

Risks associated with crypto-currency trading and the degree of individuals' awareness of these risks

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Abstract: The current research was carried out as an approach to measure to what extent are Jordanian individuals aware of crypto-currency trading risks. In order to achieve this aim, some risks were adopted including (Volatility, Unregulated, Susceptible to error and hacking and Discontinuation) through an online questionnaire that was answered by (391) traders in Jordan in 2021. SPSS was used to analyze their answers and come up with a degree of awareness regarding trading in digital coins. Results of study indicated that Jordanian individuals were aware of crypto-currency trading risks; their answers revealed that they knew before that trading within digital currency markets is based on risks that mainly included unregulated trading environment which means to insurance or protection, in addition to the risks of susceptible to error and hacking and Discontinuation of trading a current currency and replace with another one. Study recommended that individuals should be made aware of the risks of crypto-currency trading, although it represents a good investment opportunity, but trading involves a lot of risks, and losses may exceed the value of the funds traded.

Keywords: Crypto-Currency, digital Coin, Bitcoin, Trading, Trading Platform, PayPal, Virtual Bank, Elon Musk, Leverage, Competitive Spreads

Received: May 19, 2021. Revised: February 22, 2022. Accepted: March 21, 2022. Published: April 8, 2022.

1. Introduction

The tremendous technological development that the world is witnessing has not only placed individuals' money in a plastic card or a smart phone, but has created for humanity currencies that you see and do not touch, it is a virtual currency that exists only behind the screen, and in fact it does not exist, it is not seen with the naked eye, but it has a material value It may lead its owners to a lot of profits (Dobrescu and Dobrescu, 2017). Kakushadze and Liew (2020) indicated that digital currencies are numbers and symbols found on the computer screen, and

each currency has a specific symbol or sign that belongs to it, the idea of which is that they are initially not harmful to the environment in any way.

The Corona pandemic that swept the world led to an increase in the demand for contactless currencies, and what increased the world's interest in this type of currency is the emergence of one of the most important investors in the world, Elon Musk, who invested nearly 1.5 billion dollars in February 2020, and this matter led to encourage many to engage in this type of trading in the hope of creating instant wealth without hassle or effort (Musk, 2020). But after a while, Elon Musk

suspended accepting crypto-currencies as a way to pay for Tesla cars due to many climate-related concerns on one hand, and on other hand, China's imposition of many restrictions on the use and circulation of those currencies.

Crypto-Currency trading was well-received and many people invested not hundreds but thousands of dollars in this trade. Some of them believed that digital coins has a future and one day this idea will role the world, others were attracted by the fortune that others made without burden and entered this world without a clue of its risks.

From that point, current research is an approach of measure individuals' awareness of crypto-currency trading in Jordan based on adopting major risks associated with this type of trading that included (Volatility, Unregulated, Susceptible to error and hacking and Discontinuation). Risks were extracted from previous studies Demertzis and Wolff (2018); Liu et al (2019; 2021) and Ryznar (2018).

2. Literature Review

Crypto-Currency / Digital Coins

Digital currencies are defined by Ma'amoun (2021) as a decentralized virtual digital currency. These currencies can be traded between individuals and companies. They are intangible and only appear in digital form, that is, they are a digital asset that exists on the computer as data and symbols, and the individual who owns Crypto-currencies to acquire a credit

card and there is no intermediary to impose additional fees.

As for Subramaniam (2021), the digital currency is defined as a virtual encrypted financial currency that enables its owner to purchase products and services through the Internet based on owning a digital ledger based on strong encryption in order to protect virtual financial transactions based on this trading.

With the development of the idea, traders began to confuse the trading of digital currencies and the concept of block chain, as many see that they refer to the same meaning, which is the digital currency. According to Coin et al (2020) stressed that there is a big difference between the two, as the digital currency, as mentioned earlier, is an encrypted virtual currency, while the block-chain is a word that refers to the technology that supports digital currency, it is a decentralized technology based on encrypted records spread within many computers it is super-fast and through it all digital financial transactions are managed.

Kakushadze and Liew (2020) pointed out that the block-chain process is the process of managing accounts through a huge network that gives customers a copy of the digital record and its transactions in order to add more confidence based on a very complex digital code.

History of Digital Coins

It is not as it is known that digital currencies appeared recently and that they are a product of yesterday, but

that digital currencies have a long history that appeared in the late nineties of the last century and was widely used as a type of virtual financial transactions over the Internet (Stifter et al, 2018). As a result of its popularity over time, it has become the number one destination for online traders like all other currencies.

Stifter et al (2018) indicates that the idea of digital currencies appeared in 1977 through the formation of an algorithm by Adi Shamir, Leonard Adleman and Ronald Rivest, and this algorithm was the first nucleus of digital currencies known today as a means of obtaining revenue and money, and the name RSA was launched on this algorithm, which represents the abbreviation of the initials of its creators.

According to Di Pietro (2021) Until 1993, a new digital currency appeared, the ecash, which was the result of the research and inventions of the mathematician David Chum, and in order to prove the validity of his invention, he created the DigiCash company in order for his currency to be managed through the company and in an official way, However, his attempts failed as a result of the people and companies not being convinced at that time to trade his currency because electronic commerce in that period of time was not what it is now.

In continuation to the development of digital currencies, the first digital bank was established in 1999, which has been a resounding success and continuity to this day, which is Pay Pal

and specializes in transferring money via the Internet (Bogucki, 2017).

Trading Digital Coins

According to Pérez- Solà and Herrera- Joancomartí (2020) the idea of digital currency trading refers to an activity practiced by individuals that involves the sale and purchase of encrypted digital currencies through a specific platform, that the individual sells, buys or exchanges a specific encrypted digital currency such as Bitcoin for another encrypted currency such as Litecoin. And the process can be done through the exchange, sale or purchase of a digital currency in exchange for a traditional paper currency, or vice versa, with the aim of profit (Sampson, 2018)

Delfabbro et al (2021) and Putsorn et al (2019) argued that usually, trading takes place within the environment of encrypted exchanges, through the trader opening an account by filling out a form through the Internet and starting the trading process of buying, selling and bartering. It is worth noting that trading platforms usually accept all amounts and accept many operations such as withdrawal and deposit in both digital and traditional currencies, and there are other platforms that require the trader to create a portfolio for trading operations such as withdrawal, deposit, sale, purchase and swap.

Risks Associated with Trading Digital Coins

Kyriazis (2019) believes that the trading of digital currencies involves a lot of risks that must be taken into

consideration before engaging in trading in an intangible digital currency, and Kyriazis (2019) adds that one of the most important risks known in trading digital currencies is the cyber-security risks, as the trader may be exposed to attacks from malware or targeting his account on the trading platform and stealing the data in it, in addition to the amount of digital currency being traded. And it is not only dependent on individual accounts, but even the block-chain system can be hacked by manipulating the value of currencies and causing great turmoil in the financial market.

As for Поляков (2018), it was found that the problem of unregulated trading process alone is a great danger, as individuals can invest and do a lot of digital currency trading through many platforms, but they are by their nature unregulated and not governed by a clear official body, and its function is only to Facilitate communication between traders without regulation, insurance, rights preservation or

compensation, which would increase the chances of potential problems between individuals and increase the gaps of fraud and fraud from certain parties.

Durham (2020) added that the problem of unregulated trading process is considered one of the biggest problems in the virtual currency markets, Latimer and Duffy (2019) stressed that the digital currency is now being viewed as an alternative currency to the legal currency approved in the state and involves many of us ambiguity and secrecy, in addition, Crypto-currency traders may be viewed as individuals financing terrorism, money laundering, or other illegal activities, so governments may prevent, restrict, ban or even regulate the trading and use of these currencies (Luu Duc Huynh, 2020).

Based on literature review and hypotheses development above, researcher managed to create a model that describes the relationship between variables:

Independent Variables

Dependent Variables

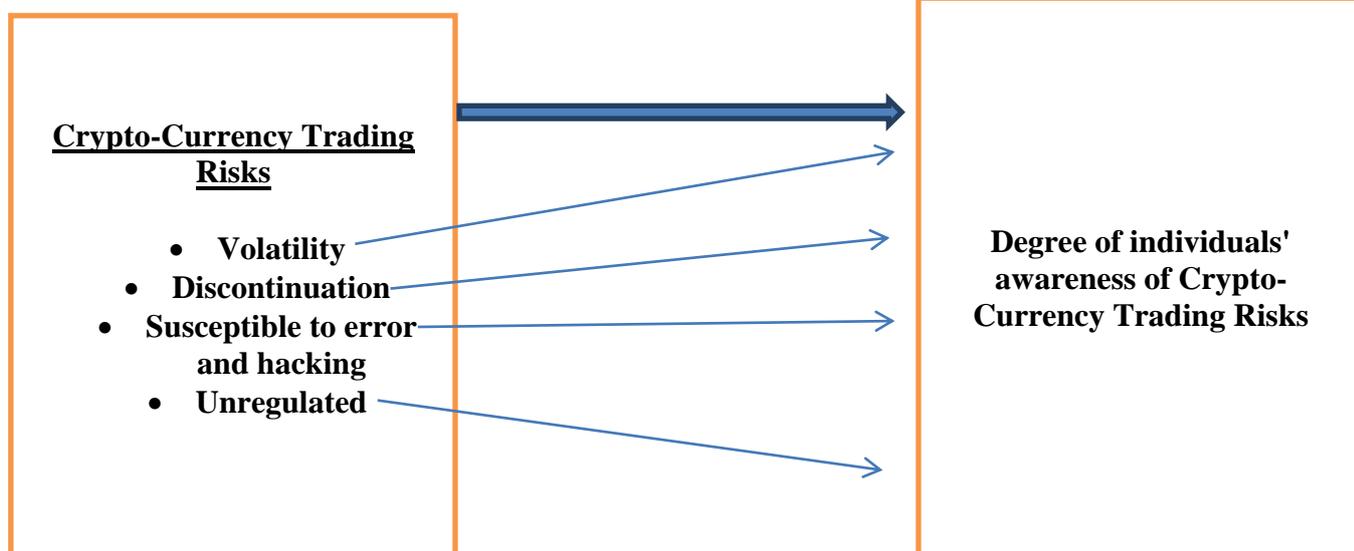


Figure 1. Study Model Demertzis and Wolff
(2018); Liu et al, (2019); Ryznar (2018)

Going through above model, and launching from previous studies; the following set of hypotheses was reached:

H: Risks associated with crypto-currency trading increase the degree of individuals' awareness of these risks

H1: Volatility as a type of risks associated with crypto-currency trading increase the degree of individuals' awareness of these risks

H2: Unregulated as a type of risks associated with crypto-currency trading increase the degree of individuals' awareness of these risks

H3: Susceptible to error and hacking as a type of risks associated with crypto-currency trading increase the degree of individuals' awareness of these risks

H4: Discontinuation as a type of risks associated with crypto-currency trading increase the degree of individuals' awareness of these risks

3. Methods

Understanding to what degree individuals (traders) are aware of digital coins trading risks, researcher adopted quantitative approach based on utilizing a questionnaire as a tool. The questionnaire consisted of statements related to the chosen risks associated with digital coins trading including

(Volatility, Unregulated, Susceptible to error and hacking and Discontinuation) which were extracted from previous studies Demertzis and Wolff (2018); Liu et al (2019) and Ryznar (2018).

Population of study consisted of Jordanian individuals trading in digital coins in Jordan, the population was reachable through uploaded online on Google Forms and left online for an amount of 12 weeks. Given the size of the population and researcher's inability to define it; it was decided to collect primary data from (500) individuals after the 12 weeks pass.

In that sense, after 12 weeks, researchers extracted an excel sheet that contained primary data from (500) individuals who responded to the questionnaire. When screening data; it was found that (391) questionnaires were properly filled which indicated a response rate of (78.2%) as statistically accepted.

Analyzing data was done through SPSS v. 23rd; descriptive statistics were calculated regarding demographics of sample (age, gender, experience and qualifications). As for chosen variables, the questionnaire presented 29 statements related to them to be answered on liker 5 scale (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; (5) strongly agree.

Other SPSS tests used for the sake of reaching aim of research included:

alpha = 0.964 was accepted because it was greater than 0.60

- Mean, frequency, standard deviation and percentages
- Cronbach alpha was used to determine if the scale is reliable or not and it was found that

Analysis and Results

Demographic Results

Table 1. Descriptive Statistics of Sample

Gender			
		Frequency	Percent
Valid	Male	287	73.4
	Female	104	26.6
Age			
Valid	25-30	30	7.7
	31-36	119	30.4
	37-42	118	30.2
	+43	124	31.7
Qualifications			
Valid	Diploma	65	16.6
	BA	169	43.2
	MA	113	28.9
	PhD	44	11.3
Experience			
Valid	Less than a year	25	6.4
	2-5	70	17.9
	6-9	135	34.5
	+10	161	41.2
	Total	391	100.0

Frequency and percentages were calculated for the study sample demographics. It can be seen through table 1 that most of individuals who responded to the questionnaire were males forming as much as 73.4% of the sample whose ages were more than 43 years forming 31.4% and who held BA degree forming 43.2% of the

sample. When asked about their experience in trading crypto-currency, results indicated that majority of sample had an experience of more than 10 years in dealing and trading with crypto-currency forming 41.2% of total sample.

4. Questionnaire Analysis

Table 2. Questionnaire Analysis

	Mean	Std. Deviation
Crypto-Currency Trading Risks		
1. I am aware that trading digital currencies is based on risks	3.82	1.084
2. I can associate trading crypto-coins can end up with losses more than profits	3.95	1.078
3. I know the risks but I am willing to try	3.72	1.104
4. It is more of a gambling that a person knows of	4.02	1.060
5. If it wasn't worth trading it wouldn't have spread all over the world	3.82	1.075
6. The thing about trading crypto-currency is that it is money without tax	4.23	.792
7. I think digital coins trading is like gambling and sports betting	4.02	.932
Volatility		
8. Prices move sharply and suddenly	4.18	.739
9. Huge changes can happen over night	4.16	.896
10. I am aware that my losses would be huge	4.01	.756
11. It is a type of gambling so I am not into it	4.32	.692
12. Unexpected changes may lead to either losses or profits and I am aware of that	4.32	.703
Unregulated		
13. I know that trading digital coins aren't regulated by the government	4.19	.659
14. I am aware that crypto-currency trading isn't approved by central banks	4.31	.758
15. With the more attention digital coins trading have gained, I think government will allow it soon	3.84	.974
16. Marketing for trading in crypto-currency attracts me a lot	4.24	.857
17. Trading in crypto-currency is a luxury not a necessity	3.96	.998
Susceptible to error and hacking		
18. I am totally aware that I may lose all my money due to human error	3.91	1.030
19. I can related piracy and hacking to losing in digital coins trading	3.91	.833
20. I know that there is no insurance on piracy and hacking	4.26	.696
21. All trading channels are secured from hacking	3.91	.739
22. Millions of people do it, it has to be safe and secure	4.11	.834
Discontinuation		
23. A digital coin may stop all of a sudden	4.21	.822

24. There is no limits for coins mining or creation as well as discontinuation	4.15	.838
25. I am aware that I might be investing my money in nothing	4.20	.798
26. I know that discontinuation of digital coins is something a trader has to accept	3.88	.807
27. Discontinuation might happen suddenly and without prior notice	4.06	.900
28. "Crypto-currency trading carries additional risks such as hard forks or discontinuation"	4.16	.894
29. "When a hard fork occurs, there may be substantial price volatility around the even"	4.17	.807

Table 2 above presented statistics done on sample responses to questionnaire. For that sake, both mean and standard deviation were calculated and results indicated that individuals had positive attitudes towards statements of questionnaire based on the fact that all of them scored higher than mean of scale 3.00 which was statistically positive .

The highest mean was for the benefit of statement articulated "Unexpected changes may lead to either losses or profits and I am aware of that " which

scored 4.32/5.00 compared to the least mean for the statement articulated "I know the risks but I am willing to try" with mean of 3.72/5.00.

Such results indicated that individuals managed to answer statements according to scale with full understanding, they were aware of the orientation of statements and the language represented was understandable, clear and easy to digest.

5. Variables' Statistics

Table 3. Variables' means

	Mean	Std. Deviation
Crypto-Currency	3.9397	.82038
Volatility	4.1959	.60067
Unregulated	4.1069	.66897
Susceptible	4.0194	.67134
Discontinuation	4.1184	.71236

The same process in table 2 was done on variables within table 3. Researcher calculated means and standard deviation of study variables in whole. It was seen through analysis that

results were for the benefit of volatility as it appeared with mean of 4.19/5.00 followed directly by discontinuation which scored 4.11/5.00 appearing as positive.

6. Hypotheses Testing of individuals' awareness of these

H: Risks associated with crypto-currency trading increase the degree of individuals' awareness of these risks

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.668 ^a	.446	.440	.61382		
ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	117.043	4	29.261	77.662	.000 ^b
	Residual	145.434	386	.377		
	Total	262.477	390			
Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
1	(Constant)	.543	.221		2.456	.014
	Volatility	-.033	.103	-.025	-.324	.746
	Unregulated	.259	.134	.212	1.929	.054
	Susceptible	.383	.144	.313	2.657	.008
	Discontinuation	.227	.087	.197	2.597	.010

Multiple regression was used to test the above hypothesis, F= 77.662 was significant and r= 0.668 reflected **high correlation**. So, Risks associated with crypto-currency trading increase the degree of individuals' awareness of these risks

H1: Volatility as a type of risks associated with crypto-currency trading increase the degree of individuals' awareness of these risks

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.559 ^a	.313	.311	.68106		
ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	82.044	1	82.044	176.882	.000 ^b
	Residual	180.433	389	.464		
	Total	262.477	390			
Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.

		B	Std. Error	Beta		
1	(Constant)	.736	.243		3.024	.003
	Volatility	.764	.057	.559	13.300	.000

Linear regression was used to test the above hypothesis, $F= 176.882$ was significant and $r = 0.559$ reflected **medium correlation**. So, Volatility as a type of risks associated with crypto-currency trading increase the degree of individuals' awareness of these risks

H2: Unregulated as a type of risks associated with crypto-currency trading increase the degree of individuals' awareness of these risks

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.631 ^a	.398	.397	.63714

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	104.564	1	104.564	257.581	.000 ^b
	Residual	157.913	389	.406		
	Total	262.477	390			

Coefficients

Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
		B		Beta		
1	(Constant)	.761	.201		3.792	.000
	Unregulated	.774	.048	.631	16.049	.000

Linear regression was used to test the above hypothesis, $F= 257.581$ was significant and $r = 0.631$ reflected high correlation. So, Unregulated as a type of risks associated with crypto-currency trading increase the degree of individuals' awareness of these risks

H3: Susceptible to error and hacking as a type of risks associated with crypto-currency trading increase the degree of individuals' awareness of these risks

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.657 ^a	.431	.430	.61957

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	113.154	1	113.154	294.777	.000 ^b
	Residual	149.323	389	.384		
	Total	262.477	390			

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
1 (Constant)	.715	.190		3.753	.000
Susceptible	.802	.047	.657	17.169	.000

Linear regression was used to test the above hypothesis, $F= 294.777$ was significant and $r= 0.657$ reflected high correlation. So, Susceptible to error and hacking as a type of risks associated with crypto-currency trading increase the degree of individuals' awareness of these risks

H4: Discontinuation as a type of risks associated with crypto-currency trading increase the degree of individuals' awareness of these risks

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.612 ^a	.374	.373	.64975

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	98.250	1	98.250	232.721	.000 ^b
	Residual	164.227	389	.422		
	Total	262.477	390			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
1	(Constant)	1.038	.193		5.377	.000
	Discontinuation	.705	.046	.612	15.255	.000

Linear regression was used to test the above hypothesis, $F= 232.721$ was significant and $r= 0.612$ reflected high correlation. So, Discontinuation as a type of risks associated with crypto-currency trading increase the degree of individuals' awareness of these risks

7. Discussion

Individuals are trying to find ways for easy money, so, they have started to increase their trading levels in crypto-currency especially after Elon Musk

dropped a huge amount of money in that space of trading. There are many risks that can influence individuals' trading in crypto-currency and cause a lot of losses and damage. Current research aimed at measuring the extent of Jordanian individuals' awareness of such risks and how they are dealing with the trading in crypto-currency along with their awareness of its risks. Quantitative approach was utilized through a questionnaire that was uploaded online through Google forms

for 8 weeks. Total of (391) individuals responded to the questionnaire and SPSS was used in order to screen and analyze the gathered primary data. Research was able to reach following findings:

- Individuals seemed to have the needed level of awareness regarding crypto-currency trading risks but they still went into the process even though it is built on high risks
- All adopted risks seemed to have been digested and understood by individuals responding to questionnaire including (Volatility, Unregulated, Susceptible to error and hacking and Discontinuation), such variables scored a correlation to individuals' awareness
- The highest correlation was for the benefit of (Unregulated, Susceptible to error and hacking and Discontinuation)
- Volatility was the only variable which had a medium correlation through analysis

The state of lack of regulation and control by governments over the circulation and trade of digital and encrypted currencies increases the risk of illegal acts such as money laundering and terrorist financing, as this type of currency is (encrypted) i.e. anonymous, and therefore criminals can Running them in order to carry out their criminal activities in an environment that has no legal or even financial control. This is what agrees

with Поляков (2018) and Durham (2020) when they pointed out that the idea of encryption in digital currencies contributed greatly to concealing the identity of many criminal operations, such as terrorist financing, money laundering, arms and drug trade.

Price instability and market fluctuations are also considered one of the most important risks of crypto-currency trading, as it is mentioned that in 2017, the price of Bitcoin reached 21 thousand US dollars, while today the same currency is traded at a value of 8 thousand US dollars, and this is a large fluctuation in the market within 4 years only. And this is what agrees with Demertzis and Wolff (2018) when they pointed out that price fluctuation is dangerous, but it is very natural in the crypto-currency market, as this type of currency is not supported by any real and real activities and does not have any physical origin and the price of the currency depends only on the confidence of the customer No more, and it does not have any traditional assets as well as the common currencies, in addition to that it is an illegal bug and has great legal endowments.

Hacking is also one of the most common risks of crypto-currency trading, as the user is not actually protected from hackers and speculators who could hack the wallet or website, which was also agreed on by Liu et al (2019) and Ryznar (2018).

The study proved through previous studies and analysis and its results that digital currencies and their circulation

is not subject to the control of any government or central bank of any country, with the exception of digital currencies linked to traditional currencies such as the US dollar, the European euro, and the Japanese yen. And since the circulation of these currencies means the occurrence of exchanges that may be outside the systems of traditional banks, it is certain that their risks are high in terms of the inability to control the market and its prices and the inability of the Central Bank to stimulate the economy in the event of a state of recession or inflation.

8. Conclusion and Recommendations

The crypto-currency market is one of the most volatile trading environments, as the market witnesses a great and periodic change, in addition to the presence of many cases of trading suspensions for certain currencies, the production of new currencies, the disappearance of other currencies and many more. Recently, many retail stores have appeared that accept digital currency sales and consider it an official and acceptable sale and payment process, so that in Japan, the government agreed to use digital currencies officially in many commercial transactions.

But, in general, the idea that many countries' governments – including Jordan – do not agree to adopt digital currencies for payment and purchase is seen as not an easy matter, especially with the fluctuations of the digital currency market, which is very large

compared to the traditional digital currency market. The alarm is about the existence of a large gap that will increase the chances of loss for individuals, especially those who trade in large numbers, especially since the adoption of digital currencies by governments and central banks would change the features of the financial world, leading to governments losing their control over banks.

Based on previously presented results, current research recommended that individuals should be made aware of the risks of crypto-currency trading, although it represents a good investment opportunity, but trading involves a lot of risks, and losses may exceed the value of the funds traded.

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права (pp. 912-913).