

**“FROM INNOVATION TO IMPACT: UNVEILING BLOCKCHAIN'S
REVOLUTIONARY INFLUENCE ON GLOBAL GOVERNANCE IN THE DYNAMIC
LANDSCAPE OF INTERNATIONAL BUSINESS”**

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Abstract:

Blockchain technology has expanded beyond its original use in crypto currency and has been adopted in various industries of international business. This research paper aims to explore the transformative impact of blockchain on global governance within the dynamic landscape of international business. The disruption of traditional business practices by blockchain technology also impacts the global governance of these activities. The analysis of multiple blockchain applications in international finance, banking and insurance, supply chain management and logistics, and marketing and advertising suggests that the implementation of blockchain in international business has distinct effects on global governance. Although the protection of property rights and reduction of transaction costs are potential benefits, the implications for other aspects of global governance are more uncertain. To address these challenges, suggestions for the future regulation of blockchain applications in international business are provided. Additionally, the paper analyzes the specific ways in which blockchain can enhance transparency, accountability, efficiency, and security in global governance systems. The paper concludes by discussing the potential implications of blockchain's adoption on international business operations and global governance frameworks. Further it is recommended that future studies incorporate a multidisciplinary and empirical approach.

Keywords: Blockchain, Bit coin, distributed-ledger technology, international business, smart contracts, global governance

1. Introduction:

1.1 Background

Blockchain has a huge impact on the global economy, so it is necessary to measure its impact on the global economy. Although most technologies aim to improve business operations, they can have adverse or adverse effects on the business. It is important to consider the pros and cons of these developments in order to make informed decisions about their adoption and use. Blockchain is disrupting the global economy. It is increasingly used outside the cryptocurrency space and in global markets. According to Gartner (2017), by 2030, 30% of global consumers will have organizations using blockchain as technology in business. Additionally, a study conducted by the World Economic Forum (2015) stated that 10% of the global market will be stored on blockchain by 2027.

Blockchain technology functions as a digital, decentralized, and public record-keeping system, and is revolutionizing traditional commercial activities by simplifying operations, fostering trust, and reducing expenses for businesses. Its implementation is challenging conventional practices and inspiring innovative approaches to conducting business in various industries, companies, and corporate functions (Swan, 2015; Tapscott & Tapscott, 2016). Some of the most significant opportunities lie in centralized sectors, where automating processes and streamlining operations through the use of smart contracts makes businesses more efficient and eliminates or reduces the need for intermediaries, document processing, and contract enforcement, along with the substantial budgets that typically accompany these activities (Torres de Oliveira, 2017). Moreover, the risks associated with fraud and data security are diminished, as data no longer needs to be shared with or managed by centralized entities.

The increasing adoption of blockchain technology in the international business sector has the potential to reshape the rules and norms governing global governance, with far-reaching implications for the global economy. The potential advantages of blockchain technology include immutability, speed, and anonymity, as well as providing reliability and security (Zhu and Zhou, 2016). However,

there are also several drawbacks to consider. For instance, there is no central authority to oversee transactions on the blockchain. Moreover, some countries have yet to fully embrace blockchain as a component of their financial system, which can affect its overall acceptance and credibility. Additionally, the development and implementation of blockchain technology for international trade is still in the early stages, and more research and testing are needed to ensure its effectiveness and compatibility with existing systems (Swan, 2015). Despite these challenges, blockchain holds great promise for improving the efficiency and transparency of international trade by reducing bureaucracy, streamlining the tracking of goods, and minimizing delays in payment processing (Morabito, 2017).

Blockchain technology has a significant impact on the governance of international business activities. Both national governments, international organizations, and non-governmental organizations establish legal regulations and generally accepted norms and expectations to regulate international business. The implementation of blockchain technology is transforming traditional business processes and enabling companies to conduct transactions across borders beyond the reach of current legal frameworks and governance mechanism.

The primary objective of this research is to investigate the effects of blockchain technology on international business and global governance. To achieve this goal, we will first provide a concise overview of the salient features of blockchain technology. Subsequently, we will outline the theoretical framework of the study, which includes a thorough review of the extant literature on global governance and the identification of five critical functions of global governance. Next, we will describe the methodology section, which involves analyzing multiple secondary sources to identify and explain various blockchain applications in international business contexts. Based on these examples, we will then examine the impact of blockchain technology on the functions of global governance previously identified. The paper will conclude with implications for global governance and recommendations for future research.

1.2 Problem Statement

The purpose of this study is to investigate the relationship between distributed ledger technology and international trade, with a focus on the economic factors involved. The study aims to demonstrate an empirical link between blockchain and international trade, and to provide policymakers with valuable insights into the potential benefits of this technology. The findings of the study will contribute to the existing body of knowledge on the subject, and help to validate the prospective advantages of distributed ledger technology in the field of international trade.

While global governance frameworks play a crucial role in facilitating international business transactions, they often face challenges related to transparency, accountability, and efficiency. This paper seeks to examine how blockchain technology can address these challenges and revolutionize global governance in the dynamic landscape of international business.

1.3 Research Objectives

- 1) To understand the fundamental concepts and principles of blockchain technology.
- 2) To explore the potential benefits of blockchain in international business.
- 3) To analyze the specific ways in which blockchain can enhance global governance systems.
- 4) To discuss the potential implications of blockchain on international business operations and global governance frameworks.

2. Blockchain Technology :

Distributed ledger technology, which serves as the foundation for blockchain, is a type of database that is maintained and updated independently by each participant or node within a network. This ensures that each node has a copy of the entire record chain. The records are built and maintained independently, and the entire chain is secured by sophisticated mathematical algorithms that guarantee the integrity and security of the data. As a result, a comprehensive record of all the operations included in the database is provided (The European Central Bank, 2017).

The foundation of blockchain technology is built upon several key principles, as outlined in Leloup's

(2017) work, including:

- **Decentralization and Disintermediation:** The absence of a central authority governing the blockchain.
- **Consensus:** The validation or rejection of transactions is determined through consensus at the blockchain level, not by a central institution.
- **Immutability:** The inability to alter or erase information within the system.
- **Trust and Transparency:** The sharing of data and operations.

There are three primary types of blockchain, each with its own distinct characteristics and management approach (Buterin, 2015): public, private, and consortium. A public blockchain is open to all participants who can engage in creating, validating, and recording content. In contrast, a private blockchain restricts access and validation to specific entities. Lastly, a consortium-type blockchain is a hybrid of private and public blockchain, where a group manages the decentralized system (Buterin, 2015).

Blockchain technology has the potential to be utilized in a multitude of sectors, including banking and government.

One of the primary advantages of blockchain technology is its ability to eliminate the need for an intermediary to process data or execute operations. This is due to the fact that the data involved in transactions and operations on the blockchain network are permanently stored on the network. The elimination of a middleman or trusted third party means that there is no centralized point for data to pass through, no central point of vulnerability on the network to be exploited, and no opportunity for data to be manipulated. As a result, transactions conducted via blockchain technology are secure, transparent, and efficient (Nakamoto, 2008). When applied in the context of business, blockchain technology offers numerous benefits, such as cost savings, time savings, streamlined processes, increased trust in the system, increased security, increased transparency, reduced tampering and fraud, reduced auditing needs, reduced overhead and human error from manual processes, lower transaction costs, and more (Torres de Oliveira, 2017).

After the rise of blockchain technology, a new computing innovation called Ethereum was introduced by Vitalik Buterin in 2016. This innovation utilizes the same technology as blockchain, but offers an additional layer of functionality that enables users to run applications, such as smart contracts, on top of it. Smart contracts are digital protocols that automatically execute, verify, or enforce contracts when specific conditions are met (Cong & He, 2019). The use of smart contracts allows for the enforcement of contracts to be automated, rather than requiring manual intervention.

Not only do companies benefit from deploying smart contracts by saving both time and money, but they also eliminate the need for certain business processes due to the automated execution of contracts once specified conditions are met. This provides an added level of security and fairness between contracting parties. Companies can also custom-program smart contracts to suit their individual needs, including a range of conditions and inputs that can trigger pre-programmed protocols stored on a blockchain to execute a variety of actions, such as financial transactions or commands to smart devices (Murray et al., 2019, p. 9).

2.1 Smart contracts:

Smart Contracts were first introduced in 1994 by Nick Szabo but did not gain widespread popularity due to security concerns. The main purpose of Smart Contracts is to automate the execution of agreements between contracting parties. With the advent of cryptocurrency, these contracts have become more feasible. Smart Contracts can now be used to trigger payments automatically when predefined conditions of an agreement are met. These computer-enforced contracts are particularly useful in situations where assets are transferred only after specific conditions are met, which previously required the services of lawyers to draft contracts and banks to provide Escrow services. According to Michael Crosby (2016), Smart Contracts can now replace these traditional methods.

Smart contracts, enabled by blockchain technology, allow for the negotiation and conclusion of contracts without the need for intermediaries. These contracts automatically execute when specific conditions are met. Ethereum, a widely-used platform for smart contracts, is a distributed blockchain network with thousands of computers that each maintain a copy of all smart contracts.

Smart contracts offer several advantages, including speed and security. They eliminate the need for time-consuming transmission of paper contracts, and reduce the risk of counterfeiting in digital contracts. Additionally, smart contracts ensure the fulfilment of obligations, providing greater security than traditional contracts.

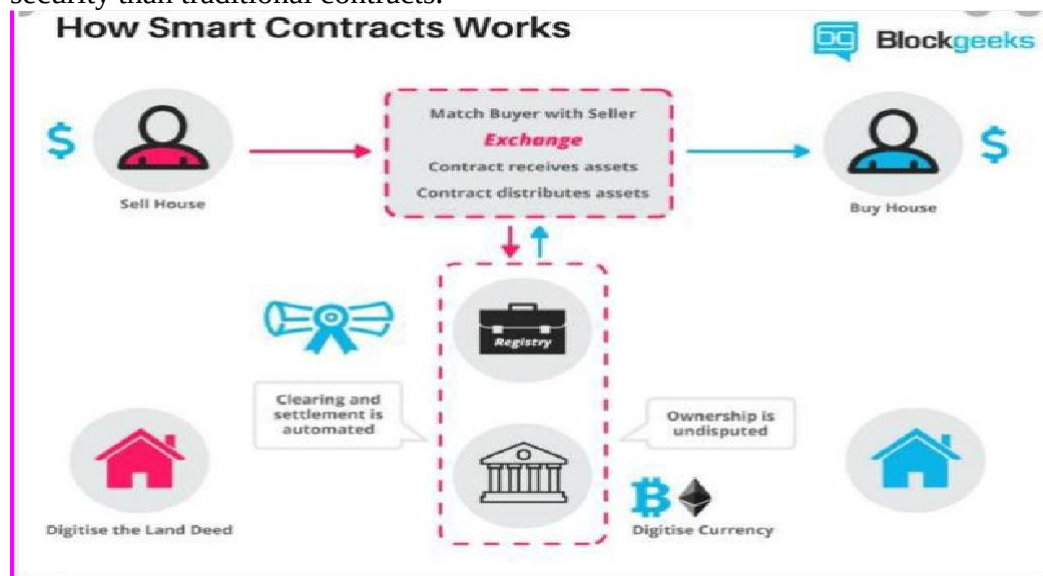


Fig. How smart contract works

Source: <https://www.optimum-web.com/what-is-ethereum-smart-contract/>

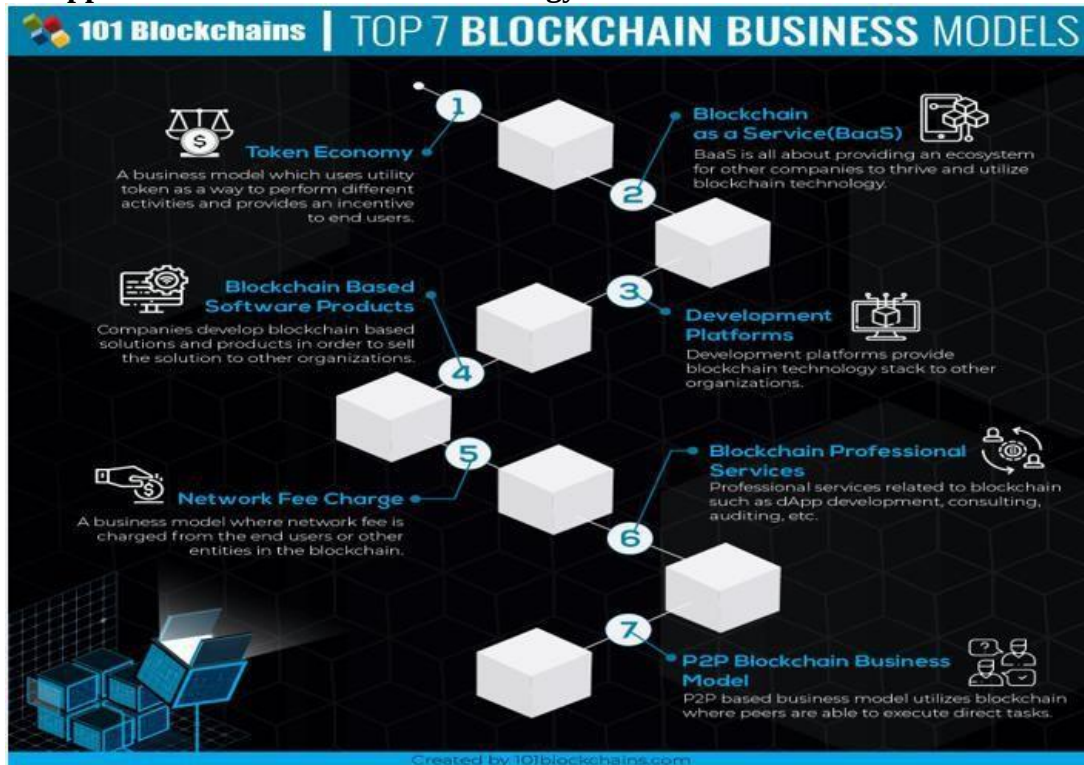
3..Methodology:

This research paper will employ a secondary data analysis approach to explore the revolutionary influence of blockchain on global governance in the context of international business.

Data collection and analysis:

Data was collected from multiple secondary sources that were published. Initial research involved conducting general literature on blockchain technology, international business, and global governance using keywords such as "blockchain," "distributed-ledger technology," "Bitcoin," "smart contracts," "blockchain governance," "blockchain regulation," "global governance," "international business," etc. in various combinations. These sources included Coindesk, Cointelegraph, Forbes Money, Fortune, Reuters, Additionally, the Lisk Academy website (<<https://lisk.io/academy/blockchain-business/blockchain-in-business>>) was a valuable source of information. which contains a many examples of blockchain use cases in business.

4 . Applications of Blockchain Technology in International Business



Blockchain business models

Source: <https://101blockchains.com/blockchain-business-models/>

According to Crosby et al. (2016), blockchain technology possesses the potential to be applied in a variety of industries, including finance, healthcare, and supply chain management. In the realm of international trade, blockchain technology can be harnessed to facilitate the exchange of goods and services, provide a secure and transparent platform for payments, and decrease the risks associated with fraud and counterfeiting.

Foreign trade is an intricate process that involves several parties, including exporters, importers, customs, shipping companies, ports, and buyers. With numerous stakeholders involved, communication issues can arise due to a lack of transparency among them, resulting in disruptions to the global trade process. For instance, when a producer has already delivered their goods to the importer, but the product is still in transit, indicating that it is still in the hands of the forwarder.

Foreign trade transactions are generally high-value transactions that occur between manufacturing, trading, and service companies and are considered business-to-business (B2B) operations. Such transactions have certain legal features, including the parties involved, the transaction mechanism, and the payment arrangements. In an export-import operation, there are several entities involved, such as the contracting parties, the product being traded, and the payment for the service. Additionally, other companies that provide transportation, insurance for the goods, and payment services also participate in the transaction. Public authorities in partner countries, such as government ministries and departments with foreign trade responsibilities, customs authorities, and chambers of commerce, also play a crucial role in facilitating the transaction. If the current mechanism for an export transaction is complex, the integration of blockchain technology can simplify the transaction process.

For entities involved in import-export operations, blockchain technology offers several advantages, such as:

- * **Real-time verification of documents:** Financial documents accessible via the blockchain can be verified and accepted in real time, reducing the time required to prepare the delivery of goods.
- * **Disintermediation:** Facilitating funding and payment, no third party is required to take over the risk, and correspondent relationships established between the banks involved in the payment mechanism are eliminated.

- * **Decentralizing contract execution:** Contract clauses are recorded in the blockchain, the status is updated, and the time needed for monitoring the delivery process is reduced.
- * **Proof of ownership:** The property title (bill of lading) is available in the blockchain, ensuring transparency on the location and property of the goods.
- * **Reduction of transaction costs:** Contract terms executed through smart contracts eliminate the intervention of correspondent banks.

- **International Finance, Banking, and Insurance**

International finance is undoubtedly the most obvious business area for blockchain technology to take hold due to its popularization with the advent of the cryptocurrency Bitcoin. As a payment alternative, it has disrupted e-commerce and international money transfer. However, even greater potential lies in the broader financial sector, where entire industries, such as clearinghouses in financial trading or title-search firms in real estate, could potentially be displaced, slashing costs and reducing the time required to complete a transaction (Wall Street Journal, 2016b).

Blockchain technology has been introduced at Barclays, resulting in a significant reduction in the time necessary to execute a capital exchange. What previously took an average of one week to ten days now takes less than a day (Reuters, 2016). In partnership with startup Wave, Barclays is now able to execute global trade transactions between two business entities in real-time using blockchain technology. According to Barclays' Global Head of Trade & Working Capital, Baghdadi, blockchain has the potential to "speed up trade transactions, reduce costs for companies around the world, optimize internal processes for banks, and reduce the risk of documentary fraud" (cited in Reuters, 2016)

They intend to collaborate with other financial institutions to promote the implementation of this system and facilitate comprehensive enhancements for handling trade documentation across the entire industry.

The appeal of immediate cross-border fund transfers extends to other businesses as well. Signature Bank's Signet™ system enables the bank's commercial clients to make free, secure payments to other commercial clients at any time of day, with no transaction limits, in as little as five seconds (Forbes, 2019). Veem, a startup backed by Google and Goldman Sachs, offers enterprises the ability to send and receive payments in various currencies, utilizing bitcoin as an intermediary asset. This system eliminates the need for either counterparty to directly hold bitcoin, and an algorithm automatically directs transactions along the most efficient payment rails. Notably, more than half the transactions processed by Veem rely on the cryptocurrency as a replacement for correspondents (Forbes, 2018). At the individual level, Santander has launched a mobile app called One Pay FX, which utilizes Ripple's blockchain technology to facilitate foreign exchange services and allow individuals to transfer money to other individuals instantly or on the same day (Santander, 2018).

Insurance companies are benefitting from the blockchain-based contract execution to automatically trigger the insurance claim processing procedure, providing greater trust and transparency between the contracting parties. AXA is using smart contracts for their flight delay insurance claim processing. This allows for storing and processing of insurance payouts based on smart contracts linked to global air traffic control databases, meaning that when a delay of over two hours is registered, compensation is automatically triggered. In this case, blockchain is streamlining processes for the provider and the customer, improving AXA's customer relationships (Business Insider, 2017). Allianz is implementing a similar automated claim payment for their flight delay insurance using blockchain (Forbes, 2019). Blockchain technology is also being employed to simplify administration and document processing in complex transactions. For example, Northern Trust is automating much of the legal paperwork.

In their private equity transactions, Northern Trust utilizes Hyperledger Fabric to administer events, including initial sales and liquidations of fund investments (2017). Forbes reported that the Depository Trust & Clearing Corporation plans to implement blockchain technology for the tracking of credit derivatives in the Trade Information Warehouse. This system serves as foundational infrastructure for the global financial industry and provides lifecycle event processing services for roughly 98% of all credit derivative transactions worldwide, amounting to \$11 trillion (Coindesk, 2018). If successful, the new blockchain-based system could streamline the process for this key

middleman in the global financial ecosystem and reduce a significant number of record redundancies.

- **International Supply Chain Management and Logistics**

The ethical implications of Supply Chain Management (SCM) have long been a subject of scrutiny from a business ethics perspective. This is particularly with regard to ethical, responsible, and sustainable sourcing practices (Kolk, 2016; Quarshie et al., 2016; Wang et al., 2019). The advent of blockchain technology offers greater transparency, efficiency, and accountability for companies in terms of the origin of their products. With blockchain, companies are able to trace the history of a product, from the procurement of raw materials to the final sale, throughout the entire supply chain (Dobrovnik et al., 2018; Treiblmaier, 2018).

Provenance is a platform that aims to make supply chains more transparent by helping companies utilize technology, thereby promoting informed consumer choices and hastening the transition towards sustainable consumption (Accenture, 2018). Provenance enhances businesses and products by verifying their supply chains and procurement practices, adopting a social approach to supply chain management (SCM) by integrating its services with companies' procurement processes to provide this information to customers via their website or app. The mission of Provenance (2019) is to help brands and retailers establish customer trust through transparency. Provenance employs blockchain technology to empower shoppers to select products using Provenance's platform.

Blockchain technology is increasingly being utilized to track products across various industries, ranging from metal components and food to even diamonds. In an effort to enhance its supply chain management (SCM), Toyota has joined the R3 blockchain consortium to employ this technology for tracking automotive parts as they are transported between countries and manufacturing facilities. This approach aids in addressing efficiency and logistical challenges that may arise due to disruptions in the supply chain caused by unexpected events, such as natural disasters like tsunamis and earthquakes (Wall Street Journal, 2016c).

As the demand for ethical standards among consumers increases, the implementation of blockchain technology in supply chains provides transparency that is crucial for establishing credibility. Companies that adopt this technology are able to differentiate themselves from their competitors and command a premium price for their products, as they can demonstrate their commitment to ethical practices and responsible supply chain management. The integration of blockchain technology in supply chains, therefore, offers a competitive advantage to companies and enhances their reputation by providing a transparent, tamper-proof record of the origin and movement of goods.

- **International Marketing and Advertising:**

In the field of International Marketing and Advertising, blockchain technology provides a more comprehensive understanding of advertising specifics such as the timing and performance of ads, and enhances transparency for companies engaging in advertising activities. Furthermore, it offers transparency to consumers who are being advertised to, as the public ledger of blockchain records information regarding the usage of data and its sale to third parties. Please note that I have adhered to your request by utilizing only American English and following its specific spelling, terms, and phrases.

The most significant challenge that the market has faced over the years is the unauthorized access and disclosure of customer data to various brands, thereby compromising the exclusivity that these brands had previously enjoyed. For example, if a potential buyer visits a particular website to search for a specific item, this information may be leaked and shared either in the public domain or with a competing brand. This issue has become increasingly prevalent in recent times, and the pursuit of data has become so critical that it has spawned a multibillion-dollar industry. Across the globe, multinational organizations are now recognizing that "Data is the new Oil," and companies are employing a wide range of techniques to collect as much data as possible.

The conventional method of tracking customer behavior on a website was through the use of cookies, which provided a rough estimate of the number of visitors and the products they viewed. However, as concerns over privacy have increased, companies have begun to restrict access to this data, making the use of cookies less common. Recently, several countries have recognized the importance

of protecting customer data, with the European Union being the first to enact the General Data Protection Regulation (GDPR), which explicitly gives customers the right to grant explicit consent for the use of their data and to designate a representative to act on their behalf.

The integration of blockchain technology into marketing has the potential to revolutionize the industry and change the way it currently operates. By using blockchain as a ledger, every transaction and online interaction between parties can be recorded and time-stamped. For instance, a customer could purchase a product from any brand and then give their consent for that information to be added to the blockchain. This would offer a variety of benefits and incentives for the customer.

Firstly, the brand could keep the customer informed about new product arrivals or any specific promotions they may be interested in, without compromising their sensitive information.

Secondly The use of blockchain technology in marketing would likely prove most beneficial for implementing loyalty programs. By establishing a virtual currency for customers to use in earning rewards, retailers could provide an incentive for shoppers to make purchases across multiple stores. In exchange for their loyalty, customers would receive exclusive reward points that could be redeemed at any of the retailer's locations or affiliated branches. The implementation of such a program would not only benefit the retailer by encouraging repeat business, but it would also enhance the overall customer experience by offering a more personalized and convenient shopping experience. The desired outcome is to create a win- win situation for both the retailer and the customer, fostering a more loyal and satisfied customer base.

Thirdly, the implementation of blockchain technology will enable personalization on a one- to-one basis, as it connects all of a customer's transactions and online activities. This will create a great opportunity for the company to gain insight into the customer's personality and preferences, respectively. Digital currencies have a long history of providing such examples. By utilizing a single structure of ownership records and intelligent contracts to automate tenant-landlord arrangements, property management procedures can be streamlined and made more efficient.

- **Better Security:** Blockchain technology is superior to other record-keeping systems in terms of security. This is because each transaction is encrypted and linked to the previous one. The name "Blockchain" is derived from the fact that it is a network of computers that work together to validate and add transactions to a "block," which is then added to a "line" on a node. The complex mathematical system used in Blockchain is immutable and cannot be altered once it has been created.

This eliminates the possibility of counterfeit information and hacking. Additionally, the decentralized nature of Blockchain provides a "trustless" efficiency, meaning that parties do not need to trust each other to conduct secure transactions.

- **Improved Transability:** The blockchain database is designed to track the origin of goods whenever an exchange is reported on the Blockchain. This will not only enhance security and deter bribery in foreign exchange firms but can also verify the authenticity of the goods exchanged. The technology can be employed in various industries such as pharmaceuticals to monitor the supply chain between suppliers and dealers, or it can serve as incontrovertible evidence of ownership in the art industry.

Advertisers and consumers alike benefit from Algebraix's blockchain-based advertising innovation. The company's app, ALX, is a permission-based advertising platform that utilizes the ALX token (Algebraix, 2019). Marketers can add content to the network and specify their target audience, and ALX delivers the content to suitable prospects on the network. The prospects who interact with the content are then paid in tokens. Additionally, marketers receive anonymous analytics about their target audience. Essentially, individuals are incentivized to participate in the platform through compensation for the use of their data and ad consumption. This platform respects privacy and data rights, providing value for both advertisers and consumers (Guillory, 2018). As a result, the implementation of blockchain technology has inadvertently improved consumer privacy in pursuit of more effective marketing and advertising.

5. Conceptual Framework: Functions of Global Governance



Fig. Functions of Governance

To comprehend the influence of blockchain applications on global governance in international business, it is crucial to have a clear understanding of governance and its primary functions. Governance can be defined as "the means to bring order and reduce conflict while achieving mutual benefits" (Williamson, 2010, p. 674).

The Commission on Global Governance (1995: 2) explains it as "the sum of the many ways individuals and institutions, public and private, manage their common affairs. It is a continuing process through which conflicting or diverse interests may be accommodated and cooperative action may be taken. It includes formal (...) as well as informal arrangements that people and institutions have agreed to or perceive to be in their interest." The objective of governance is to encourage cooperation and ensure efficient economic outcomes using fiscal and regulatory measures.

Although the academic literature on governance is vast and diverse, the following key functions of governance can be identified based on Williamson's work (1996; 2005): protection of property rights, minimization of transaction costs, internalization of externalities, prevention of monopolistic power, and maximization of social welfare.

The protection of property rights is an essential responsibility of governance, as underscored by Alchian (1989) and Williamson (1996). According to Allen et al. (2018, p. 117), the ability of individuals to acquire and trade valuable resources while respecting the rights of others is crucial for fostering individual freedom and prosperity. In this context, property rights can encompass both tangible and intangible assets.

Property rights are typically safeguarded by legal protections, but the process of transferring them is subject to various transaction costs. These costs, such as complexity, uncertainty, and contract enforcement expenses, arise when engaging in commercial activities. These costs determine whether transactions will occur on the general market or within the confines of a firm (Williamson, 2010). To encourage the exchange of goods and services, it is necessary to reduce these costs.

Although the price mechanism is a potent institution for coordinating economic activities, it may fail to produce the desired results when negative externalities are present. These externalities, which are any unfavourable consequences or effects arising from business activities that impact non-involved parties, such as environmental pollution, public health hazards, or economic system risk, are not regulated by the market. Hence, it is crucial that they are controlled through governance and regulation (Novak, 2018).

One of the primary functions of governance is to prevent the concentration of monopolistic power (Williamson, 1979). Monopolies arise when a single entity controls a significant portion of the supply for a particular product or service in the market, thereby gaining an unfair advantage. This situation requires regulation because it can result in increased prices and entry barriers for other suppliers, which is detrimental to both consumers and competitors (Viscusi et al., 2009).

6. Effects of Blockchain Applications on Global Governance :

The technology has the potential to disrupt business activities and affect the ability for such activities to be governed and regulated. Our conceptual framework allows us to analyze the potential implications for the five functions of global governance, including the protection of property rights, the reduction of transaction costs, the internalization of externalities, the prevention of monopolistic power, and the maximization of social welfare. These implications are explained above.

- **Protection of property rights:**

The applications of blockchain technology described in the previous section demonstrate its potential to impact property rights protection in various ways. First, it can be applied to the protection of personal data. With the implementation of blockchain in advertising, such as in the case of Facebook, personal information can be withheld from advertisers, and consumers can choose how much information to share with third parties, allowing for more privacy and protection of personal data. Additionally, money can be considered property that deserves protection. The examples of Barclays, Signature Bank, and Veem show that parties receiving payment will be better protected because there is no longer the option for chargeback fraud or payment reversal (Tsukerman, 2015). Moreover, the technology impacts legitimacy and transparency in logistics recordkeeping. When data is stored on a blockchain-based system, such as at IBM-Maersk, information pertaining to freight cannot be altered or recorded fraudulently. Blockchain disruptions offer the opportunity for increased protection of property rights and may prompt stricter regulation around data privacy, as well as recordkeeping and reporting. The desired result is achieved using only American English, adhering strictly to its spelling, specific terms, and phrases.

- **Transaction costs:**

Smart contracts based on blockchain technology offer companies a new way to complete complex and uncertain activities outside the firm through automated contract enforcement, which eliminates much of the uncertainty present in traditional contracts governed by existing forms of regulation. By automating contract execution, these contracts also remove the "hold-up" problem in contracts, or counterparty risk, when the paying party opportunistically attempts to exploit the selling party after already having made specific investments or expended resources to fulfill their contracted obligation (Holden & Malani, 2018). For example, AXA's automated insurance claim payouts demonstrate how smart contracts can remove transaction uncertainty and pay customers out automatically when a flight is delayed over the contract threshold.

Furthermore, blockchain-based smart contracts reduce principal-agent costs that arise from conflicting interests in contracting (Murray et al., 2019) and eliminate overhead costs for middlemen and auditors that are no longer needed due to automated and fraud-proof contract execution in the cases of insurance and money transfer, as well as in other applications in finance and supply chains.

Moreover, the transparency offered by blockchain's application on platforms like Provenance removes uncertainty about information upon which supply chain transactions are built.

One of the major obstacles hindering the adoption of blockchain technology within international businesses is the lack of standards. Presently, blockchain applications are developed separately by each company and industry, resulting in fragmented and incompatible technologies and applications. The competitive nature of business exacerbates this issue. Therefore, "organizational bodies will be required to establish standards and agreements, particularly in the context of interoperability between blockchains" (Accenture, 2018, p. 7). Establishing networks across industries is essential to realizing mutual benefits (Carson et al., 2018).

- **Internalization of negative externalities:**

The consequences of blockchain technology on externalities are evident in the context of environmental protection, as the technology's implementation itself creates negative environmental impacts due to the high energy consumption required to operate it. Although no publicly available information exists on the carbon emissions of the discussed examples, experts suggest that miners need a massive and continuously increasing amount of computing

power to carry out calculations for blockchain transactions (Gabison, 2016). This presents a challenge for governance, as the implementation of blockchain-based systems in supply chain management and finance is more efficient, transparent, and paper-saving, but how can an acceptable

level of energy consumption be determined, much less regulated, in these applications? As the use of blockchain technology in global business becomes more widespread, concerns like these will only grow.

- **Prevention of monopolistic power :**

The use of blockchain technology in international business is often led by multinational corporations, sometimes in partnership with start-up companies. However, there is a risk that these large actors may exploit their technological and financial advantages over smaller market participants, such as suppliers and customers, to advance their own interests and create barriers to entry for future competitors. To prevent this, regulatory authorities may provide financial and technological support to smaller entrepreneurs. On the other hand, blockchain and smart contracts can help level the playing field in supplier-buyer transactions by automating contract execution based on predetermined terms, rather than allowing the more powerful party to pressure the other into amending the terms. This provides greater fairness and competitiveness for small and medium-sized suppliers, according to research by Cole et al. (2019) and Murray et al. (2019).

- **Maximization of social welfare:**

The implementation of blockchain technology in international business has significant implications for social welfare. Specifically, the effects of this technology on supply chain management extend to both the system and the individuals involved. For instance, Walmart and Starbucks have embraced blockchain to enhance the integrity and credibility of their supply chains, which in turn promotes more ethical practices within the entire system. Furthermore, blockchain technology has the potential to provide consumers with greater transparency and information about the products they purchase, such as in the cases of Bumble Bee tuna, Nestle baby food, and Everledger diamonds. This enables consumers to make more informed decisions and shift their purchases towards ethically sourced goods. Additionally, as blockchain technology becomes more widely adopted in supply chain management, governance may intervene to regulate supply chains more strictly and mandate ethical provenance. Another area affected by blockchain technology is consumer trust and satisfaction.

Blockchain technology, as implemented by companies like Comcast, ensures that personal data remains concealed from advertisers and, in certain instances, enables individuals to decide whether to participate in advertising and how much information to disclose. This enhanced privacy and consumer confidence. These advancements may lead to stricter data protection and privacy regulations through governance. Additionally, blockchain's impact on financial companies has improved consumer satisfaction by enabling instant, fee-free cross-border currency transfers, thereby rendering middlemen obsolete. While these blockchain applications offer benefits to individuals, they pose governance challenges due to their unregulated and decentralized nature, which is not overseen by central banks (World Economic Forum, 2015). Transactions involving the abuse of privileges, tax evasion, corruption, or the transfer of funds for illegal goods and services or to malicious entities are difficult to track, let alone halt or reverse, limiting the potential of governance.

7. Contributions and Implications

➤ Implications for Global Governance

The purpose of this study was to investigate the consequences of blockchain technology on international business and its implications for global governance. The study discovered that blockchain technology has expanded beyond cryptocurrencies and is being utilized in various sectors of international business, such as finance, banking, insurance, supply chain management, logistics, and marketing. The increasing number of blockchain applications is affecting global governance in different ways. While some aspects of governance are becoming more challenging, others are benefiting from blockchain technology. Specifically, this analysis demonstrates that property rights protection can be enhanced and transaction costs can be decreased. The risk of fraud and data security breaches is also reduced because data no longer needs to be given to or managed by centralized entities. As a result, trust is shifting from people and institutions to mathematical calculations, leading to reduced uncertainty. As blockchain technology matures and technical

standards are established, these potential benefits will be fully realized. However, the effects of blockchain applications on other functions of global governance are less clear. One major challenge is the negative externalities caused by the high energy consumption required for blockchain transaction calculations. Furthermore, this study highlights the risk that multinational corporations, as early adopters of blockchain technology, may use their technological and financial superiority to their advantage over smaller market participants. To address these concerns, regulatory authorities must implement effective measures that prevent the emergence of monopolistic power.

The integration of blockchain technology in international business has the potential to enhance social welfare by promoting consumer transparency and satisfaction across all industries studied. However, it is crucial to establish regulations and monitoring mechanisms to prevent the misuse of user anonymity for illegal activities, such as corruption, tax evasion, and the trade of weapons or drugs. The governance challenges associated with blockchain technology are similar to those of various electronic payment systems (Böhme et al., 2015). Furthermore, the decentralized ledger structure of blockchain poses additional difficulties in identifying and preventing malicious activity (Allen et al., 2018) and holding a central entity accountable when such activity occurs (Finck, 2019). These challenges hinder the effectiveness of rule enforcement and control in governance.

In the context, an essential difference between public blockchains, such as Bitcoin, and private blockchains prevalent in international business must be recognized. While most prior research has focused on public blockchains, our study highlights that private blockchains present additional challenges in terms of governance. For example, private operators' ability to limit access to specific parties increases the risk of monopolistic power, which reduces social welfare generation. Furthermore, the decentralized nature of blockchain technology hinders direct governmental interventions. Thus, co-regulation between formal institutions and informal actors is necessary to address these challenges.

With the involvement of "policy entrepreneurs" (Mintrom, 1997), who cooperate and compete with traditional regulators for the best governance, there may be some benefit. Drawing on this idea, Reyes (2016, p. 195) presents an endogenous theory of governance, in which "regulators undertake the dual task of enacting a law or regulation via statute and then implementing that statute through code by engaging in an iterative and cooperative process with the technologies' core developers and with consensus from the network, so that regulation is endogenously incorporated into the decentralized ledger technology and the applications running on top of the technology." In a similar vein, Finck (2019) suggests that public authorities voluntarily involve technology leaders, business innovators, and policy entrepreneurs in the drafting, implementation, and enforcement of norms.

This concept of co-regulation "allows for regulatory experimentalism, which is particularly valuable in this fast-changing and diverse industry" (Finck, 2019, p. 174).

As the rapid development of blockchain technologies and applications continues to unfold, the governance of blockchain in international business is expected to be significantly impacted. While most of the examples examined in this study are currently in a pilot stage, it is essential to maintain constant surveillance of technological and business innovations and implement flexible regulatory measures to keep pace with this dynamic technology.

One of the key challenges in governing blockchains is their inherently transnational nature. Many early adopters of this technology are multinational corporations that operate on a global scale, enabling them to exploit arbitrage advantages by shifting activities to locations and jurisdictions that align with their preferences and requirements (Finck, 2019). This geographic mobility of globally operating actors necessitates multilateral and transnational approaches to governance that go beyond national borders. As Swan (2015) puts it, "The idea is to lift transnational organizations out of the constraints of geography-based, nation-state jurisdiction to a truly global cloud" (p. 32).

8. Suggestions:

It is suggested that future research should take a multidisciplinary approach. The intricate nature of blockchain technology necessitates proficiency in information technology, while its fundamental legal challenges cannot be fully comprehended without a deep understanding of international law. Furthermore, expertise in international business is required to grasp the implications for business

models and management strategies. Although existing research has primarily focused on one of these fields, the complex practical and academic questions that arise from the application of blockchain technology call for meaningful multidisciplinary research that transcends the confines of a single discipline (Risius&Spohrer, 2017).

9. Conclusion

Blockchain technology is often hailed as a game-changing invention and a precursor to a new economic era. It serves as a cross-border digital transaction platform with tremendous potential for facilitating international commerce flows. The underlying smart technology is highly praised for simplifying global trading processes. Utilizing data from 2009 to 2018, we conducted an empirical analysis to examine the relationship between blockchain and world trade using empirical evidence that has not been investigated in any previous study. The results of the Hansen variable instability cointegration test revealed that all of the variables moved together in a long-term relationship. The VAR Granger causality test found unidirectional causation from blockchain to international commerce, indicating that blockchain technology has an impact on international trade. We used the GLM estimate approach to explore the impact of blockchain on international commerce. We discovered that blockchain technology has a positive impact on international trade.

The efficient implementation of blockchain technology improves international trade by enhancing security, trust, and transparency while reducing all types of trade-related expenses. Additionally, our research revealed that GDP has a positive impact on foreign trade. Greater economic growth is associated with a country's income level, resulting in increased trade flows. We also found a negative relationship between inflation and foreign trade. Inflation affects the price level of goods and services, influencing the production costs of importer and exporter nations, as well as the contours of trade flows. Moreover, population growth has a significant influence on international trade. Population expansion within a country increases the labor force, demand, supply, and productivity, all of which boost trade volume. We discovered that FDI has a positive relationship with international trade. Increased FDI enhances supply chain productivity, resulting in greater trade flows. Taxes have been demonstrated to have a significant negative impact on global trade. Increased tax rates affect a country's manufacturing costs and hinder overseas trade. We also found that business independence benefits international trade. Business efficiency, regulation, and infrastructural development produce new business, increasing trade flows. Our results are consistent with the studies of Derindag et al. (2020), Keller (2021), and Yu (2021).

Every decade brings with itself some inevitable reforms with it. It certainly seems that the blockchain qualifies to be one of the much-needed reform. Nonetheless, the technology has always been considered as the side kick with Bitcoin being the protagonist. Introduced after the global recession of 2008, with underlining feature of its decentralized character. It was widely accepted by the certain section of people, who were aggrieved by the handling of Global Crisis. Without doubt, the timing of the concept was impeccable and the solution it entailed was gratifying. However, considering the circumstances we are in, it certainly seems that the Blockchain emerges as the real game changer. As discussed above, this technology's universal trait makes it perfect for any kind of work. Most importantly, it will act as a panacea to curb the menace of centralized authority and ubiquitous infringement of privacy.

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