Chapter 2
The Relationship Between the Development of Central Bank Digital Currencies and Cryptocurrencies:
Risks and Opportunities

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ABSTRACT

Following the 2008 financial crisis, cryptocurrencies have brought significant innovations to the financial system and created an important test for central banks. Adopted by users in a short period of time and traded in high volumes, cryptocurrencies have a more liberal paradigm than the current financial system. Central banks have initiated studies on CBDCs in order to prevent the risks posed by cryptocurrencies and to take advantage of the opportunities created. Therefore, the development of CBDCs, which are characterized as the turning point of the financial system, is associated with the risks and opportunities created by cryptocurrencies. In this sense, this study aims to evaluate the risks and opportunities in the current situation by first addressing the relationship between the development process of CBDCs and cryptocurrencies. In addition, the study also aims to contribute to the development of CBDCs and literature by theoretically analyzing the possibilities that may occur in the future.

INTRODUCTION

After the 2008 financial crisis, cryptocurrencies emerged with the article published by the person with the username Satoshi Nakamoto (Nakamoto, 2008). Cryptocurrencies, which have a high trading volume today, have brought important innovations to the financial system and posed an important test

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for central banks. Cryptocurrencies, being adopted by users in a short time and traded in high volumes, have also managed to have a more liberal paradigm than the current financial system. Especially during the COVID-19 pandemic, which emerged in 2019 and spread all over the world in 2020, the use of digital currencies that facilitate the transactions of users, such as contactless payments with debit and credit cards and virtual payment applications, has gained popularity (Sethaput and Innet, 2023). As can be seen, the use of money evolves depending on the conditions of the time, the needs of users and technological innovations.

Recently, the risks and opportunities provided by digital currencies and cryptocurrencies have attracted the attention of central banks and encouraged them to pay more attention to these areas. This is because distributed ledger technology (DLT)-based digital currencies, often used on blockchain technology platforms, threaten the monetary policy implemented by central banks and the stability of financial market infrastructures. This threat does not stem from the digital currency itself, but rather from the issuance and widespread use of these digital currencies by the private sector (Claeys and Demertzis, 2019). Therefore, Central Banks and monetary authorities are conducting research and testing activities on Central Bank Digital Currencies (CBDCs) to mitigate these threats (Opare and Kim, 2020).

In line with the development of CBDCs, the problem of the study is the extent to which the risks and opportunities arising from cryptocurrencies can provide financial and social benefits/damages in the future. Since these two currencies, which significantly reduce transaction costs on a global scale, are considered the turning point of the financial system, they are closely related to all segments of society and reveal the importance of the study. In this sense, our study will focus on the relationship between CBDCs and cryptocurrencies rather than the technical infrastructure of CBDC research. In this context, it is aimed to prevent the risks in the market, to examine the opportunities and risks that emerging technologies will provide on the basis of CBDCs in a theoretical sense, and ultimately to contribute to the formation process of CBDCs and to the literature.

In the rest of the study, cryptocurrencies, CBDC, the relationship between CBDC and cryptocurrencies, risks and opportunities are discussed. The study is completed with a conclusion and evaluation section.

CRYPTOCURRENCIES

Cryptocurrencies, which do not have a generally accepted definition, can be expressed as follows. Cryptocurrencies are assets with monetary value that are used collectively with the science of encryption and monetary functions, are not dependent on any central authority, are based on a libertarian paradigm, can carry virtual, digital and alternative money features, are used in the digital environment with the infrastructure provided by blockchain technology, have low cost and fast transfer capability (Köse and Köstekçi, 2023a).

Advantages and Disadvantages of Cryptocurrencies

Since 2009, cryptocurrencies, which have been launched by private sector actors, can be characterized as the main factor in the development process of central bank digital coins. The impact of digitalization brought by Industry 4.0 on the financial sector and the abstraction of concrete transaction disruptions have been effective in the global spread of cryptocurrencies (Chauhan et al., 2021). Cryptocurrencies have attracted the attention of users for advantageous reasons such as easy, fast and time-efficient trans-