

Chapter 16

Economic, Social, and Environmental Impacts of CBDCs: Implications and Considerations

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ABSTRACT

This chapter explores the multifaceted impacts of central bank digital currencies (CBDCs) across the economic, social, and environmental domains. It investigates their potential to boost financial inclusion, streamlines transactions, and transforms monetary policy, while also addressing privacy issues, digital literacy, and environmental considerations. The chapter underscores the need for regulatory oversight, technology choices, and privacy safeguards, alongside strategies for education, equitable access, and environmental sustainability. The conclusion identifies future research areas, emphasizing the pivotal role of CBDCs in reshaping the global financial landscape.

1. INTRODUCTION

In the transformative era of digitization and Web3, the advent of Central Bank Digital Currencies (CBDCs) stands out as a pivotal development reshaping the landscape of monetary systems worldwide. The novelty and absence of historical precedents surrounding CBDCs have spurred extensive theoretical discussions in recent years, leading to varying perspectives on their definition, potential roles, and implications.

As a digital phenomena, CBDC primarily refers to the representation of a sovereign nation's official currency, systematically issued and regulated by its central bank or monetary authority. Departing from the conventional physical cash paradigm, CBDC exclusively exists in a digital format and carries the legal tender status. Positioned within the expansive domain of digital currencies, CBDCs stand in clear contrast to decentralized cryptocurrencies like for example Bitcoin and Ethereum. Unlike these decentral-

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ized counterparts, CBDCs are typically issued and backed by a central authority, ensuring a framework of stability and regulatory oversight. The International Monetary Fund (2020) characterizes CBDC as a widely accessible virtual form of fiat money issued by the central bank, forming part of the base money supply. Ferrari-Minesso et al. (2022) propose the concept of ‘reserves for all,’ suggesting that CBDC could be accessible not only to commercial banks but also to the general public. Bindseil (2019) adds to this perspective by considering CBDC as a new form of base money alongside overnight deposits held in central banks and issued banknotes. While various definitions exist, the Bank of International Settlements (BIS, 2020) provides guiding principles for CBDC, emphasizing its coexistence with other forms of money, avoidance of harm to financial or monetary stability, and promotion of innovation and efficiency. As technology continues transforming economic and social landscapes, CBDCs represent a substantial shift, impacting financial transactions, monetary policies, financial inclusion, behavioral changes, and sustainable practices.

This chapter’s primary goal is to examine the economic, social, and environmental impacts of CBDCs. In doing so, we aim to shed light on the potential advantages and challenges associated with their adoption. To achieve this, we have outlined specific research objectives as follows:

- Analyze the *economic implications* of CBDCs, including their role in financial inclusion, transaction cost reduction, and influence on monetary policies and financial stability.
- Explore the *social aspects* of CBDCs, including Government-to-Person (G2P) payments, Universal Basic Income (UBI) distribution and their effects on vulnerable populations, privacy concerns, digital literacy requirements, effects on global philanthropy, financial culture and behavior.
- Assess the *environmental impact and considerations* related to CBDCs, particularly as tools for monitoring and regulating sustainable practices, mitigating the carbon footprint and costs associated with the circulation of physical cash, as well as CBDCs’ energy consumption and electronic waste generation.
- Conceptualize the *implications and concerns* arising from our findings.

To achieve these objectives, this chapter is structured to provide a comprehensive understanding of CBDCs and their impacts. Section 2 elucidates the methodology employed in our research. Section 3 reviews the existing literature and outlines several key groups in CBDC research. Sections 4, 5, and 6 delve into the economic, social, and environmental impacts of CBDCs, respectively, as well as discuss the implications and considerations. The chapter concludes with a summary of key findings and identifies areas for future research. In a world swiftly transitioning to digital currencies, this research endeavors to contribute a nuanced understanding of CBDCs, offering actionable insights for policymakers, central banks, researchers, engaging with the ever-evolving dynamics of modern monetary systems.

2. METHODOLOGY

This chapter employs a methodological framework centered on a comprehensive literature review, data synthesis and analysis, and an exploration of global trends in CBDC adoption and impact. The cornerstone is an extensive *literature review*, encompassing academic articles, policy documents, and reports from central banks and financial institutions. Through the amalgamation of existing knowledge, the literature review constructs a historical context, delves into global trends, and pinpoints pertinent

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