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The Future of Block Chain Technology in Modern Financial Policy: Exploring Its Applicability in Iraq

Mohammed Imad Abdulazeez
Department of Public Administration/ College of Administration and Economics Tikrit University, Iraq

ABSTRACT

Developments witnessed by the global economy impact all countries. The effectiveness of fiscal policy continues to play a prominent and important role due to increasing pressures related to exchange rates, inflation, deficits, indebtedness, and imbalances of payments. State intervention in economic life is necessary for formulating the economic policy of a country. The goal of fiscal policy is to achieve economic, financial, and monetary stability for Iraq.

KEYWORDS: *global economy, fiscal policy, economic life.*

1. INTRODUCTION

In light of the economic crises from which the Iraqi economy suffers, and given the presence of a financial policy aimed at mitigating the risks of large future plans against the economy, the state's public spending has a direct impact on financial policy tools.

2. RESEARCH PROBLEM

Do direct financial instruments, in particular, and fiscal policy, in general, play a prominent role in addressing the problems that developing countries suffer from? Using Iraq as a model, can these instruments effectively address trade imbalances, inflation, and unemployment? Additionally, are they more effective than monetary instruments in this context?

3. RESEARCH HYPOTHESIS

Each financial policy tool plays a prominent and important role in enhancing the effectiveness of the adopted policy, enabling it to respond to economic changes efficiently.

4. RESEARCH IMPORTANCE

The importance of this research stems from the significance of fiscal policy, its tools, and its impact on Iraq, especially in the context of the country's economic crises. Studying the effectiveness of fiscal policy in Iraq is crucial for addressing the ongoing debate about the relative effectiveness of fiscal policy compared to monetary policy, particularly regarding public spending, revenues, and the general budget.

5. METHODOLOGY

The methodology of this paper consist of the following steps:

5.1 The concept of blockchain technology

A database used in an encryption network is defined as a system that provides a single source of information, allowing parties with common interests to participate in creating a permanent, immutable, and transparent record of exchange transactions and processing without relying on a central authority [1].

5.2 Elements of the Blockchain system

Blockchain consists of basic elements, which are represented by the block, information, margin, and time fingerprint. These elements collectively represent the blockchain, as follows:

1. **The Block:** Represents the building unit of the chain, which is the set of operations to be performed within the chain, such as recording data, transferring money, or following up on a transaction. It is the basis for

calling the technology the blockchain. All transactions recorded on the network are collected in a block, each of which includes a specific number of transactions. The blocks are linked using a code called a hash, which guarantees the recording of the transaction and the time of its completion, thus ensuring the integrity of the record. Any addition, withdrawal, or modification to the transaction invalidates the encryption fingerprint of the entire chain [2].

2. **Hash:** The fundamental and distinctive pillar of the blockchain, sometimes symbolized as a digital signature. It is a code produced through an algorithm within the blockchain program and has four main functions [3]:
- Each chain is distinguished from the other, as each has its own hash.
- Each block is distinguished from others, as each block has its own hash.
- Each piece of information has its own hash.
- The blocks are connected to each other within the chain [4].

3. **Information:** The sub-process that takes place within a single block, representing the individual command within the block.
4. **Time Fingerprint:** The timing of any process within the chain.

5.3 How Blockchain Works

Blockchain technology is complex and subject to a highly reliable and accurate encryption system. Each piece of information is processed through successive stages:

1. Individuals interact with the digital blockchain through a pair of keys, a private key, and a public key. The first is used to sign private transactions, while the second is designated for transactions on the network.
2. Everyone can view all transactions within the blockchain and know each other's property without knowing their true identities, as this technology allows the use of pseudonyms.
3. When conducting a transaction, such as a money transfer, the blockchain shows whether each party can conduct the transaction. If the transaction is valid, participants authenticate it and publish it on the chain. If not, the transaction is ignored.
4. All validated and authenticated transactions during the agreed-upon time interval are collected and arranged in a block with its own time fingerprint, a process called mining.
5. Nodes verify the validity of the information in the block and its hash and connection to the previous block's hash. If all data is correct, the new block is appended to the chain [5].

5.4 The Importance of Blockchain

The benefits of blockchain technology include increasing scientific efficiency, innovative capabilities, and competitive abilities in many fields. Key advantages are:

1. **Removing Intermediary Parties:** Blockchain allows direct transactions between parties without an intermediary, increasing trust, transaction speed, and reducing costs.
2. **Decentralization:** Data is stored across all devices in the network, reducing the possibility of hacking, data loss, or destruction.
3. **Transparency and Trust:** All changes in the transaction record can be seen by regulatory agencies in the network, increasing transparency and trust.
4. **Information Security:** Data is fixed and unchangeable after being added to the chain, making auditing and detecting tampering easier and faster.
5. **Reducing Costs and Increasing Speed:** Transactions are settled quickly and directly without intermediary costs [6].

5.5 Types of Blockchain Systems

Blockchain systems are divided into three categories:

1. **Public Blockchain:** An unrestricted distributed ledger system where anyone with access to the web can join the blockchain platform and participate in the network.
2. **Private Blockchain:** Operates on the same principles as blockchain technology but allows controlled access through a central authority and agreed-upon rules, ensuring high security and privacy [7].
3. **Consortium Blockchain:** An open network but not completely unrestricted. Only a specific group of authorized parties, linked by a direct business relationship or agreement, can create and update transactions [8].

The following table present the differences between public and private blockchains and federation or alliance:

Table (1): Differences between public and private blockchains and federation or alliance

Private	United	Public	
One institution	Several institutions	Decentralized management	Users
Entry permit	Entry permit	Without a license	
consensus algorithm	consensus algorithm	proof of stake, proof of work etc	Compatibility mechanism Collective and affirmative
Less consumption	Less consumption	High energy consumption	
short	short	long	Transaction confirmation time
100xmsec	100xmsec	bitcoin:10min or more	
Transparency, security, reducing transaction costs and time spent, and reducing data duplication	Transparency, security and reducing the cost of transactions, time and data	Decentralized and there is no need for any intermediary party to complete transactions	Highlight the benefits

5.6 Characteristics of Blockchain Technology Application

1. **High Protective Encryption:** Blockchain technology features highly secure encryption, making data tampering difficult. Hacking a single block requires hacking all other blocks in the chain.
2. **Tracking Goods:** Blockchain helps in tracking goods, determining the quality of original goods, and their date of issue.
3. **Eliminates Third Parties:** Transactions and authentications are completed directly between the sender and recipient, enhancing trust between the two parties [9].
4. **Self-Correcting Network:** In case of hacking, attacks, or disconnection, the network can correct itself and validate transactions through a mathematical equation called Proof of Work [10].
5. **Smart Platforms:** Blockchain enables the construction of smart platforms to improve governance systems through smart contracts, which automate operations and payments, enhancing efficiency.
6. **Transparency:** Information added to the blockchain is immediately visible to all network participants and distributed, ensuring no reliance on a central authority [11].
7. **Consensus Mechanism:** Transactions are validated through algorithms that ensure all relevant network participants agree on their validity [12]

5.7 Challenges of Blockchain Technology Application

1. **Regulatory Hesitance:** There is hesitation in adopting blockchain technology due to potential undesirable regulatory and legal changes that could harm individuals and companies.
2. **Lack of Knowledge:** Insufficient knowledge of blockchain technology rules among individuals working in technical institutions, often limited to Bitcoin operations.
3. **Novelty of Technology:** The newness of blockchain requires time for widespread familiarity.
4. **Lack of International Standards:** There are currently no international standards for blockchain technology.
5. **Fear of New Technology:** General apprehension towards adopting new technology [13].

5.8 Application of Blockchain Technology in the Banking Sector

1. **Reducing Fraud and Electronic Crimes:** Blockchain reduces fraud by eliminating third-party intermediaries in financial transactions, increasing security and eliminating fraud across the network.
2. **Preserving Customer Data:** Financial institutions can reduce costs related to Know Your Customer (KYC) systems by adopting a unified process for customer data verification.
3. **Remote Transactions:** Blockchain enables transactions in remote areas without the need for new infrastructure, beneficial for developing countries without formal banking services.
4. **Speedy Transactions:** Blockchain facilitates quick and easy cross-border money transfers with lower fees compared to traditional banking systems.
5. **Smart Contracts:** Smart contracts provide transparency and control over digital asset transactions, making financial agreements more trustworthy and visible [14]

6. CONCLUSIONS

1. The absence of an economic vision and poor coordination between financial and monetary policies in Iraq.
2. Lack of economic awareness among individuals, negatively affecting financial instruments.
3. Over-reliance on oil as a depleted resource.
4. Insufficient liquidity in Iraq, despite being an oil-producing country.
5. High overhead expenses.

7. Recommendations

1. Diversify Iraq's exports.
2. Rationalize public spending, which is currently rising without significant benefit.
3. Adopt financial and economic policies that enhance the effectiveness of industrial, agricultural, and productive sectors.

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