Chapter 11
Risks, Challenges, and Ethical Considerations in Tokenized Economic Systems

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ABSTRACT

Tokenized economic systems, powered by blockchain and distributed ledger technologies, are reshaping ownership, finance, and governance through digital tokens representing assets, rights, or value. While offering transparency, efficiency, and new economic models, these systems introduce significant risks—technical vulnerabilities, market volatility, regulatory gaps, and governance flaws. Ethical concerns such as exclusion, manipulation, environmental harm, and lack of accountability are also prevalent. Through analysis of token types, systemic risks, and real-world failures (e.g., TerraUSD, The DAO, OpenSea), this chapter highlights both the promise and pitfalls of token economies. It proposes principles for responsible tokenization—including transparency, equity, sustainability, and hybrid governance—supported by interdisciplinary collaboration. The chapter aims to guide developers, regulators, and researchers in building resilient, ethical, and inclusive digital economies.

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1. INTRODUCTION

The way money is handled and financial systems work, is being transformed like never before. Recently, the rise of tokenized economic systems has been made possible by blockchain and distributed ledger technologies (DLT). With these systems, digital tokens stand in for real-world assets and allow for exchange, decision-making and value trading, all done without a central authority. Because of this, the ecosystems are drastically changing ownership, investment and supervision methods, giving hope for future value systems based on transparency, decentralization and inclusion (Buterin, 2014; Tapscott & Tapscott, 2016).

What is attractive about tokenization is that it can give equal access to capital, cut out middlemen and improve how transactions happen. A token on a blockchain network allows you to own part of artwork, real estate or business shares, trade them and oversee their use. This method leads to cost savings as well as allows more countries to participate in markets they could not join before (OECD, 2020). Even so, there are a lot of big challenges tied to these benefits. Tokenized systems have also created different types of risks which include issues with technology, changing regulations and conflicts related to privacy, fairness and environmental impact (Zetzsche, Buckley, & Arner, 2020).

We can observe the need for attention to these issues by observing the collapse of TerraUSD (UST), the DAO hack and issues with NFTs on platforms such as OpenSea. Such major incidents have shown the weaknesses of current tokenization schemes and revealed reasons why centralized structures cannot be fully trusted (Goforth, 2021).

This chapter carefully looks at tokenized economic systems, including their main workings, the problems they may bring and the ethical issues that arise. Using perspectives from computer science, law, ethics and economics, we want to provide an in-depth look and practical tools to guide the development of responsible, equitable and sustainable token economies.

2. UNDERSTANDING TOKENIZATION

Tokenization happens when any properties of an asset such as ownership, are assigned to a digital token on a distributed ledger. They may be used to show ownership of assets, for example, money, land, inventions, stocks or roles in governance. Because of tokenized economies, ownership can now be programmed, records are permanent and transactions are automatic, so finance and exchange are no longer the same as before (Catalini & Gans, 2016).