it will be. For the latter there may be an even harder question to answer how to clearly distinguish between commodity-like cryptocurrencies and those that fulfill a securities-like function. Such a qualifying issue is important since on the basis of such a classification the cryptocurrency may fall under one or more current regulatory schemes which were not designed with cryptocurrencies in mind.[11] Which of these functions a given currency will fulfill, or to say it differently, which product or service it will try to replace, will depend not only on the issuer but may depend also on how market players will be using it. This may cause a given currency to fulfill many functions.[12] Therefore, individual approaches should be taken with respect to each examined cryptocurrency and their real operation should be investigated.[13] Only after such an elaborated investigation, the given cryptocurrency can be categorized, e.g. as commodity-like. What was written in the "white papers" of the issuer,[14] will be irrelevant.

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[4] The definition uses the term "digital currency" not "cryptocurrency", however, the difference is not easy to grasp and these terms are often used interchangeably. For the purpose of this paper the notion of "cryptocurrency" is adopted. In reference to this terminological problem, see: Tucker (2009, p. 593) or Alcantara, Dick (2017, p. 20), who use terms "digital currency" and "cryptocurrency" interchangeably.

[5] The above definition uses the term "a store of value" but adopting a broad concept of value has the drawback that everything can be "a store of value", therefore the phrase "a store of value" is not more precise than the word "something".

[6] Of course other definitions of cryptocurrencies can be found, see for example: Alcantara, Dick (2017, p. 20).

[7] Currently the most popular are bitcoins, however, there are also others which are quite popular (Alcantara, Dick 2017, p. 25–26).

[8] The Clearing House and Independent Community Bankers of America report notes that "establishing firm definitions is a challenge" and this conclusion resulted precisely from the variations of cryptocurrencies (The Clearing House & Independent Comty. of Bankers of America 2014).

[9] Centralized v. decentralized, convertible v. non-convertible, etc. (Hughes, Middlebrook 2015, p. 505–507).

[10] Goods and services should be understood very broadly since cryptocurrencies can be used, for example, to buy "things" within a computer game (Hughes, Middlebrook 2015, p. 506).

[11] In reference to different regulatory models under which cryptocurrencies may fall see: Hughes, Middlebrook (2015, p. 517–536).

[12] Bitcoin is a good example of a currency whose primary aim was apparently to constitute a means of exchange while currently, even if it still is sometimes accepted as means of exchange, because of the rise of cryptocurrency exchanges it seems to fulfill a more investment-like function (Cheah, Fry 2015, p. 33).

[13] Similarly, Ontario Securities Commission (further as: OSC) notices that whether a cryptocurrency should qualify as a security must be made on the basis of the substance not of the form (OSC 2017). Likewise, the Commission notices that "every ICO/ITO is unique and must be assessed on its own characteristics." The Commission remark refers to the Initial Coin Offering and the Initial Token Offering but it can be applied to cryptocurrencies as well.

[14] For the meaning of the word "whitepapers": OSC (2017).

The mechanism of trade vs. investment asset distinction is important since it seems that different risks are connected with the currency-like function and different with the investment-like function of cryptocurrencies. This means that, if regulated, different regulatory approaches should be taken to manage these different roles.[15] It should be considered whether instead of providing one definition of cryptocurrencies it might be more appropriate to provide several definitions of cryptocurrencies, each referring to different functions. Currently, there are technological limits which make it physically impossible for cryptocurrencies to globally replace fiat currencies as a mean of exchange (Noack 2018). Thus, typical currency risks[16] are not able to trigger a global financial crisis, at least for now.[17] More feasible threats may be related to the commodity/investment-like function of cryptocurrencies and a closer look will be given to them in this paper.

The above defining problems partially stem from lack of regulations which would at least allow drawing the lines of the cryptocurrency concept more precisely,[18] but not exclusively from that. It seems that there is a big misunderstanding of the notion in practice. Cryptocurrencies are often identified with the blockchain technology and people equate everything that is based on such technology with cryptocurrencies. Even if cryptocurrencies are its most visible use, the blockchain cannot be simply identified with them since it is, strictly speaking, the underlying technology,[19] not the cryptocurrency itself. The blockchain technology may have many other uses (Woodside, Augustine, Giberson 2017). Especially with respect to some initial coin offerings (ICOs), even if the offered coins are based on blockchain technology, the question may be asked how much they are securities-like vs. cryptocurrency--like. How much flagging them as cryptocurrencies stems from an attempt to avoid securities laws or to lure investors (Corbet et al. 2019), rather than their true nature. However, as long as there is no clear statutory definition of cryptocurrencies in certain jurisdictions, which would exclude some ICOs from the definition of cryptocurrency, it may be hard to argue than they do not constitute cryptocurrencies. Such a classification stems from the fact that all of coins offered in ICOs may fulfill the premises of the broad definition invoked at the beginning of this chapter. On the other hand, it may equally be argued that a narrower definition is more adequate. This paper does not strive to solve this very hard defining problem but, as it was mentioned before, it will mainly focus on the investment/commodity--like functions of cryptocurrencies.

15 It is not impossible for one cryptocurrency to fulfill various roles, therefore falling under more than one regulatory scheme requirement. Therefore, if cryptocurrencies are regulated, a core part of the regulation might be considered, which would apply to all types of cryptocurrencies.

16 Like, for example, the risk of deflation or inflation of cryptocurrencies.

17 It is not considered in this paper whether a replacement of a national/local currency by a cryptocurrency may trigger a national/local crisis.

18 The statutory definitions slowly start to emerge. See: §200.2(p) of the N.Y. COMP. CODES R. & REGS. tit. 23. However, there are similarly broad as the definition invoked at the beginning of this subchapter and try to cover cryptocurrencies which fulfill various functions.

19 The above is the rule. Interestingly, cryptocurrencies which are not based on blockchain technology also exist or at least start to emerge (Orcutt 2017).

3 Analysis of the factors related to the derivatives market which precipitated the crisis

3.1 Globalization and the size of the market

Even if the idea of a local cryptocurrency is becoming more popular (Alcantara, Dick 2017, p. 19–20), there is no doubt that a cryptocurrency market, like the market of derivatives, is a global one.[20] More interesting is the comparison of the size of the markets. When the credit crisis started, the OTC derivatives market[21] was valued at USD 673 trillion.[22] A fluctuating USD 460 billion value of the cryptocurrency market did not constitute even 1% of this huge volume.[23] Such a comparison seems to indicate that cryptocurrencies are not able to trigger a crisis on such a large scale as derivatives did. However, it has to be noticed how quickly the cryptocurrency market has grown. At the end of 2008 it was valued between USD 510–550 million (Tucker 2009, p. 599).[24] At the beginning of January, before the bubble burst, at least to some extent, it was valued at over USD 800 billion (Tucker 2009, p. 599). So it multiplied its value enormously in less than 10 years.[25] It is hard to predict whether the cryptocurrency market will grow further.[26] However, a cryptocurrency account can typically be created in a few minutes and a first "investment" can be made immediately after its creation (WeUseCoins 2018). Moreover, since there are more than four billion Internet users[27] nowadays, of which most[28] can currently be crypto-currency buyers,[29] it is at least potentially possible for the size of the market to grow tremendously in a couple of days, especially if we agree with the statement that "unawareness about the cryptocurrency among people is a restraint to market growth".[30]

Therefore, to summarize, even if the current size of the cryptocurrency market is not able to trigger a crisis on the 2008 scale, it seems that there are no significant legal barriers to block the cryptocurrency market from growing to the size which will have a potential to cause global crises in the future.[31] This is especially true if we notice that derivatives contracts have started to emerge with

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20 https://www.alliedmarketresearch.com/crypto-currency-market.

21 For what constitutes the OTC derivatives market, see: subchapter 3.6 of this paper.

22 See: http://stats.bis.org/statx/srs/table/d5.1. However, read also about the imperfection plaguing the calculations on a derivatives market resulting from the fact that the value of derivatives is evaluated on the basis of the notional values of the underlying assets (Stout 2011).

23 The value of the derivatives market in mid-January after the bubble deflated (Williams-Grut 2018). It has to be noticed that this value is estimated for all cryptocurrencies regardless of their function.

24 However, the author underlines that because of the lack of transparency of the market the amounts may not be accurate.

25 After deregulation, the derivatives market grew in 9 years (from 1999 to 2008) from USD 88 trillion to USD 670 trillion (Stout 2011).

26 Predictions can be found which forecast that after the unstable 2018 the cryptocurrency market will grow continuously (Williams-Grut 2018).

27 https://www.internetworldstats.com/stats.htm.

28 OSC notices that "anyone with internet access can create or invest in an ICO/ITO" (OSC 2017). By ICO and ITO the OSC understands, accordingly, the initial coin offering and the initial token offering.

29 The word "currently" is used on purpose since there have been repeated rumors that a cryptocurrency ban is being considered, e.g. in China and South Korea, therefore, the scope of potential investors may dwindle with time (Williams-Grut 2018).

30 https://www.alliedmarketresearch.com/crypto-currency-market. However, cryptocurrencies are mentioned ever more often in the media an increasing number of countries therefore, "unawareness" seems to be a weaker and weaker argument in the debate on the further growth of the cryptocurrency market.

31 It may be argued that the cryptocurrency market should not be treated cumulatively but for every cryptocurrency a separate market may be determined. However, the January 2018 crash occurred on many, if not all, cryptocurrency markets, therefore it seems justified to look at such a joint market (at least for now). See: Williams-Grut (2018) and Corbet et al. (2018).

cryptocurrencies as underlying assets. This means that if this industry develops further, the potential for triggering a global crisis by cryptocurrencies may be greatly enhanced.[32]

3.2 Lacking transparency of the cryptocurrency market

The lack of transparency of the OTC derivatives market is seen by many as one of the major causes of the 2008 crisis (Stout 2011). In the case of the cryptocurrency market, the lack of transparency seems to constitute its inherent feature (Tucker 2009). The U.S. Government Accountability Office (GAO) noticed that lack of transparency makes it difficult to detect money laundrymen (GAO 2014). This feature has also been noticed by the OSC, which indicates that even if some of the cryptocurrencies traded on Ontario's market may qualify as securities, therefore falling under the transparency requirements imposed by securities laws, to date the OSC has seen no business issue a prospectus, for example.[33] To provide some transparency, certain businesses which issue securities-like cryptocurrencies issued white papers describing their offer in cryptocurrencies (OSC 2017). However, since they are not constructed in accordance with any statutory requirements there is a threat that they are fulfilling more of a promotional function rather than provide real and full information about the issuer's business. Even assuming that such a white paper or other disclosing documents are becoming more and more popular, they only provide some information regarding the issuer or a given cryptocurrency and are usually restricted to securities-like cryptocurrencies. The problem is that cryptocurrencies are usually constructed in such a way as to allow investors in them to remain anonymous.[34] The over-the--counter cryptocurrency market[35] exists and is becoming ever more developed and institutionalized (Lukasiewicz 2014). Even if governmental agencies become better in tracking investors, as the GOA notices, to effectively fight and track cryptocurrencies/investors/scammers international cooperation will be required. Interestingly, there is a market for services which assist cryptocurrency investors in remaining even more anonymous,[36] so even with international cooperation the task may prove not easy.

The above short analysis warrants the general assessment that lack of transparency is a characteristic feature of the cryptocurrency market.

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[32] See subchapter 3.6 of this paper.

[33] Which is, simplifying, the requirement of the Ontario securities law with respect to instruments which are qualified as "securities" (OSC 2017).

[34] There are also opinions that cryptocurrency transactions are "pseudonymous" since every transaction on the blockchain can be tracked and if cryptocurrencies were bought by someone's credit card, sooner or later it is possible to identify such a buyer (Böhme et al. 2015, p. 228–229). However, cryptocurrencies are usually constructed in a way which allows to be anonymous but if the buyer is willing to put "a little more effort" into it, for example by not paying by credit card or his own credit card or by creating one-time addresses. It has to be also noticed that cryptocurrency exchanges require investors' identification more often, therefore they may constitute good allies in a fight against the investors' anonymity.

[35] By over-the-counter market we understand "A decentralized market, without a central physical location, where market participants trade with one another through various communication modes…" (Kramer 2018).

[36] For example there was a bitlaunder.com website whose aim was to "facilitate" laundering bitcoins and the means to attain such a goal was through trying to anonymize investors completely (Olson 2016).

3.3 The complexity of the instrument (difficulties in assessing potential risks)

Talking about derivatives George Soros said: "[T]here are so many [derivatives] and some of them so esoteric that the risk involved may not be properly understood even by the most sophisticated investor, and I'm supposed to be one" (Jalilvand, Malliaris 2013, p. 319).

This chapter will probe whether a similar remark can be made with respect to cryptocurrencies.

It was postulated above that anyone can become an investor in cryptocurrencies very quickly.[37] The ease of investment may give the reader a false impression that we are not dealing with a complicated financial instrument. However, such ease of investment only disguises the whole complexity behind it. At the beginning of this paper it was already shown how difficult it is to provide a proper definition of a cryptocurrency. The problem lies in their multiplicity and the different functions which cryptocurrencies can fulfill.[38] But even if the research was focused on one cryptocurrency only, its complexity would still be clear. A cryptocurrency is based on the digital currency system where the underlying technology is mostly the blockchain. Such systems usually involve an issuer, exchange agents (cryptostocks), cryptocurrency exchanges,[39] end-users (investors), electronic infrastructures[40] and appropriate software which has to be installed on the investors device (Tucker 2009, p. 593–595). Such a system is based on the issuing, accounting, storing, converting and transferring of cryptocurrencies (Tucker 2009, 595–596).

Even this concise presentation of the instrument reflects its complexity. However, the mosaic is even more intricate if we take a step back and try to see the cryptocurrencies in a broader market environment. Firstly, cryptocurrency investment funds exist, so a new player is added to the presented system (OSC 2017). Secondly, there are already derivatives contracts on the market involving cryptocurrencies and providing an additional level to be accounted for in risk assessment analysis (Williams-Grut 2018).[41]

The above shows that we are dealing with a very complex instrument based on new technology with respect to which risk-assessment analysis is a very complex task. Therefore, George Soros' remark can be accordingly applied to cryptocurrencies as well.

3.4 A conflict of interest on part of rating agencies

With respect to derivatives, a remedy to their complexity and the associated problems with assessing the accompanying risks consisted, supposedly, in ratings granted by the rating agencies (Utzig 2010, p. 1). Their aim was to properly assess the risk of investment in derivatives to help investors make deliberate decisions whether to invest in any given instrument. Rating agencies, on the one hand, advised clients how to structure the derivatives transactions while on the other, they gave ratings to such self-constructed transactions (Utzig 2010, p. 3). This led to a conflict of interests (Utzig 2010, p. 3), and

[37] See subchapter 3.1 of this paper.
[38] See chapter 2 of this paper. Multiplicity and different functions add to complexity since every investment in cryptocurrencies must be assessed separately with attention to the features of the cryptocurrency in question.
[39] Tucker notices that a typical cryptocurrency system is based on one issuer but multiple agents (Tucker 2009, p. 595–596).
[40] Including digital wallets.
[41] More on the cryptocurrencies-derivatives issues, see the subchapter 3.6 of this paper.

consequently to inflated ratings of certain products.[42] This chain of dependencies provided investors with inaccurate information regarding risks related to investment in certain derivatives.[43]

Rating agencies slowly start getting interested in cryptocurrencies (Mourdoukoutas 2018). In January, 2018 Weiss Ratings[44] provided a report evaluating numerous cryptocurrencies (Mourdoukoutas 2018). Experts are divided with respect to this first rating and some of them underline the dynamic of the market which invalidates such ratings after a few weeks (Mourdoukoutas 2018). Also none of the Big Four[45] has dared so far to compile a report on cryptocurrencies providing their rating. Even in the Weiss report none of the cryptocurrencies received an "A." and only two received a "B.",[46] an indication of a prudent approach to cryptocurrencies.[47]

It seems that so far rating agencies refrain from giving direct advice on how to structure a cryptocurrency system to obtain the best rating. However, the Weiss Rating provided a list of factors on which they based its rating. Such indication is a guideline for newcomers on how to structure their new cryptocurrency to get a high rating in the next Weiss Rating edition. The result is that they indirectly advise how to make a new cryptocurrency more investor-friendly.[48] Problematic, however, is the question whether appropriate factors have been taken into account in this report.

Regardless of the above doubts, the cautious approach and, leaving the Weiss Rating aside, the lack of other ratings ensures that rating agencies will not play a similar role to the one which they did during the 2008 crisis.

3.5 The characteristics of investors in cryptocurrencies

The problem with the 2008 crisis was that it led to a potential bankruptcy of the institutions whose collapse would bring on the systemic collapse of the entire financial sector. High ratings of many derivative structures on the one hand attracted huge investment in derivatives by institutional investors[49] like pension funds and on the other hand made insurance companies like AIG eager to cheaply provide the insurance against losses incurred on derivatives since the possibility of default, according to the rating, was very low. As a result, the derivatives market became dominated by large institutions. Institutions so big that their collapse constituted a threat to the whole world economy. Their collapse could, for example, block the possibility of obtaining credit and freeze the entire trade.[50] The collapse of AIG, a worldwide insurance company, would cause losses of many US and foreign institutions not even very closely connected with the financial sector (Crotty 2009, p. 569).

[42] The issue is important since certain institutions were not allowed to invest in assets which have a lower rating than AAA (Crotty 2009, p. 566).
[43] More about the exacerbating role of the rating agencies in crisis, see: Crotty (2009, p. 575).
[44] https://www.weissratings.com/
[45] The "Big Four" refers to the four biggest financial auditing firms.
[46] See: Chaurasiya (2018) and the link there to the full list of the cryptocurrencies rated by the Weiss Ratings.
[47] "Prudent" if you compare it to the situation of derivatives before the crisis which obtained triple A ratings regardless of the fact that they did not deserve such a high rating at all.
[48] A similar problem occurred before the 2008 crisis (Utzig 2010).
[49] As it was mentioned above, this issue is important since certain institutions were not allowed to invest in assets which have a lower rating than AAA. See: Crotty (2009, p. 566).
[50] The presented problem is more complex and it was more interestingly and more elaborately described in Sorkin (2010). For a shorter description of the problem why banks have to be bailed out, see Nicolaisen (2015).

Anonymity, which characterizes the cryptocurrency market, makes any statements regarding cryptocurrency investors only partly fact-based. However, a speculative character of the cryptocurrencies (Cheah, Fry 2015), almost no available ratings of these instruments, and the rather conservative character of the existing ratings justifies the assumption that institutional investors would be well advised to display caution when investing in them. The OSC also seems to indicate that retail investors have shown some interest in cryptocurrencies (OSC 2017).[51] However, it has to be noticed that the recent introduction of future contracts on bitcoins has opened a possibility to invest in cryptocurrencies for institutional investors.[52] There are also plans to open the "Virtuoso" exchange, which will provide derivative contracts regarding ethereum, with the aim to attract institutional investors (Leising 2017). If such contracts on cryptocurrencies become more popular with respect to other cryptocurrencies,[53] the make-up of investors may change.[54]

3.6 The danger of making bad unsupervised bets on cryptocurrencies

Derivates can in short be described as "bets" (Stout 2011). Some may argue that bets in general are bad and should be prohibited by law or at least be held unenforceable. However, it is not the approach currently taken by the law.[55] It is recognized in the economy that some bets can fulfill an important risk-hedging function (Stout 2011, p. 7), therefore, they cannot, at least in general, be prohibited. For example, insurance contracts are fully legal instruments which may be seen as bets.[56] It may seem that bets are something that increase the risk, but in the case of such an insurance function they are seen as reducing risk (Stout 2011, p. 7). Similarly, the derivatives should not be generally condemned beforehand since some of them may fulfill such a hedging function as well.[57] However, there are also "bad ones" which are used purely to speculate about the future[58] and it is with respect to them that the question may be asked about their legality.[59] Therefore, the moniker of "a double-edged sword" seems to be rather aptly applied in the case of cryptocurrencies (Stout 2011, p. 11).

The above remarks are important since they help to show that the 2008 crisis was caused not by the derivative market as a whole. It was caused by very bad speculative bets on the housing market. Simplifying a little, the assumed negative quality of the bets was based on two wrong assumptions. Firstly, that mortgage bonds, which were created from the pool of thousands and thousands of mortgages, mainly consisted of mortgages which would be repaid with a high degree of confidence.[60]

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51 However, OSC writes „[t]hese investors are often retail investors", which also rather indicates the assumption of the OSC than its certainty.

52 See: subchapter 3.6 of this paper.

53 There are already plans to provide derivative contracts on the ethereum currency (Leising 2017).

54 Already opinions can be found that the investment in cryptocurrencies will become more popular among institutional investors (Arnold 2018). However, the article was written before the January 2018 crash.

55 At least not in reference to all bets.

56 A bet between a client and an insurance company that, for example, the house of the client will be flooded (Stout 2011, p. 7).

57 Those are the good ones.

58 By "[s]peculate meaning, for the purposes of the present discussion, to try to earn a profit from predicting future events better than others can" (Stout 2011, p. 7).

59 See the arguments regarding the lack of "real value"/"net welfare" of speculative derivatives in: Stout (2011, p. 8–10).

60 This turned out to be a wrong assumption since they consisted to a large degree of very risky subprime mortgages. In reality the situation was more complex since if some mortgage bonds were too risky and "nobody" wanted to buy them, the risky mortgages were repacked by the banks into collateralized debt obligations (CDOs), which were getting mainly triple A ratings and were sold to investors. Here the intermediate role of CDOs was omitted since for the purpose of this paper it is possible to restrict the whole problem to mortgage bonds and the betting performed on them, especially since the problem of rating agencies is considered separately.

Secondly, that the prices of real estate will never go down. So even if a mortgage were not to be repaid, the mortgagee would be able to take a recourse to the real estate whose value was at least the same as the value of the underlying debt. Thus, there was an assumption that there was no possibility that the value of a mortgage bond would go down. Those two taken together triggered the eagerness on the part of financial institutions to provide derivative agreements where the counterparty was betting on the drop in prices of such mortgage bonds, and they saw the deal as a win-win situation.[61]

However, in the above description the faulty mortgage bonds and the bets on them should not be confused. The mortgage bonds in essence referred to the housing market only. It may be baffling how an instrument which refers only to one sector of the American market almost caused the collapse of the whole global economy. And the answer to this question lay in the bets on this market and the "insurance" of such bets by insurance companies, which multiplied tremendously the loss of financial institutions when the two above assumptions turned out to be wrong. Institutions which truly believed in the full correctness of the two above assumptions sold bets on mortgage bonds where the value of the bets exceeded the value of the bonds at least several times.[62] And the insurance company like AIG was eager to provide "insurance" (credit default swaps) on such bets. Since, logically, the housing market has to be related to the market of bets on this market, the losses which took place on the 1.3 trillion subprime mortgage market,[63] materialized on the related, multiplied, multi-trillion-dollar derivatives--speculative market (Stout 2011, p. 28). As it was described in the Big Short movie mortgage bonds were only the "matches" and the bets on them[64] were the atomic bomb.[65] Quite convincing arguments have been brought up which link the uncontained growth of the speculative derivative market to the exclusion of the over-the-counter derivatives market from the supervision of the Commodity Futures Trading Commission (the CFTC) in 2000 (Stout 2011).[66]

Even assuming that the current cryptocurrency market is currently as overvaluated as the mortgage bonds market was before the crisis, with its USD 460 billion value it is probably an even smaller "match" than the subprime mortgage market was at the time. It is not out of the question for the size of this market to grow to the size which on its own will constitute an "atomic bomb". However, the question asked in this subchapter is whether it is possible to obtain speculative bets on cryptocurrencies because it is this possibility that might cause the potential risk to grow dangerously even without a substantial growth of the cryptocurrency market.

In mid-December 2017 the Cboe[67] and the CME Group[68] started to provide bitcoin future contracts (Williams-Grut 2018).[69] There are already plans to offer futures, forwards and swaps on the ethereum cryptocurrency (Wilmoth 2017). In is hard to predict in which direction the derivatives market regarding cryptocurrencies will further evolve. Bitcoins and ethereum are the most popular cryptocurrencies and a possibility to get derivative contracts on other cryptocurrencies will depend on the extent of their

[61] The situation that they will have to pay will never occur and they will get a commission from the client for such derivatives "insurance"/bet.

[62] "A highly confident derivatives speculator, for example, might happily sell $ 1,000,000 in CDS contracts on a $ 100,000 bond" (Stout 2011).

[63] https://thelawdictionary.org/subprime-loan/.

[64] In the movie called "synthetic CDOs".

[65] The movie invokes a vivid image of "an atomic bomb with a drunk president with his finger over the button." The Big Short movie, 1:25:36.

[66] More about CFTC, see: http://www.cftc.gov/index.htm.

[67] http://www.cboe.com/.

[68] http://www.cmegroup.com/.

[69] Next to forwards, options and swaps, future contracts are one of the possible types of derivative contracts.

stabilization and recognition. The emergence of derivative contracts on cryptocurrencies, albeit a slow one, makes the multiplication of the risks generated by cryptocurrencies a possibility and the situation bears some resemblance to the one which occurred before the 2008 crisis. However, the question has to be asked whether we are dealing with hedging or speculative derivative contracts. In general, regardless of the underlying asset, drawing a line between hedging and speculative derivative contracts is not easy. The task is even harder if you try to draw such a line in the case of derivative contracts where the underlying asset is a cryptocurrency. There are voices that we are dealing with a highly speculative asset without any real value (Cheah, Fry 2015). Therefore, the question may be asked, how it is possible to dub a derivative contract hedging and not speculative if the underlying asset, at least currently, is speculative in nature. It seems that even if some contracts are offered as hedging ones, in essence they will be speculative. Yet, even such "hedging" contracts do not multiply the risks as much as did the derivative contracts concluded before the crisis. The vulnerability of cryptocurrencies is strongly underlined in many sources (for example: Cheah, Fry 2015) so there is no such an underlying, "irrefutable" assumption which existed before the 2008 crisis that the prices of houses would never go down. What is more, in reference to the US market, there is a positive signal coming from the fact that already on 10 December 2014 the FCTC announced that trade in commodity-like cryptocurrencies will be covered by its supervision (Hughes, Middlebrook 2015, p. 510).

To summarize this subchapter, the current situation with cryptocurrencies is not identical to the environment from before the crisis. However, certain similarities exist. We have a vulnerable underlying asset and the possibilities to have "bets" on it. The difference is that its vulnerability is usually highlighted and the "bets" are under CFTC supervision.

4 A need for the regulation of cryptocurrencies to avoid a global financial crisis?

The above indicates that the situation on the cryptocurrency market is not identical to that which existed prior to the 2008 crisis. This raises the question whether they should be regulated or left on their own.

Analyzing the current situation, cryptocurrencies have encountered mixed regulatory responses in various jurisdictions (Chohan 2017, p. 6–8).[70] They are usually either straightforwardly banned,[71] or their risks and undefined status are "left unsaid" or else attempts are made to blend them into the existing legal regimes (Chohan 2017). Currently, the most complex regulation of cryptocurrencies can be found in the New York jurisdiction and is called the BitLicense Regulatory Framework (BitLicense).[72] However, even this separate, quite extensive regulation does not regulate cryptocurrencies exhaustively. There are also other regulatory models which may apply to them, and which of these models will apply to a given cryptocurrency will mainly depend on the function which this currency fulfills (what product or service it tries to replace).[73] However, the New York's attempt to regulate cryptocurrencies separately

[70] The article reflects the regulatory situation as at September 2017.

[71] Rather rarely, so far in countries like Bolivia or Ecuador. See: Chohan (2017, p. 6–8). However, for example, such a huge cryptocurrency market as South Korea is considering a ban on them (Williams-Grut 2018).

[72] §200 of the N.Y. COMP. CODES R. & REGS. tit. 23. However, voices can still be found maintaining that the regulation of cryptocurrencies is incomplete (Hughes, Middlebrook 2015).

[73] For example, they may also fall under securities law regulatory models. Possible regulatory models under which they may fall can be found in: Hughes, Middlebrook (2015, p. 517–536).

still seems to be an exceptional effort worldwide. Countries currently try not to regulate them and where necessary, try to put them under the umbrella of their existing legal regimes. For example, in Canada, the OSC tries to fit these cryptocurrencies which may fulfill a securities-like function into the existing securities laws (OSC 2017).[74]

The problems with complex and exhaustive regulations of cryptocurrencies seem to revolve around jurisdictional issues and their complexity. To say it differently, countries are not eager to regulate something that can so easily cross national borders and something whose nature is so elusive. Maybe the simplest solution would be to provide a broad definition of cryptocurrencies (like, for example, in § 200.2(p) of the BitLicense) and just to ban them wholesale. However, the reason why such an approach has not got much traction worldwide seems to stem at least from two reasons. Firstly, generally, market innovations[75] are seen as a good thing which, for example, makes raising capital by companies much easier (see for example: OSC 2017). Secondly, even if certain jurisdictions have doubts whether we are dealing with a proper market innovation, they are loathe to regulate it, since such a regulation may only have a limited effect on an innovation that can escape to another jurisdiction. New York's solution seems to confirm such caveats. New York's regulation is perceived as an overregulation with a potential to kill financial innovation (Hughes, Middlebrook 2015, p. 536–546) and only three Bitlicenses (del Castillo 2017) have been granted so far. This is a very small number if you compare it to at least 7500 cryptocurrency exchanges worldwide.[76] Currently, countries, instead of striving for a complex and targeted regulation, regulate them in a limited manner (Hughes, Middlebrook 2015, p. 512–516), preferring to wait and observe how the cryptocurrency market will further develop. They take some *ad hoc* measures responding to the appearing crises,[77] and usually issue customer and investor warnings (Hughes, Middlebrook 2015, p. 511).

The aim of this paper is not to answer the question whether cryptocurrencies deserve a separate law in every country, which would extensively regulate them. This article tries to answer the question of whether any regulation should be introduced to prevent a crisis similar to the one in 2008. As it was mentioned before, such a limited approach makes the paper focus on a commodity/investment--like function of cryptocurrencies. Thus, it tries to answer the question, whether there is a call for some regulatory model with respect to these functions.

In the US it was recognized that cryptocurrencies can be treated as a commodity (Hughes, Middlebrook 2015, p. 510–511) and, generally, a qualification of cryptocurrencies as a commodity rather than currency is the more popular approach taken by countries (Hughes, Middlebrook 2015, p. 512–513).[78] Therefore, a question arises whether there should be some kind of regulation with respect to this particular function of cryptocurrencies, and if the answer to this question is positive, what is the desirable shape of such regulation.

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[74] However, as the OSC indicates, there is discrepancy between practice and the requirements of the securities laws.

[75] Even if there are valid reasons why "derivatives" should not be described as market innovations (Stout 2011) the blockchain technology and cryptocurrencies based on it can be described as such since bitcoin, the first cryptocurrency based on this technology, appeared in 2009 (Marr 2017).

[76] Of course, the issue of the location of cryptocurrencies and cryptocurrency exchanges constitutes a separate issue, however, the reluctance of locating cryptocurrency exchanges in the New York jurisdiction, may at least indicate a similar reluctance regarding the location of cryptocurrencies. The number of cryptocurrency exchanges has been taken from: https://pl.wikipedia.org/wiki/Kryptowaluta.

[77] See, for example, the case of closing two cryptocurrency exchanges by the Japan's Financial Service Agency government (Adelstein 2018) or the fact of policing certain investments (Hughes, Middlebrook 2015, p. 511).

[78] However, from the perspective of different regulatory frameworks cryptocurrencies may be qualified differently.

Cryptocurrency systems like bitcoins are presented as guaranteeing the security of transactions on the basis of cryptography and decentralization, allowing participants to carry out transactions in bitcoins without intermediaries. The lack of intermediaries and the lack of onerous regulations are supposed, in essence, to free the parties of transactions costs. So it might be claimed that cryptocurrency regulation is unnecessary since transactions costs are very low, transactions themselves are safe enough and thanks to this market innovation we are able to avoid intermediaries, i.e. "the whole fraudulent financial sector which caused the 2008 crisis". However, practice shows that even if the bitcoin system allows participants to deal in bitcoins without intermediaries, bitcoin exchanges sprung up as a common market phenomenon.[79] What is more, from a security perspective, bitcoins wallets have already been robbed and bitcoin exchanges have been hacked (Whigham 2017). There were also bitcoin exchange collapses (Murphy 2017). Therefore, the lack of intermediaries and cryptographic safety are not as risk-proof as they are often presented (see for example: Joshi 2017). Additionally, in the case of bitcoin, because of its scale, it has been noticed that there were periods when transactions costs grew tremendously and especially in the case of small transactions hugely exceeded traditional costs.[80] The potential lack of regulations for cryptocurrencies would not be devoid of costs either. It indirectly allows traders to remain anonymous. This in turn enhances the lack of market transparency, which taken together leads to the possible lack of accountability attracting abuses and facilitating market manipulation (compare: Hughes, Middlebrook 2015, p. 527). Cryptocurrencies could exist without regulation if we lived in a perfect world where everyone is good and honest. However, this is not the world in which we live and there will always be people trying to use regulatory loopholes to quickly enrich themselves at the expense of others. The 2008 crisis very aptly shows how the lack of regulation leads to shortfalls regarding transparency and supervision of an entire sector of the financial market, at least facilitating the crisis (Stout 2011). Therefore, the author of this article stands on the ground that trade in cryptocurrencies should be regulated. The regulation should go in such directions as to make trading in cryptocurrencies legal only through licensed and supervised exchanges. Appropriate capital, resource, insurance[81] and recordkeeping requirements should be imposed on such exchanges. Similarly, if any derivative/insurance-like contracts regarding cryptocurrencies are allowed, they should also be covered by appropriate supervision.[82] Such indications are, admittedly, rather vague but this is due to the fact that to regulate cryptocurrencies properly we should strive for an international standard. There should be some bottom line regarding cryptocurrency regulation which would constitute an international consensus.[83] Otherwise, the regulation of cryptocurrencies will have only limited efficiency, owing to blockchain technology, which allows direct exchange without intermediaries, and because of the possible escape of cryptocurrency exchanges to unregulated jurisdictions. A need of international action to attain efficiency was noticed by the GAO (2014) and the European Banking Authority (EBA 2014). Bitlicense can be used as a reference point here. However, it is important not to overregulate cryptocurrencies[84] and we have to bear in mind that the Bitlicense comes from

[79] https://bitcoin.org/en/exchanges.

[80] https://www.trustnodes.com/2017/12/20/bitcoin-fees-rise-30-per-transaction.

[81] However, since the cryptocurrencies' value currently fluctuates wildly, the assessment of insurance risk and finding an appropriate price of insurance may not be an easy task (compare: Hughes, Middlebrook 2015, p. 525).

[82] In the US, the Commodity Futures Trading Commission as early as 10 December 2014 announced that trade in commodity-like cryptocurrencies will be covered by its supervision (Hughes, Middlebrook 2015, p. 510).

[83] For the international scale of the problem, see Tucker (2009).

[84] And there are voices that Bitlicense constitutes overregulation.

a jurisdiction where there is a very strong banking industry lobby[85] with a potentially huge interest in overregulating cryptocurrencies.[86] Because of the underlying technology it will be impossible to completely eliminate the over-the-counter cryptocurrency market, nevertheless, a signal that such transactions will not be recognized or enforceable would constitute a good incentive for many to refrain from such investment.

5 Conclusions

Answering the question posed in the title of this paper it has to be said that cryptocurrencies are not currently the new financial weapons of mass destruction.[87] The reason for such a conclusion lies mainly in the current size of the market. A more prudent approach of rating agencies, no conflict of interests preventing them from exercising their mandate and the still fledgling and supervised derivatives market related to cryptocurrencies seem to put a halt, or at least slow down the growth of the cryptocurrency market and the risks stemming from such a development. Therefore, it is possible to make a statement similar to the one Tucker made in 2009 that "The »threat« posed by digital currencies is mostly hype" (Tucker 2009, p. 618). What is interesting, during a seminar at the Ottawa University, speakers implicitly seemed to uphold an even bolder statement.[88] They said that the "Internet bubble" was not so bad since it brought a lot of capital to the Internet market, thanks to which – and despite the burst of the bubble – we live today in the Internet-era. Such a take on the matter may indirectly suggest that the cryptocurrency market would better be left unregulated to allow bigger investments in this financial innovation and, implicitly, bring us into the era of cryptocurrencies (Hughes, Middlebrook 2015).

Such assumptions can be defended only until the cryptocurrency market reaches a tipping point i.e. a point when the size of the market starts to constitute a threat to the global economy.[89] Therefore, maybe the best solution would be to wait and observe the market to better understand it and consequently to regulate it more adequately and avoid overregulation crippling the innovation altogether.

The problem however, with such an approach is that we are dealing with global markets which, at least potentially, can grow tremendously in a couple of days and such a tipping point may be crossed quickly and unnoticeably. We can wake up one day and realize it is too late for action.[90] Even now cryptocurrencies constitute a huge, highly speculative, non-transparent and highly unsupervised market whose growth to the size of the over-the-counter derivatives market from before the crisis is not unconceivable.[91] The missing ingredient is the excessive faith in cryptocurrencies and the greed of people who would like to exploit the existing regulatory gaps. As Haus said "all technology throughout

[85] Stout notices that the financial industry spent USD 3.4 billion on lobbying between 1998 and 2008 (Stout 2011, p. 36).
[86] By overregulation we understand a situation which makes trade in cryptocurrencies more cumbersome than in other commodities when the broker-dealer like relation is used/required. We are dealing with new technology so we should look more on "material" equality rather than the complete sameness of requirements.
[87] At least not on a scale on which derivatives were before the 2008 crisis.
[88] Statements made by speakers: Julia Kennedy and David Fewer during the seminar which took place at the University of Ottawa on 5 March 2018 "Beyond bitcoin. What every lawyer should know about blockchain technology".
[89] Even without attaining other features which the derivatives market had before the crisis.
[90] In particular, the January 2018 "crisis" showed how the value of the cryptocurrency market can be almost halved within two days (Williams-Grut 2018).
[91] Not even mentioning the problem of estimation of the over-the-counter cryptocurrency market and there are already voices that it is huge.

history has had the potential for good and bad, and it is up to us to use it the right way" (High 2018). Current worldwide cryptocurrency regulations and the underlying technology seem to have too much potential for the bad.

As Crotty noticed: "After 1980, accelerated deregulation accompanied by rapid financial innovation stimulated powerful financial booms that always ended in crises" (Crotty 2009, p. 564). In the case of cryptocurrencies we are dealing with an analogous situation, i.e. a financial innovation basically unregulated from the legal perspective. This article proposes to undertake regulatory action with respect to cryptocurrencies or at least with respect to those performing the commodity/investment--like function. The above mentioned regulatory propositions may look vague and the adjustment to their introduction would deprive cryptocurrencies of such advantages as the lack of intermediaries and low transactional cost. However, the reason and the aim of such a regulatory proposition is rather straightforward: preventing the formation of a huge, highly speculative and unsupervised market. If there is no overregulation, cryptocurrencies will not disappear. They are based on a new promising "blockchain" technology,[92] and the possibility of worldwide use coupled with the emergence of cryptocurrency exchanges may attract new players to this sector of the market apart from the traditional financial institutions, which lost the trust of some people after the last crisis to the extent of being referred to as "fraudulent" at times. Therefore, they may constitute a tempting alternative leading to the creation of a new parallel market which, thanks to competition, may enhance the efficiency and reduce the cost of standard operations.

Nevertheless, all of the above is easier said than done. An effective regulation of the cryptocurrency market would require international cooperation establishing at least some regulatory bottom-line – not an easy task. What is more, drawing a line between different functions of cryptocurrencies is far from obvious and applying different regulatory regimes to one cryptocurrency may by itself constitute overregulation. Saying it differently, there is a long, difficult and delicate path to walk before cryptocurrencies are regulated properly.

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[92] Which may be seen by many people as much safer.

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