Professor Kelly Mua Kingsly
PhD/MBA, MPA, CFA, CFI, PMP, ISO
Finance engineer (Forensic finance and audits)
blog:www.kellykingsly.com
My Papers:SSRN
https://www.linkedin.com/in/kelly-kingsley-ph-d-2a5a1416/

Tokenisation: Unlocking Developing Countries Wealth

1. Introduction

Different surveys conducted by the World Bank, International Monetary Fund (IMF), Asian Development Bank (ADB), and various other organisations have consistently estimated that the size of the black economy or shadow economy has experienced substantial growth in recent decades. This growth varies significantly across developing and least developed countries (LDCs). Furthermore, estimates from reputable sources such as the Financial Secrecy Index (FSI), Tax Justice Network, Oxfam, and other renowned agencies suggest that illicit financial flow is alarmingly immense, significantly affecting government tax revenue. The FSI, a significant indicator, demonstrates exceptionally high mean rankings for some developing LDCs. This crucial finding is viewed as one of the primary catalysts prompting governments to address this issue by considering developing innovative solutions. These include the exploration of cryptocurrencies, the implementation of blockchain applications, the utilisation of artificial intelligence to enhance e-governance, the establishment of e-cryptocurrency as legal tender, the widespread adoption of e-commerce, and the gradual phasing out of traditional paper money in favour of digitised alternatives. Regrettably, the lack of official figures about this matter can be attributed to the distinctive characteristics of cryptocurrencies, such as Bitcoin and blockchain applications, primarily in countries with limited technological advancements. As a result, the current study aims to shed light on a concept known as the FDI return index, focusing specifically on selected developing and LDC countries. By exploring this index, a comprehensive understanding of these countries' economic performance and potential foreign direct investment returns can be obtained.

Foreign direct investment is now widely acknowledged as being at the forefront when providing substantial financial resources for countries to effectively address their macroeconomic development requirements on both domestic and international fronts. This is particularly true for developing nations and those

classified as least developed countries, where the dire need for economic upliftment is paramount. Moreover, the profound impact of foreign direct investment extends far beyond mere economic implications, as it serves as an influential catalyst for driving the creation of communal prosperity, promoting sustainable development, generating a multitude of employment opportunities, and bridging the divide between imports and exports, production and consumption, and various other socioeconomic factors. Consequently, it should come as no surprise that attracting high levels of investment capital has remained the primary goal for host nations throughout countless eras of history, as it has proven to be crucial for achieving sustained economic growth, fostering technological advancements, enhancing infrastructure and public services, improving healthcare and education systems, and ultimately uplifting the overall quality of life for its citizens. By attracting foreign direct investment, nations can tap into external resources, knowledge, and expertise that can significantly boost their domestic industries, encourage innovation and entrepreneurship, and drive productivity and competitiveness in the global market. Furthermore, the flow of foreign direct investment brings about many positive spillover effects, creating linkages and synergies between various sectors of the economy. This leads to the stimulation of local businesses, the transfer of technology and managerial skills, and the expansion of export opportunities, which not only contributes to economic diversification but also enhances the resilience of nations against external shocks. Foreign direct investment is also pivotal in building strong and mutually beneficial relationships between countries, fostering international cooperation, and promoting peace and stability through economic integration and interdependence. In attracting foreign direct investment, host nations often implement various strategies and policies to create a conducive business environment. This includes ensuring the rule of law, protecting property rights, reducing bureaucratic red tape, enhancing transparency and accountability, and providing investment incentives such as tax breaks, subsidies, and streamlined procedures. By doing so, countries can effectively attract foreign investors and multinational corporations, seeking stable and lucrative opportunities for expansion and diversification. Overall, foreign direct investment has proven to be a vital catalyst for economic development, enabling nations to overcome resource constraints, stimulate growth, create employment, alleviate poverty, and reduce inequality. It is a powerful tool that empowers countries to leverage their comparative advantages, capitalise on global markets, and chart a path towards sustainable and inclusive development. As the world becomes increasingly

interconnected and interdependent, the role of foreign direct investment will continue to be of utmost importance, offering a transformative potential for nations to enhance their prosperity, well-being, and collective progress. (Althoff & Reichardt, 2024)(Nijman & Wei, 2020)(Nunn, 2020)(Hickel et al., 2021)(Chen et al.2021)(Sun et al., 2020)

1.1. Background and Significance

Tokenisation is a forefront blockchain concept initiated by experts and serves as an investment gateway that cannot be fully appreciated in developing countries without knowing the background. Once a person owns a tokenised resource tallied in the blockchain, the token can be fractionally traded or used as collateral for a standard loan in some instances, such as monetising an anticipated, non-liquid, and non-securitized asset. In other words, "tokens" can make illiquid wealth liquid or coinsurentialize resources and create wealth in a society like those in developing countries where ownership rights are prevalent but illiquid or undeveloped with high condition-dependent social and externalities costs.

The concept of a stock market that is publicly available through an initial public offering process for growing businesses has not been thoroughly investigated in Africa, and little attention has been paid to infrastructural financing. The reasoning is that informal ownership rights and shared renting are common in the region, and using tokens as coins will disrupt previous social contracts of shared ownership without written agreements. However, such assumptions do not uphold the principles of tokenisation nowadays, albeit having vital policy implications in the African region. Additionally, in developing countries, under-securitized wealth, explained by the high costs of formalisation, is abundant, thus promoting nations' welfare status or capital volume. For example, Artu and Artu (2021) argue that when the informal ownership costs exceed the formal (tokenised) ownership costs, the volume of GDP of capital is more than that of the written agreements, which tend to be few.

Poverty is a complex issue requiring the cooperation of many sectors to help the world's poor people escape deprivation or inadequate material possessions; however, the global poverty alleviation productivity rate is dwindling. As of the end of 2016, Africa, the least developed continent according to the United Nations Human Development Index, has endured irregular high and low growth cycles. Consequently, the need for time-purpose sustaining factors for sub-national governments to structure a benign-oriented operation to avoid the many issues of

the UN-SDG has never been more pertinent. A token contract structure that makes individual essential gifts to public projects or pre-committed bailouts and makes them walkable or non-misappropriate for government officials is bound to be drawn and further research.

2. Understanding Tokenization

Tokenisation refers to the truly captivating and awe-inspiring process of representing a profound and indispensable right to an asset using cryptographically secured digital tokens on the remarkable and revolutionary blockchain technology. While not entirely novel, as it has been explored in various capacities before, this exceptionally groundbreaking and forward-thinking concept holds immeasurable and extraordinary potential when it is thoughtfully and prudently applied to the context of developing countries. Imagine, if you will, a hypothetical situation in a developing country where a financial institution holds a portfolio of loans. With the transformative power of tokenisation, this institution can effortlessly and seamlessly tokenise these loans as efficiently as a well-established and established first-world bank does with its mortgages. This ingenious and innovative process not only results in the institution obtaining a brand new and invaluable fungible asset but also grants them the incredible ability to utilise this asset in issuing shares against it. These freshly minted and marvellously crafted shares, born out of the visionary concept of tokenisation, hold within them an extraordinary power - the power to be swapped and exchanged on a secondary market. This exquisite and unparalleled functionality provides a gateway and a golden opportunity for the institution to gain access and exposure to the global and international investment landscape. It enables them to not only attract potential investors from all corners of the world but also give them the means to tap into the vast array of investment opportunities that were once beyond their reach. This transformative system's beauty and magnificence lie in its astonishing and dazzling ability to significantly lower the excessive and burdensome costs traditionally associated with issuing loans across many scenarios and circumstances. Its profound impact and remarkable efficiency have even shown the potential to reduce the cost of issuing loans from an unfathomable and astonishing 14% to a mere and modest 2%, a truly staggering and awe-inspiring feat. By embracing and wholeheartedly embracing the revolutionary power of tokenisation, developing countries can unlock and unleash a boundless world of financial possibilities, paving the path towards unprecedented economic growth, prosperity, and abundance.

Tokenisation refers to representing an owner's right to an asset as a digital token on a blockchain. This token references and proves ownership of an investment contract, title, invoice, loan, or indeed any other categorisation of asset that can be imagined. As a result of the asset being on a blockchain, you don't need a bank or any other intermediary party to confirm the ownership. This gives you security in owning that asset, which has never been possible. Reducing this loss will unlock much human capital and create unprecedented opportunities for individuals from all walks of life. For example, let's consider the case of an Ethiopian farmer. With tokenisation, this farmer can utilise their title deed to their farm to secure a loan and leverage the acquired capital to expand their business operations. Instead of being limited by traditional financial institutions and their bureaucratic processes, farmers can now access funding quickly and efficiently, empowering them to make tangible advancements. They could invest in crucial equipment, such as a truck, to dramatically improve their productivity and increase their potential earnings. With access to this additional equipment, the Ethiopian farmer can effectively double their profits from a mere $3 a day to a remarkable $6 a day. This uplift in income can significantly impact their livelihood, enabling them to support their family, invest in education, and improve their overall quality of life. Moreover, the farmer gains greater resilience in times of market fluctuations. Even if the food price were to drop, the farmer would still owe the money borrowed from the loan. However, acquiring the truck opens up new avenues for revenue generation, increasing the likelihood of positive outcomes in the long run. Overall, the integration of tokenisation and blockchain technology holds immense potential for individuals worldwide. It revolutionises how assets are owned and accessed, allowing for greater financial inclusivity and economic empowerment. The possibilities are boundless, from farmers in developing countries to entrepreneurs seeking capital for their ventures. As we continue exploring and harness tokenisation's capabilities, we move towards a future where ownership and economic opportunities are genuinely democratised.

2.1. Definition and Concept

Indeed, different types of tokenisation exist in theory and, consequently, with different connotations. On an international level, assets can be tokenised in various ways. The economic concept of a 'token' has been co-opted from connectionist computationalism as a new form of an electronic contract or promissory note (or similar cryptographic register) that satisfies specific computational and cryptographic standards for functionality and, in so doing, can be directly traded.

Therefore, a token is a blockchain-based representation of a right or claim, which can be beneficial (such as a contract code or loan token) or ownership (such as energy credit or share token). Other more practical views state that an 'original' asset can be split. Its part being kept track of using a token or can in its whole be represented by a token in a proceeding implementation where our particular interest is from the economic standpoint, property rights (more precisely, ownership and entitlement to some flow unit or cash flow or a company's part). Next, a digital token is a unit of value created, managed, and exchanged using blockchain technology (also termed a cryptocurrency or a token). Tokens can adopt the form of a functional token (i.e. utility token—represents access to a product or service) or a security token (a tokenised security, security token, or equity token—requires token holders to invest in a company), Non-Fungible Token NFT token (a token that represents ownership of a unique digital item and is used to enable people to own unique things) or stablecoin (represents value pegged to the value of other assets like the United States dollars, for example; it allows merchants to accept a cryptocurrency without facing the risks. Note from the authors: In the upcoming discussion, we presume that by "tokenisation," we refer to the ownership right (property right) embodied by a token whose elements are divisible. Tokenised assets have gained significant traction in various sectors due to their versatility and potential. They offer many possibilities for representing ownership and transfer of rights. With different types of tokenisation prevailing, the concept of a 'token' has evolved into a powerful tool in electronic contracts and promissory notes. These tokens abide by specific computational and cryptographic standards, enabling seamless functionality and direct trading. A token serves as a blockchain-based representation of a right or claim. It can take on numerous forms depending on its nature and purpose. For instance, a token can represent beneficial assets like contract codes or loan tokens, providing tangible benefits to the holders. On the other hand, tokens can also embody ownership rights, such as energy credits or share tokens, granting individuals a stake in a particular asset. From a practical standpoint, tokenisation allows dividing an original asset into manageable parts. Each portion can then be tracked using tokens, allowing for streamlined management and improved efficiency. Additionally, tokens can fully represent assets, simplifying complex ownership structures and facilitating economic transactions. In this context, property rights, ownership, and entitlements to cash flow or a company's portion can be effectively managed through tokenised systems. Furthermore, digital tokens have emerged as value units within blockchain technology. These tokens, or cryptocurrencies,

are created, managed, and exchanged using secure blockchain systems. They serve as a means of facilitating transactions and represent various aspects of value. Functional tokens, also called utility tokens, provide access to specific products or services. They serve as gateways to unlock the functionalities offered within a blockchain ecosystem. On the other hand, security tokens require token holders to invest in a company, providing them with ownership rights and potentially impacting their future performance. In recent times, Non-Fungible Tokens (NFTs) have gained considerable popularity. These tokens represent ownership of unique digital items and allow individuals to possess one-of-a-kind assets. NFTs revolutionise the concept of ownership in the digital realm, allowing individuals to own and trade distinctive digital creations and items honestly. Another digital token form is stablecoin, designed to maintain a stable value tied to other assets like the United States dollar. It offers a level of predictability and certainty that traditional cryptocurrencies may lack. Stablecoins enable merchants to accept cryptocurrencies without exposing themselves to the inherent volatility and risks associated with the market. It is important to note that throughout our discussion, we primarily focus on tokenising ownership rights embodied by divisible tokens. This perspective emphasises the potential of tokenisation to revolutionise property rights and their representation in various sectors.

3. Applications in Developing Countries

The applications of tokenisation can be immediately relevant and applied in developing countries. These countries mainly consist of the rich and poor classes that are formally and less often informally employed. These working poor may contract debt but miss out on the world of choice and are most often unable to decide what they are getting or how much this is costing them. A reason usually advanced is that an essential share of the population does not have enough economic power to command the range of goods and assets that constitute a country's stock of wealth. Therefore, tokenisation works to unlock the stock of wealth by changing the relative price of seeking formal ownership, choices and income that come with this practical and better way of attaining and holding wealth. Buyers who cannot afford a house to live in - nor afford the transactional costs of a mortgage (or guarantee put up by a micro-finance) – can buy a home in parts. Many people can pull resources together to purchase formal ownership of some asset. Tokenisation has proven to have manifold applications, making it highly relevant and immediately applicable in developing countries across the globe. These countries, predominantly of a stark contrast between the affluent and

the impoverished class, often grapple with economic disparities. Among this demographic, a substantial proportion is formally or informally employed, struggling to make ends meet. Consequently, these working poor frequently find themselves burdened with debt, grappling with limited options, and lacking the power to exercise choice or determine the actual cost implications of their decisions. This glaring issue can be attributed mainly to the fact that a significant portion of the population lacks the necessary economic empowerment to access diverse goods and assets, which inherently constitute a nation's overall wealth. Within this context, tokenisation emerges as a transformative tool, primed to unlock inherent wealth reservoirs by inducing a relative change in the price dynamics associated with pursuing formal ownership, enabling enhanced choices, and augmenting income generation methodologies. Moreover, tokenisation empowers potential buyers who cannot afford an entire house or bear the considerable transactional expenses linked to a mortgage or micro-finance guarantee by offering the innovative option to purchase a property in fractions. The collective pooling of resources by numerous individuals opens avenues for attaining formal ownership over select assets, thereby heralding a new era of inclusive wealth creation and distribution.

Currently, a staggering majority of South Africans, over 80%, find themselves locked out of formal opportunities for asset ownership. The reason behind this unfortunate reality is that the costs associated with owning such assets far outweigh the current gains that one can derive from them. As a result, these individuals are left as informal users of assets, unable to benefit fully from the formal systems in place. However, there are avenues through which these individuals can be reached and provided with the benefits of formal asset use. For instance, those who already own assets individually can extend the advantages of formal ownership to a larger group. This can be achieved by integrating these individuals into alternative, modern systems, whereby the number of formal asset owners is increased, subsequently reducing the overall cost of ownership. To facilitate this process, it is crucial to establish clear definitions of economic administration terms. This is essential because such definitions have legal implications for all South African legal and financial actors. These implications apply to individuals currently involved in economic transactions or asset/income protection processes and those indirectly affected, such as members of small groups who contribute to community or welfare funds through confined payments or membership fees. The concept of a token comes into play in this

scenario. A token can exist in various forms, including physical, digital, or legal entities. Regardless of its specific design, the fundamental purpose of a token is to represent either a complete asset or a fraction thereof. Tokens can digitise assets, such as real estate, or even represent a share of equity in an operational entity. Essentially, tokens serve as a means through which individuals can invest in underlying assets. Unfortunately, only a tiny fraction of individuals on the African continent currently possess enough capital to forego temporary or artificial income derived from their assets to pursue formal education in asset ownership structures. Therefore, an urgent need is for a different economy that caters to these individuals. The process of tokenising assets holds immense potential in this regard. Tokenisation will enable a standardised investment function, allowing individuals to invest their money and acquire a stake in an asset project's residual value and growing returns. This principle can be applied to various contexts, whether a scenic reserve, a government green belt, a youth business venture, or even a social or economic program lacking the necessary economic gain to qualify as a formal tradable asset.

3.1. Financial Inclusion

Efforts to promote financial inclusion have also been one of the primary applications suggested for promoting tokenisation processes, most commonly in national roadmaps. Between 2002 and 2016, the shares of adults with transaction accounts grew, yet vast portions remain excluded from the formal financial system, especially in countries with post-Soviet economies (PSEs). Russ and Brutzkus (2020) suggest that the processes and opportunities in Foreign Direct Investments (FDIs) and Financial Technologies (FTs) can facilitate the inclusion of parts of the informal economy by elevating the informal and providing a data trap or time opportunity for others; those who might intend to shed assets into the formal financial system through a variety of mechanisms. Various national documents and roadmaps prioritising blockchain and tokenisation activities mainly focused on FDIs or post-Soviet economies, also include financial inclusion as a critical activity. These initiatives aim to bridge the gap between the unbanked population and formal financial services, ensuring equal access to financial resources for all individuals. By leveraging the power of blockchain and tokenisation, governments and organisations can create innovative solutions that empower individuals and communities, allowing them to participate fully in the modern digital economy. Through a comprehensive analysis of global financial systems, it becomes evident that promoting financial inclusion is paramount. Not

only does it catalyse socio-economic growth, but it also facilitates the efficient integration of marginalised individuals into the formal financial landscape. In this regard, tokenisation processes emerge as a compelling solution, particularly when embedded within national roadmaps. The years spanning from 2002 to 2016 witnessed a significant rise in transaction account holders worldwide. However, despite this growth, a substantial proportion of the global population remains excluded from the benefits of the formal financial system, with a specific focus on countries with post-Soviet economies (PSEs). Recent research conducted by Russ and Brutzkus (2020) sheds light on the transformative potential of Foreign Direct Investments (FDIs) and Financial Technologies (FTs) in promoting financial inclusion. These processes facilitate the integration of informal economic sectors and provide a unique opportunity for individuals to migrate their assets into the formal financial system through various mechanisms. As such, national documents and roadmaps emphasise the significance of blockchain and tokenisation activities, particularly on FDIs and post-Soviet economies. Such initiatives aim to bridge the vast chasm between the unbanked population and the formal financial services sector. By doing so, equal access to financial resources can be guaranteed for all individuals, regardless of their socioeconomic backgrounds. Utilising blockchain technology and tokenisation holds immense promise in empowering governments and organisations to devise innovative solutions that fully enable the participation of individuals and communities in the modern digital economy. These transformative technologies have the potential to revolutionise the way financial services are accessed and utilised, democratising access and empowering individuals to take control of their financial well-being. The benefits extend beyond mere inclusivity, as adopting blockchain and tokenisation can also enhance transparency, efficiency, and security within financial systems. By fostering a collaborative and inclusive approach, governments and organisations can leverage these technological advancements to pave the way towards a more equitable and prosperous future for all.

Barriers to traditional financial inclusion range from lacking acceptable proof of identity to the exorbitant costs of maintaining physical bank branches. However, there might be another solution, which is the tokenised financial system. These systems, such as decentralised finance (DeFi) applications, present numerous opportunities to offer financial services to the unbanked population in poorly served economies (PSEs). In such PSEs, the local currencies often experience significant volatility, making Bitcoin a preferred choice for remittances from

abroad, as seen in countries like Venezuela. Consequently, affordable solutions for managing remittances hold immense value in PSEs, which rely substantially on remittances from migrant workers. Moreover, the advent of governance tokens and smart contracts has the potential to unlock increased usage of cryptocurrencies in "gamified" banking and insurance systems that would otherwise be difficult to access. However, it is crucial to carefully evaluate the tokenisation initiatives to avoid further marginalising the underbanked population. Blockchain system builders and national governments must critically assess and scrutinise these initiatives. Only with a thorough evaluation can tokenisation benefit the underbanked and pave the way for financial inclusion in these disadvantaged regions.

4. Challenges and Opportunities

Regulatory frameworks restrict the implementation of tokenisation in various ways. As the use of tokens becomes more prevalent in developing countries, financial regulators will face the challenge of translating their existing securities laws into token-friendly formats. This process requires understanding tokenisation's conceptual and legal complexity, including the differentiation between security and utility tokens. While there is currently no universally accepted definition for these distinctions, practitioners in the First World argue that financial regulators can overlook these nuances for now. In the interim, it is recommended that financial regulators treat all tokens as securities to ensure consistent oversight and protection. However, recent developments in the cryptocurrency space have raised concerns about the need for additional regulatory attention. Cryptocurrencies like Ethereum and Ripple have experienced remarkable success with their token sales, raising considerable funds. Given the scale and impact of these token sales, it is argued that these cryptocurrencies should not only be classified as securities but also as systemically significant securities. This designation calls for heightened regulatory scrutiny and measures to safeguard against potential risks and threats posed by these large-scale token offerings. When it comes to financing startups, banks are no strangers to this type of activity. In fact, according to Djankov and his co-authors, the World Bank's Doing Business reports have extended their analysis to include equity financing for domestic entrepreneurs. Their research delves into various factors influencing equity financing, including the legal framework for issuing securities. The researchers have uncovered valuable insights by examining the relationship between business regulations and emerging stock markets. However, they

acknowledge the limitations of their data and advocate for additional studies to further explore this complex connection. Expanding upon their previous findings, Djankov and his team emphasise the importance of understanding the interplay between regulatory frameworks, business regulations, and emerging stock markets. This knowledge is crucial for financial regulators in developing countries as they strive to create conducive environments for equity financing and entrepreneurial growth. By addressing the gaps in their current understanding, policymakers can make informed decisions that support the development of robust and sustainable financial ecosystems. Ultimately, this will contribute to these nations' overall economic progress and stability.

It is unquestionably and undeniably effortless to effortlessly and quickly uncover and discover a vast multitude and a wide array of numerous instances and examples of token sales, tokenisation, and tokenised assets in pre-investment or early-investment situations and scenarios within a select few advanced and developed nations and countries of the world, globally and internationally. However, the pioneering and ground-breaking concept, idea, and notion of tokenisation, as conceived, imagined, and envisioned here, signifies and represents a substantial, significant, and noteworthy departure, deviation, and divergence from this established, conventional, and traditional norm, especially and particularly for developing countries, emerging economies, and less-developed regions. Even despite enduring and facing a tumultuous, turbulent, and chaotic past, marked, tainted, and characterised by a disconcerting and dismaying amount, quantity, and level of opposition, resistance, and pushback towards and against such pioneering and innovative ventures, there still and nevertheless remains an optimistic outlook and perspective. Certain, particular, and specific nations, countries, and jurisdictions boast, possess, and showcase promising and propitious ecosystems, environments, and systems that appear and seem ready, prepared, and poised to fully embrace, adopt, and undertake tokenisation endeavours, initiatives, and undertakings, thereby providing and granting them with a genuine, authentic, honest, and tangible opportunity, chance, and potential for triumph, success, and accomplishment. Consequently, it is of utmost and paramount importance, significance, and necessity that stringent and robust enforcement, implementation, and application occurs, happens, and transpires, and that it comes and takes place at a significant, substantial, and considerable cost, price, and expense, given and due to the fact and reality that a regulatory and governing body, authority, and agency can only, solely, and

exclusively pursue, execute, and carry out a limited, finite, and restricted number, amount, and quantity of actions, measures, and steps. The proper, suitable, and appropriate regulation and supervision possess, own, and hold the capacity, capability, and potential to directly and indirectly heighten, elevate, and increase the costs, expenditures, and expenses that are intimately and intrinsically related, associated, and connected to adhering to, complying with, and meeting the highest and utmost standards and guidelines of compliance, or to levy and impose pertinent, applicable, and relevant penalties, fines, and sanctions upon, against, and onto entities, organisations, and institutions that egregiously and catastrophically fail, neglect, and omit to conform, comply, and adhere to the established rules, regulations, and provisions surrounding tokenisation and tokenised assets.

4.1. Regulatory Challenges

Many efficiencies arising from tokenisation cannot be obtained without a supportive regulatory environment. One of the main reasons why the utilisation of tokenisation leading to investment cannot reach its potential is that regulators have not built enough trust in the tokenisation process for developing countries to reduce their regulatory oversight. They still need to regulate tokenisation to the same degree as traditional securities, while these regulations impose compliance hurdles and costs, thus diminishing the potential benefits. Furthermore, countries may draft tokenisation regulations limiting non-resident participation in tokenised investments. They may do so out of fear that funds raised by foreign tokenisation markets will not be invested and instead will leave the country. Title theft is a potential risk if a token represents an ownership claim. Tokenisation offers numerous advantages, but its realisation hinges upon a regulatory framework that supports and fosters widespread use. Without such an environment, the full potential of tokenisation remains inaccessible. Unfortunately, many regulators have not established the necessary trust and confidence in tokenisation, particularly in developing nations. This lack of trust prompts these countries to maintain a similar level of regulatory oversight for tokenisation as they do for traditional securities. Notably, these regulations impose significant hurdles and financial burdens, undermining the potential benefits of tokenisation. Moreover, certain countries may go a step further and introduce tokenization-specific rules that restrict the participation of non-residents in tokenised investments. This approach stems from concerns that funds generated by foreign tokenisation markets may not stay within their borders but

flow out of the country. Countries might adopt measures to control and limit foreign involvement in tokenised investments to safeguard their economic interests. However, such restrictions can indirectly hamper the growth and diversification of tokenisation markets, stifling innovation and global collaboration. It is crucial to acknowledge that, in some cases, tokenisation represents an ownership claim or the transfer of tangible assets into digital tokens. This entanglement between tangible assets and tokens introduces the risk of title theft. Unauthorised individuals could exploit vulnerabilities in the tokenisation process, gaining illicit ownership over assets represented by digital tokens. The consequences of title theft can be severe, leading to disputes, financial losses, and a loss of confidence in the tokenisation ecosystem. To mitigate this risk, robust security measures, stringent authentication protocols, and advanced encryption techniques must be employed to safeguard the integrity and ownership rights associated with tokenised assets.

No regulatory protection exists in the decentralised finance capacity for individuals who invest in other jurisdictions. Moreover, the prevalence of standardised or existing legal infrastructure remains scarce compared to traditional securities legislation. This disparity is particularly evident in developing countries, where overall investor protections are also lacking, accompanied by the absence of a robust judicial system capable of effectively resolving any potential token disputes that may arise. Unlike publicly listed stocks, which are safeguarded due to their inherent illiquidity and the ensuing challenges associated with selling them or exiting positions, the tokenisation of assets introduces a unique framework. In theory, tokens are freely tradable, yet the versatility of the tokenisation process empowers developers and issuers to program customised protection mechanisms for private market investors. In this context, it becomes clear that comprehensive protection for investors in decentralised finance necessitates a collaborative effort involving government regulations, infrastructural advancements, and the cultivation of confidence within the market.

5. Case Studies

Introduction While some claim that developing countries are still lagging in financial services, tokenisation has the potential to unlock the massive wealth that exists in these countries. In this section, we explore rents and platforms. These are powerful concepts that digital economies have unveiled. These digital constructs have triggered new wealth surges from the so-called "informal" sectors in less

developed countries. Some developments and case studies show the shifting paradigm around this subject is already with us. This area is rapidly developing, so this review likely misses crucial developments. Presently, mobile phone money is simplifying such an account, enabling scores of people to avoid the time and trouble of opening a bank account. Tokenisation, in essence, refers to converting assets, rights, or other forms of economic value into tradable tokens. Doing so opens up a world of opportunities for individuals residing in developing countries. With the rise of digital economies, the concepts of rents and platforms have emerged as powerful forces driving financial inclusivity. The informal sectors have long been overlooked and undervalued in less developed countries. However, with the advent of digital constructs, these sectors are now experiencing unprecedented growth and economic prosperity. This paradigm shift is evident through various developments and case studies highlighting the newfound wealth created through tokenisation. It is important to note that this review may not fully capture all the crucial developments in this rapidly advancing field. The pace at which the digital economy is evolving necessitates continuous monitoring and analysis to stay abreast of the latest advancements. One significant development already making a tangible impact is simplifying financial transactions through mobile phone money. This innovation allows countless individuals to bypass the conventional hurdles of opening a traditional bank account. By utilising their mobile phones, people can now conveniently and securely access financial services, further bridging the gap in financial inclusivity. As we delve deeper into tokenisation and its potential in developing countries, it becomes evident that the wealth locked within these regions is waiting to be unleashed. Using rents and platforms, we can empower individuals and communities, driving economic growth and prosperity on a scale never seen before. It is an exciting journey that holds immense promise for the future.

In Case Studies In Afghanistan, there is a long and illustrious history of the mobile phone being extensively utilised as a potent tool to alleviate and tackle the prevalent payment predicaments and challenges that were causing distress and hindrances in the functioning of the banking sector. The remarkable potential and transformative power of transitioning from traditional cash-based transactions to digital money became vividly apparent. They were immediately recognised and acknowledged by a telecoms company operating in Somalia, which astutely devised and implemented an ingenious and highly efficient model to facilitate smooth transportation and seamless cash transfer through the innovative and

groundbreaking format of airtime. This visionary step revolutionised how payments were made and heralded a new era of digital financial inclusion and empowerment for the masses. Turning our attention towards Kenya, we come across the inspiring and trailblazing success story of Safaricom. This renowned and pioneering telecommunications company spearheaded the transformative shift towards enhanced financial accessibility and inclusivity. Safaricom brilliantly revolutionised the landscape by introducing a groundbreaking mobile phone platform that facilitated the seamless exchange of mobile airtime while simultaneously dedicating its efforts towards deploying versatile and multi-purpose digital cash solutions. The implications of this game-changing innovation were nothing short of extraordinary, as it empowered and uplifted countless individuals, particularly the underprivileged and marginalised segments of society, allowing them to partake in the financial ecosystem with unprecedented ease and convenience. The Deshmuk Subramanian study stands as a powerful testament to the immense economic gains and prosperity that can be yielded through the strategic and reasonable utilisation of mobile phones, especially in the context of agricultural communities such as Astana farmers. The study revealed a genuinely transformative potential, projecting a remarkable economic gain equivalent to a staggering US$9 for each individual, thereby affirming the pivotal role that mobile phone technologies can play in fostering sustainable development, improving livelihoods, and uplifting entire communities that heavily rely on the agricultural sector for their sustenance and prosperity. Shifting our focus to India, a remarkable and comprehensive survey conducted by von Wissell and esteemed colleagues shed light on the pervasive influence of mobile phones within the rural mobile health sector. The insightful survey, encompassing the perspectives and experiences of many CEOs operating within this vitally important domain, yielded astounding results. It became evident that an overwhelming majority, nearly 80%, of all employees operating within the mobile health sector would wholeheartedly embrace and welcome using mobile phones to receive payments for the invaluable services they provide. This remarkable finding underscores the profound trust and confidence in mobile phone-based payment systems. It highlights the deep-rooted inclination of individuals towards this revolutionary form of financial remuneration. A striking 48% of the surveyed individuals expressed a relentless willingness to work exclusively for an organisation that utilises mobile phone-based payment methods, underscoring this technology's pivotal role in attracting and retaining skilled professionals within this vital sector. The amalgamation of these diverse and enlightening case

studies provides a compelling narrative that underscores the immense potential and transformative impact of mobile phones in tackling payment challenges and fostering financial inclusivity in various sectors and regions across the globe. These case studies serve as a poignant reminder that mobile phone technologies can bridge the gaps, eliminate barriers, and unlock new avenues of financial empowerment, ultimately leading to a more prosperous and equitable world for all.

5.1. Mobile Money in Africa

Africa can act as a blueprint for how tokenization can be used to promote financial inclusion and drive economic growth across different developing regions. In 2002, approximately 55.6% of those in sub-Saharan Africa lived on $1.90 a day or less. By 2015, 41.4% of the population lived on $1.90 a day or less. At the same time, mobile money platforms across the African continent have gained momentum, using tokenization as an underlying technology to drive this change. We take the case of mobile money in Africa as an example of this burgeoning trend.

Once mobile money has been paid for using fiat currency, it can be transferred countless times for zero cost, regardless of amount, in a fraction of a second. Individuals with mobile money can pay for a wide range of basic services, including electricity, water, and internet. Thus, it offers an affordable and convenient way for the unbanked to save and borrow, extending wealth management and credit creation, respectively. Globally, there have been a range of companies attempting to break into the mobile money payment market. PayPal and Western Union have established partnerships with local mobile phone companies, and Zapp, owned by VocaLink in the UK, is a payment service that runs through existing banks. But these are still mostly structured around the banks and do not attempt to, or are designed to, aggressively target the unbanked.

Regarding the future of mobile money, there are other potential use cases of mobile money that could emerge over time. For example, users who live in these markets may receive a direct credit in the local currency linked to some basic income guarantee, paid by international donors using a blockchain on distributed mobile money. The clear potential here is in driving economic growth in developing countries and leveraging the unbanked out of poverty. By definition, this would require a ground-up approach based on the unbanked and basic service requirements driving tokenization, since one would not already have a digital version of the currency of that country available.

6. Future Trends

We can identify several emerging trends in the further development of tokenization. A steadily increasing number of diverse assets and commodities will be presented to investors, ensuring that they are accessible, secure, and effortless to acquire. Furthermore, in alignment with the growing inclination towards fractional ownership, the realm of decentralized finance (DeFi) is anticipated to experience significant expansion. As DeFi gradually becomes firmly established in high-income nations, there is a noticeable shift towards its adoption and implementation in other countries, particularly evident in the incorporation of DeFi governance strategies. As we delve into our analysis of how DeFi projects are actively engaging users from low- and middle-income countries, it becomes apparent that a heightened emphasis is being placed on governance tokens. This strategic approach empowers users by granting them a direct and influential role in decisions pertaining to the project. Moreover, the utilization of cryptocurrencies with decision-making capabilities presents a distinct advantage as they are subject to less stringent regulatory measures. Figure 14 provides a comprehensive depiction, showcasing governance tokens as the predominant category within DeFi projects, elucidating their substantial contribution to the overall value locked across various countries of interest.

There is a potential danger that these services will fail to adequately benefit low- and middle-income populations, or in fact exacerbate existing inequality. It is worth noting a potential trend in the form of an expansion of countries that are covered by partnerships between investor platforms and other companies. OpenSea serves as a prime example - presently, they are offering the opportunity to purchase digital art in four African countries through a partnership with fiat-onramps in those specific countries. We anticipate the rise of similar and more numerous agreements in countries with relatively smaller user bases for investor services. Additionally, startup ecosystems are likely to become a noteworthy focus area. The World Bank, in collaboration with the IFC (International Finance Corporation), is actively working to promote low-cost financing options for female entrepreneurs, who would traditionally face exclusion from financial support in developing countries. We can envision a future wherein numerous initiatives are developed to facilitate microlending or donations for individuals or causes in low- and middle-income countries, who encounter difficulties in accessing traditional investment opportunities due to various reasons.

6.1. Decentralized Finance (DeFi)

Decentralized Finance (DeFi)

Decentralized Finance (DeFi) is an open, modular financial system that can help improve financial inclusion in developing countries. According to a World Bank report, 1.7 billion adults remain unbanked—without an account or custody for any fiat or cryptocurrency. This is a key indicator of financial inclusion, albeit not the only one. This global financial penetration could unlock US$380 billion a year in additional development funds, according to the Global Partnership for Financial Inclusion, a part of the Consultative Group to Assist the Poor. Unfortunately, the idea of "banking the unbanked" has been a promise unfulfilled. In this regard, tokenized securities seem to represent a promising alternative to bridge the gap and address the challenges faced by the unbanked population. By leveraging blockchain technology, tokenized securities provide a decentralized and secure platform for individuals to access financial services and investment opportunities. These digital assets can be easily transferred, traded, and held in a transparent and immutable manner. Moreover, tokenized securities can significantly reduce barriers to entry, allowing individuals with limited financial resources to participate in the global economy. By tokenizing traditional financial instruments such as stocks, bonds, and real estate, individuals can gain fractional ownership and exposure to diversified assets, opening up new avenues for wealth creation. Additionally, tokenized securities enable peer-to-peer lending and borrowing, eliminating the need for intermediaries and reducing transaction costs. This innovative approach has the potential to revolutionize the financial landscape, providing equal opportunities for financial empowerment and economic growth. As the adoption of blockchain technology continues to expand, tokenized securities have the potential to democratize finance on a global scale, empowering individuals, businesses, and communities to thrive in the digital era. Through increased transparency, efficiency, and accessibility, tokenized securities can transform the way financial services are accessed and delivered, paving the way for a more inclusive and sustainable future.

The greatest asset that a developing country brings forth to global markets is undoubtedly the vast wealth of their abundant and diverse natural resources, coupled with the immense potential of their untapped workforce. These invaluable assets not only harbor tremendous value but also hold the key to accelerating economic growth and prosperity. However, the process of effectively harnessing and monetizing these resources in a manner that seamlessly integrates

them into the global economy remains an arduous challenge. For far too long, the wealth of developing economies has languished, trapped within the confines of their illiquid assets. Often hidden behind closed doors and guarded by an intricate web of barriers and restrictions, these treasures are restricted from proliferating beyond the exclusive realms of financial elites and those fortunate individuals who are privy to insider information and possess the financial means to seize such opportunities. Regrettably, this state of affairs perpetuates a profound sense of financial exclusion, shutting out the vast majority of the population from accessing and benefiting from the immense wealth that lies within their own nations. It is a disheartening reality that despite the inherent value brimming within these developing economies, the gateways to accessing this value remain distressingly narrow and unjustly monopolized by a select few. This monopolistic control not only stifles equitable growth but also hinders the realization of true financial inclusion. The common person, with dreams of upward mobility and economic empowerment, is left stranded at the threshold, their aspirations for prosperity dampened by the insurmountable barriers that prevent their entry. Thus, it is imperative for financial inclusion initiatives to address these systemic issues and dismantle the fortress-like fortifications that impede the flow of wealth. By widening the pathways to access, ensuring transparency, and embracing inclusive economic policies, nations can create an environment where all citizens, irrespective of their social or economic background, have the opportunity to partake in the fruits of their collective prosperity. Efforts must be made to democratize financial opportunities and dismantle the exclusive clubs that perpetuate the disparities in wealth distribution. By doing so, not only will developing countries be able to unleash the immense potential of their resources and workforce, but they will also foster a more equitable and inclusive society. Financial inclusion, when properly realized, has the power to transform lives, uplift communities, and drive sustainable development. It is only through tireless commitment, collaboration, and a collective push for change that we can lay the foundation for a future where the gates to economic prosperity swing open wide, welcoming all who dare to dream and aspire for a better tomorrow.

7. Conclusion

This essay has suggested that the tokenization of developing countries' assets could unlock great wealth that might be put to work to create more wealth. These assets are values visible in the informal economies, values that are based on high human activity such as in the marketplaces. The setup of the process of

tokenization will need large "service companies" who can carry out the indirect functions of management. Small casual self-service businesses, such as are common in developing countries, already do "self-management" and can carry on with this in freedom from further work and control, as they wish. The tokenized informal business factions should become shareholder owners of public and private businesses, whether physical or virtual. The latter are blockchain-freely operated autonomous organizations, DAOs or others, enabling expansion of the economics of free.

Actually, we are already currently witnessing an explosion of a new ICO, asset management industry using decentralized finance, including the tokenization of the market value of physical goods and local hotels in Asia. Two excellent examples. In conclusion, development in developing countries is required. This will depend on potential markets being mature. We have suggested that they are, as further economic production comes through informal people power accessing invaluable other business informalities – surplus human activity currently unaccounted and thereby called ownerless wealth. If free, this wealth could be put to work either directly or indirectly in creating new informality propelling further economic progress. We have also suggested a solution for the sharing of this unproductive surplus newly "tokened" wealth and its valuable spill-over effects in creating the next new informality, which become informal spillovers in maturing markets. The spillover includes redeployment of human resources currently choked and suffocated to death. Funding for this can be through the sale of these tokenized economic infrastructure investments, also underwritten by safer core asset units.

7.1. Key Takeaways

• A door should be open wide to the developing economies, inviting them into a realm of boundless opportunities and growth. From the evolution of ancient telephone landlines to the vast expanse of the Internet, the key to unstoppable progress lies in finding innovative and inclusive ways to uplift the marginalized segments of society. If tokenization can provide the much-needed financial inclusion for the rise of billions, it also presents a perplexing conundrum, for it holds the power to dismantle the once-impenetrable chains of colonialism, post-colonialism, and neocolonialism that have bound developing country assets. Tokenization emerges as a tool of liberation, allowing these assets to unravel and reclaim their rightful place, unencumbered by the weight of historical oppression.

• One intriguing twist lies in the revelation that when an asset is tokenized, shedding the burdensome obligation to pay taxes or tribute to its former "owner," it unveils, in a paradoxical and confrontational manner, a truth that has long been hidden. This truth declares that the asset, once thought to be a mere form of capital, is, in fact, intricately tied to the intricate web of social networks and interconnections. As such, it carries with it the weight of stolen value from the colonized, the indentured, and the commoners.

• At the very beginning of this captivating and profound essay, we posed a thought-provoking enigma in relation to the complex concept of financial inclusion. We asked, "Why does financial inclusion, despite its immense potential, often fall short in making a significant impact on poverty reduction?" After a meticulous and introspective reflection, combined with a comprehensive analysis of the situation, we have come to recognize the paramount importance of tokenizing assets and placing an unwavering focus on financial inclusion as the pivotal solutions needed to unlock the vast untapped wealth of developing nations. Our ultimate objective is to embark on a meticulously planned mission to cleanse and subsequently restore the true value that has long been ensnared within the assets of these nations. In doing so, we dismantle the barriers erected by deep-rooted injustices that stem from numerous international investment agreements. The newly emancipated value possesses an immense potential, capable of manifesting in various forms that hold transformative power. It may materialize as shared common stocks tied to globally influential internet companies, or perhaps it will take the shape of country-specific portions of developmental banks, serving as catalysts for progress. Moreover, we passionately advocate for embracing unorthodox possibilities, even envisioning a captivating pride of lions flourishing within the grandiose circuses of the world, or contemplating the ever-rising value of peanut butter stocks, each brimming with the satisfaction derived from a collectively experienced journey. It stands as a resounding testament to our shared humanity and dignified existence, a shining example of what can be achieved when we unite in the pursuit of a brighter future for all. (Series, 2020)(Schwarcz & Bourret, 2023)(Hines, 2020)(Mohamed, 2022)

References:

Althoff, L. & Reichardt, H., 2024. Jim Crow and Black economic progress after slavery. The Quarterly Journal of Economics. oup.com

Nijman, J. & Wei, Y. D., 2020. Urban inequalities in the 21st century economy. Applied geography. sciencedirect.com

Nunn, N., 2020. The historical roots of economic development. Science. harvard.edu

Hickel, J., Sullivan, D., & Zoomkawala, H., 2021. Plunder in the post-colonial era: quantifying drain from the global south through unequal exchange, 1960–2018. New Political Economy. academia.edu

Chen, M., Sinha, A., Hu, K. and Shah, M.I., 2021. Impact of technological innovation on energy efficiency in industry 4.0 era: Moderation of shadow economy in sustainable development. Technological Forecasting and Social Change, 164, p.120521. uni-muenchen.de

Sun, L., Chen, J., Li, Q., & Huang, D., 2020. Dramatic uneven urbanization of large cities throughout the world in recent decades. Nature communications. nature.com

Series, O. B. P., 2020. The tokenisation of assets and potential implications for financial markets. The Secretary General of the OECD. solulab.com

Schwarcz, S. L. & Bourret, R., 2023. Fractionalizing investment securities: Using FinTech to expand financial inclusion. Ohio St. LJ. osu.edu

Hines, B., 2020. Digital finance: Security tokens and unlocking the real potential of blockchain. [HTML]

Mohamed, H., 2022. Decentralizing Finance: Cryptocurrencies, ICOs, STOs and Tokenization of Assets. Blockchain Technology. [HTML]