DIGITAL ERA DIGITAL RISKS: THE CASE STUDY OF TURKISH CRYPTO CURRENCIES MARKET

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Digitalization, which has accelerated in the 21. century, has brought financial markets to meet new risks. Unlike traditional risks, there are new risks such as cyber security, privacy risk, data protection, new financial institution risks, technological infrastructure risks. Developments in communication technologies and decrease in trust in financial institutions after the 2008 crisis have led to crypto assets combined with blockchain technology that is not connected to governments. Cryptocurrencies are protected by highly powerful encryption technologies. But, these currencies platforms are pose some risks. There are two types of risks in digital platforms. The first risk is that these markets are not yet subject to adequate legal regulations, and the second is cyber attacks. The purpose of this study is to make the extent of the risks that may occur in these digital markets more obvious by Case Study. To explain digital risks, the Thodex cryptocurrency exchange scandal that broke out in Turkey in 2021 has been analyzed. Thodex was Turkey's first global crypto exchange. When the Thodex closed in April 2021, it had 391,000 users. Investors firstly began to complain that their trading orders did not occur on time and that the provisions of the sales did not transfer in their accounts. Thodex first announced that it had closed operations for 3 to 5 days for maintenance purposes against cyber attacks. In the following days, investors were unable to access their accounts, and it became clear that the owner of the firm fled abroad, taking with him corresponds to about $ 2 billion owned by the investors. This scandal reveals the need for legal regulation on cryptocurrency exchanges.

Keywords: *Digital Risks, Crypto Currency, Blockchain, Thodex, Digital Finance, Digital Era*

I. Introduction

The rapid development in the information sector since the 1990s has made business relations in the world markets more accessible at any time and anywhere, thanks to mobile technologies. The developments in the field of information technologies have shown their effect more rapidly, especially in the financial sector. Access to financial information and services in the finance sector has accelerated with technological developments. Access to financial information and services in the finance sector has accelerated with technological developments.

Digital finance is defined differently in terms of both academics and practitioners. Digital finance; it is defined as financial services offered through mobile phones, personal computers, internet, mobile banking, e-wallets, mobile wallets, credit and debit cards (Durai and Stella, 2019). And it is defined as financial services accessed and sent through digital financial services, mobile devices and digital channels. Digital financial products enable access to financial services without engaging directly with financial service providers. Digital finance now includes financial technologies (fin-tech) that make it possible to reach various investment instruments such as gold, stocks, commodities, and derivatives digitally, apart from mobile banking products. Cryptocurrencies are also thought will be happen at the center of financial technologies in the future. However, it is debated whether cryptocurrencies are a commodity or a currency. Financial technology companies are considered to be digital marketplaces, although arguably. However, the rapidly developing and growing fintech market, unlike organized markets, is not subject to any specific regulation and supervision.

In traditional trade, the trade between the buyers and the sellers was based on the element of trust. The global crisis experienced in 2008 caused the confidence in existing financial institutions and authorities to be shaken, and unique changes occurred after the crisis. In the post-crisis finance field, new technologies such as mobile and internet of things, especially artificial intelligence, blockchain and cloud technologies, are seen. One of the most discussed topics has been cryptocurrencies. Although cryptocurrencies are discussed, there has been a rapid development and exchanges and futures markets where they are traded

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have emerged. However, the fact that cryptocurrencies, whose stock market is formed with financial technologies, do not have the trust and order provided by traditional financial institutions has brought some risks. Therefore, it is necessary to examine the risks faced by investors. In the study, the risks related to financial technologies will be examined and the risks faced by the investors of a crypto exchange in Turkey will be explained through a case study.

II. Digital Finance and Risks

It is seen that two main streams stand out in the development of financial technology. The first stream is the commodification of technology, machine learning and artificial intelligence. The second is the rapid increase in the number of e-commerce and technology companies entering existing financial markets. Rapid changes in financial markets; new areas in need of regulation have emerged such as cyber security, privacy risk, data protection and storage, new financial institution risk, technological infrastructure, and measures to be taken for competition.

These risks are fundamental considerations for financial regulation. Financial regulation requirement can be examined in 4 main categories: financial stability, financial integrity, customer security and financial market functions.

(i) Financial stability is considered as ensuring the proper functioning of the financial system and avoiding crises.

(ii) Regulation in the field of financial integrity focuses, for example, on the prevention of criminal activities and the use of financial markets in the context of money laundering, terrorist financing, international criminal organizations and even state-organized attacks.

(iii) Customer protection is the regulation of systems to prevent abuse of consumers.

(iv) Financial efficiency and development focuses on how to support and enhance the positive functioning and role of the financial system. However, the focus of concerns has been financial stability since the 2008 crisis.

Prior to 2008, the focus for promoting financial stability and preventing crises has been to identify major forms of risk and establish appropriate regulatory and supervisory frameworks to address them. Basel regulations are regulations for financial stability and reliability of financial institutions. Basel II regulations include regulations on counterparty risk, market risk, payment risk and operational risk. Risks related to technology and data subjects are included in operational risks. The developments in the digital field have made the regulations insufficient to evaluate the risks encountered.

The digital financial transformation has led to the development of new risk sources and new regulatory technology concepts. In traditional arrangements, technological risks are included in operational risks. Today, however, technological risks must be classified as a separate risk class. Technological risks can arise in the links between individuals and institutions and between institutions. Today, technological risks have the potential to directly affect financial stability and confidence.

Digital finance is a phenomenon of globalization in the finance sector facilitated by technological developments. This situation led to the emergence of an integrated financial system independent of national borders and economies, not the public welfare achieved by the increase of economic growth by financial development. This situation increases the possible sources of financial instability in macroeconomic terms (Mörttinen et al, 2005). As a result of digital financial transformation, cybersecurity has become the most important source of systemic risk for the financial system. Cybersecurity has become one of the leading interests of governments, financial and technology firms as well as financial regulators around the world. It can be said that cyber security is now the most important source of systemic risk and at the same time one of the most important problems of national security. The economic impact of cybercrime has increased fivefold in the last six years. Cybersecurity risk is therefore seen as an entirely new form of risk, as well as a new source of traditional risk. E.g; The hacking of a Russian bank, which resulted in transactions of $400 million, changed the USD/Ruble exchange rate by 15% (Boaer and Vazquez, 2017). While the weight of international risks is significant, addressing them at the cross-border level is particularly difficult because of not only financial stability issues but also national security issues.

While financial institutions have long focused on the risk of fraud and theft of all kinds, digitalization and globalization increase the potential for even simple fraud and theft to occur on a much larger scale. The move to FinTech increases certain cybersecurity threats specific to the financial system and subsequently to financial stability.

Cyber-attacks can be used from vulnerabilities, for example to disrupt payment systems, corrupt data in banks or Central Securities Depots, or disrupt the infrastructure on which banks are located. While these

are low-risk events, if left unchecked, their occurrence will have high-impact consequences that can snowball into financial instability.

New digital finance products come with risks. For example, 7,000 bitcoins worth $500 million were stolen from Japanese Coincheck, one of the world's largest cryptocurrency exchanges, using phishing and viruses to obtain user data. As a result, the value of bitcoin fell by about 3 percent. (www.blommbergtht.com).

In addition to cybersecurity, the increasingly central role of data in the financial industry highlights a second key area of concern: data protection. The United States, China, and the European Union are pioneers in data protection regulations. Data protection regulations made; data manipulation risk, systemic integration risk and intervention risk. In order to avoid misinterpreting data risks by setting rules, the need for regulations to increase the accountability of data manipulators is foreseen.

Widespread use of virtual currencies and the strengthening of links with other parts of the financial industry may increase financial risk over time. There are different events around the world regarding the risks that may be encountered in the global crypto currency exchanges. One of the examples that took place is the international Thodeks crypto exchange event in Turkey.

III. Case Study: Thodex Exchange

There were 40 cryptocurrency exchanges in total in Turkey and the total transaction volume of them was 28 billion Turkish liras in December 2020 (www.bloomberght.com.). Although the net foreign trading volume of Turkish investors is not known, they are traded in both domestic and foreign exchanges. Thodex company is a company that stands out with its trading volume among these 40 crypto money exchanges.

Founded under the name Koineks in 2017, the market was Turkey's fourth cryptocurrency exchange when it was founded. Turkey's first Bitcoin ATM was also established by this company. In 2020, the company became the first coin exchange from Turkey to open to the global market.

Founded under the name of Koineks, the company restructured with the globalization process and changed its name to Thodex in March 2020. Thodex, which started to serve in Turkey, offered its members the opportunity to trade with 5 different cryptocurrencies when it was founded in 2019, the company increased the number of cryptocurrencies it offers to 18. In 2020, Thodex obtained a license from FinCen MSB in the USA. With the license, Thodex has become Turkey's first global licensed coin exchange. It has started to serve in more than 120 countries after globalization. As of November 2020, Thodex reached a total transaction volume of 25 billion Turkish lira (approximately 3 billion USD) with an average of 177 transactions per month per user. According to Coinmarketcap, the platform where all cryptocurrencies and cryptocurrency exchanges in the world are evaluated, the company ranked 53rd globally and 2nd in Turkey with a daily trading volume of 698 million Turkish liras (Approximately 100 million USD) as of January 2020 (www.coinmarket.com).

The company has attracted attention by making different campaigns since the beginning of 2021. For example, it promised high-value gifts to its users who transacted over a certain amount. Thodex's most striking campaign was held on 15 March-15 April. The exchange announced that it will distribute 2 million units of Dogecoins with a value of 0.0068 USD. The company has announced that it will give 150 Dogecoins to each new user. Dogecoin's campaign is a remarkable choice. April 20 'Dogeday' has been declared for the crypto money popularized by Tesla's CEO Elon Musk. For this reason, there was an expectation that the value of crypto money would increase months ago. Due to the expectations, Dogecoin trading volume has also increased. Dogecoin accounted for 307 million dollars, or 52.6 percent, of the total volume of the exchange(www.coinmarket.com). After this campaign, as of April 19, the market transactions started to be disrupted. Customer complaints have intensified that the amounts of the sales transactions made by the investors are not transferred to their accounts, or that the coins that should be in their digital wallets are no longer available and that they cannot reach their wallets. The company has stated that it is under a cyber attack, that the attacks continue, that some customer accounts cannot be accessed for this reason, and that all kinds of losses that investors may suffer will be covered. After an increasing number of customer complaints, the market made a temporary maintenance announcement. As of April 20, the market was completely closed to trading. In the following period, an investigation was launched upon complaints, and all accounts and assets of the company were frozen by the financial crimes unit. On the same day, it was revealed that the owner of the company had fled abroad.

The event actually sets an example for all risks in digital financial markets. If the company was indeed subjected to a cyber attack, it could not ensure data security. At the same time, financial institution risk can be

mentioned. In this case, it can be thought that the Dogecoin campaign to get ahead of the crypto exchanges caused a competitive risk for the company. There is no regulation regarding the establishment and operation of crypto currency exchanges in Turkey yet. If this situation continues, it will be inevitable for investors to suffer.

Conclusion

Recently, some actors serving in financial markets have accepted cryptocurrencies and with the emergence of exchanges where these currencies are traded, the need to warn users about exchanges that do not have this legal status has emerged. Consumer protection, operational risk and legal risk issues are important in terms of financial stability against the risks arising from the nature of the system and that may be created by exchanges regarding cryptocurrencies. The current lack of adequate regulation in the markets exposes investors to the risk of being manipulated and losing their earnings. The arrangements to be made will create confidence in the financial markets. After the Thodex incident, studies on the regulation of cryptocurrency exchanges in Turkey started, and it is planned to enter into force by the end of 2021. With the regulation to be made, it is planned that crypto asset companies will operate under the supervision of the Capital Markets Board, minimum capital requirement will be introduced to companies, license and minimum capital requirement will be introduced.

Crypto exchanges have spread rapidly since the emergence of the virtual currency. On the one hand, it is seen that some central banks in the world are trying to issue their own virtual currencies, on the other hand, some countries such as China prefer to ban virtual currencies and exchanges. Making the necessary legal arrangements in this area instead of prohibiting it will be more beneficial for the protection of investors.

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