An In-Depth Analysis of the Implications of Implementing Digital Currencies within Developing Economies: Evaluating their Potential Contributions to Financial Inclusion, Economic Development, and Socioeconomic Mobility

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Abstract
This paper examines the role of digital currencies in fostering financial inclusion and economic development, particularly in developing economies. Through an analysis of various digital currency forms—cryptocurrencies, Central Bank Digital Currencies (CBDCs), stablecoins, and utility tokens—the study evaluates their potential to streamline financial transactions, reduce costs, and offer secure financial services to marginalized communities. The integration of these technologies in developing regions is facilitated by the rapid digitization of financial services and the widespread adoption of mobile technology, making digital currencies a viable alternative to traditional financial systems. The paper highlights the economic benefits of digital currencies, such as enhanced business operations, international investment attraction, and stimulation of domestic economic growth across crucial sectors. Socially, digital currencies promise greater equity in financial access, potentially serving as catalysts for social and economic advancement, particularly for those in lower-income or marginalized regions. However, the success of digital currencies in achieving these outcomes is contingent upon robust infrastructure, effective regulatory frameworks, and strategic implementation to prevent exacerbating existing inequalities. The conclusion underscores a mixed potential impact on financial inclusion, indicating that while digital currencies offer significant opportunities for socio-economic development, their effectiveness is heavily dependent on addressing infrastructural and governance challenges. Future strategies should focus on ensuring that digital currency adoption aligns with broader economic and social goals to fully harness their transformative potential.

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Introduction

In recent years, the advent of digital currencies has signaled a transformative shift in the financial landscapes of economies worldwide, particularly within developing nations. This form of currency promises to redefine the modalities of monetary transactions and provide unprecedented opportunities for economic development and financial inclusion. This paper seeks to create a comprehensive understanding of what those opportunities are, how they are measured, and the likelihood that the mass adoption of these currencies creates the positive effects that they were designed for. The paper focuses on the potential contributions of these currencies to enhancing financial inclusion, fostering economic development, and facilitating socioeconomic mobility.

The rapid digitization of financial and intermediary services as well as mobile technology has fostered the ability of digital currencies to serve as a long-term realistic alternative to current forms of fiat currency. Further, the rapid development and technological integration of developing economies under globalization have allowed for the adoption of digital currencies to become a dominant driver of macroeconomic policy. For populations marginalized by conventional banking systems, digital currencies propose viable solutions to bypass

geographical and socioeconomic barriers. This paper will explore how these currencies can democratize financial access, thereby integrating an underserved portion of the global population into the formal economy and slowly transitioning away from the widespread use of informal markets in developing economies.

The role of digital currencies in economic development provides the largest, and most avid contributor, to continued funding of research related to integration and viability of this unique store of value and medium of exchange. By reducing transaction costs and increasing transaction speed, these currencies have the potential to enhance business operations, attract international investment, and stimulate domestic economic growth across a multitude of key sectors. This analysis will extend to understanding how digital currencies can contribute to more dynamic financial markets and more resilient economic structures in developing countries.

Finally, rising levels of economic inequality worldwide have created concerns among policymakers and global citizens on the handling of existing inequities on a path to increased social and economic welfare. By providing more equitable access to capital and financial services, these currencies could serve as a catalyst for social and economic advancement, particularly for those in lower-income or marginalized regions. Through an exploration of various case studies and empirical data, this paper will assess whether digital currencies can fulfill their promise as tools of social change in developing contexts.

Forms of Digital Currencies

The term Digital Currency has been rather deprecated in recent years with various forms of digital currencies being released and accessible to the global population. The most commonly known form is cryptocurrency. This term refers to decentralized digital currencies like Bitcoin and Ethereum. They operate on blockchain technology which ensures transparency and security of transactions. In developing economies, there is evidence that Cryptocurrencies could provide access to financial services for the unbanked and underbanked populations potentially boosting economic participation.

Another key form of digital currencies is Central Bank Digital Currencies. These are currencies operated by a Country's central bank. CBDCs aim to provide a digital alternative to physical cash, combining the convenience and security of digital forms with regulated, reserve-backed money circulation of traditional banking. These currencies could play key roles in enhancing monetary policy effectiveness and financial stability in developing nations.

A key subset of digital currencies that are also viable options for emerging market economies are Stablecoins. These are cryptocurrencies that are pegged to a stable asset like the U.S. dollar or gold to minimize price volatility. Stablecoins can take on the role of facilitating remittances, reducing transaction costs, and serving as a stable medium of exchange. These characteristics could offer Stablecoins as an effective tool for mitigating the effects of volatile currencies in some developed economies.

The final important subset of digital currencies is Utility Tokens. This refers to a digital asset that gives its user access to a specific market for certain products and services offered within that market. These tokens serve as mediums of exchange within these designed markets and are optimized to facilitate transactions within that specific ecosystem.

Previous Research

There is a plethora of previous research surrounding digital currencies and applications of such currencies to market inefficiencies worldwide, particularly in developing regions where mass digital adoption may be more likely in the construction of the financial system. Firstly, previous research discusses the direct effects of cryptocurrency implementation on various direct economic factors in the digital economy globally. Key reasoning for the value derivation of a digital currency as a key driver of increased popularity is brought up to be related to volatility and with issue volume and the growth of the crypto market as a whole (Hordiienko et al., 2022). The economic reliability of these digital currencies is also relevant in that a higher level of trust can be placed in these currencies in times of perceived weakness or untrustworthiness in central banks. This level of trust also extends to the use of digital currency-related technology which is actively changing the banking sector to cut out middlemen normally associated with retail and commercial banking. This represents a global shift in the management of credit creation and monetary policy (Raskin et al., 2018). Further, the perception of such currencies as digital payment methods can be associated with ease of use ease of use, personal innovation, and perceived usefulness which have a favorable impact on individuals' attitudes toward adoption in developing regions (Bhuyian et al., 2024). Research has also shown that digital currencies and mobile technologies are seen as pivotal tools to integrate the underserved into the financial system, with ongoing challenges necessitating tailored regulations, innovative business practices, and proactive civil society engagement to ensure effective inclusion and consumer protections (Sapovadia, 2018).

CBDCs are also a very well-researched topic with key inclusion principles applied to multiple scenarios and situations in developing economies. The majority of research relates to adoption principles and frameworks for implementation in these economies which motivates specific forms of monetary policy or mass adoption by citizens of the respective nation. Over 90% of countries are actively researching or implementing a form of a CBDC (Ma, 2023). CBDCs can alleviate financial inclusion for underbanked individuals in developing regions and offer a more efficient payment option for various financial transactions, reducing criminal and market-untraceable activities while providing stimulus funding during crises (Ozili, 2022). The possibilities of CBDCs

have supported research on the macroeconomic effects of CBDC adoption, resulting in expectations that they can boost real GDP levels (Bordo et al., 2017). Also, there has been evidence that the best design of CBDCs involves balanced preferences for anonymity and security for users (Agur et al., 2022). In developing economies, the adoption of CBDCs also presents multiple risks. While CBDCs can promote financial inclusion and provide secure digital payments, there are challenges related to infrastructure and regulation when attempting to implement them (Solis et al., 2022). Overall, the literature on CBDCs in developing economies focuses on their potential to enhance financial inclusion, improve payment systems, and support economic growth. However, previous research also warns that successful implementation requires careful consideration.

Stablecoins present an interesting field of previous research due to their unique representation of digital assets related to traditional forms of fiat currency for a derivation of value. In the context of developing economies, studies have investigated the potential of blockchain technology to reduce the costs associated with remittances, which could significantly impact cross-border transactions in developing economies (Rühmann et al., 2020). Furthermore, stablecoins have been analyzed for their role in improving financial inclusion in developing economies. Research has focused on whether stablecoins can enhance financial inclusion by utilizing token-based digital currencies and their IT capabilities (Kim, 2023). Stablecoins have also been considered for use in the context of digital trading and investment platforms, providing new opportunities for individuals to participate in financially beneficial activities(Travkina et al., 2022). In this form, stablecoin-based platforms could create alternative channels for economic transactions, particularly in regions facing limitations due to external pressures or regional disputes.

Utility Tokens' wide variety of use cases also brings about interesting variations of previous research. Primarily, research has looked into the dual financial incentive of utility tokens which is their role in reducing transaction costs and increasing functionality, awareness, and acceptance within economic activities (Drasch et al., 2020). Tokenization also offers opportunities for improved administrative and financial efficiency through automated processes, enhanced monitoring, and reduced financing costs. Multilateral Development Banks (MDBs) are suggested to spearhead efforts in establishing a standardized global network that facilitates cross-border transactions, transparent advisory services, and improved financial interventions through tokenization. For private finance, tokenization can boost investor confidence by enhancing liquidity, providing access to smaller projects, and attracting a wider range of investors to participate in infrastructure development (Tian et al, 2021).

Economic Effects

The primary positive and negative economic effects vary across the different forms of digital currency. Firstly, cryptocurrencies, particularly stablecoins, have the potential to enhance financial inclusion in emerging markets by providing faster and cheaper transactions, as well as enabling direct peer-to-peer exchanges (Vincent 2019, Calabia 2020, Ohnesorge 2018). Vincent, in the study of China, India, Nigeria, and South Africa for the period 2009–2017, finds that cryptocurrency, internet usage, and mobile subscriptions have a significant positive relationship with financial inclusion and financial sector development. This conclusion is verified through a causality analysis. Essentially, by enabling transactions without a traditional bank account, cryptocurrencies can help more people access the financial system. Also, the blockchains in which these currencies are built bring about increasingly complex initiatives and expectations for economic effects in developing regions. A study by the International Finance Corporation of The World Bank found that emerging markets display a promising ecosystem for the adoption of blockchain technologies, driven by high demand for financial inclusion among underserved populations and as a strategy to mitigate risks from currency instability and political upheaval, notably in regions like Latin America and Africa. In addition to established predictive market structure factors, successful technology penetration also hinges on the development of the technological ecosystem and skill availability, capital access for innovators, and a regulatory framework that supports experimentation and public-private partnerships (Niforos, 2017).

However, stablecoins, because of their inherent link to other forms of fiat currency, can hold implications for developing regions' citizens. Firstly, transaction fees may be implemented to conduct transactions between different vendors by the managers of the line. Furthermore, the bid-ask spread on stablecoins may be taken in percentage by the seller. This may deter poorer consumers, those who primarily reside in developing economies, from adopting this form of payment with possibilities of high losses of value in movement from traditional to digital currencies and back. However, research indicates a possible solution would be to pay interest on this form of currency as an incentivization for limiting inter-currency type movements by these consumers (Calabia, 2019). Also, infrastructure development in the emerging market economy contains an equal motive. Specifically, a quick processing speed will indicate quick transactions and exchanges at the rate of physical currency for lower-income business owners who require access to the capital they make immediately. Without this, digital payment alternatives present an already fulfilling gap regardless of the implementation of stablecoins.

CBDCs provide a multitude of benefits and cautions when under consideration of their economic effects. From one standpoint, there is the possibility of a positive effect rollover from developed economy adoption of CBDCs on developing and emerging economies. The adoption of central bank digital

currencies (CBDCs) by advanced economies like the United States, the United Kingdom, and the Euro Zone poses significant implications for emerging countries, offering benefits such as reduced costs for international transactions, including remittances by immigrants. However, challenges such as currency substitution, sudden depreciation, and reduced seigniorage also arise. Therefore, a successful global rollout of CBDCs requires robust international coordination (Edwards, 2021). These remittances are a significant part of personal income in some economies and therefore, reduced costs can increase incoming foreign investments into developing economies. From an alternate perspective, the implementation of a CBDC directly by a developing economy gives rise to positive monetary policy effectiveness to continue to rapidly encourage growth and the use of debt to effectively finance industrial and technological expansion. However, this CBDCs value derivation and use domestically may not translate to its facilitation of international exchanges which may reduce viability for implementation in high export-driven countries, which most emerging and developing economies are characterized as.

Utility Tokens present one of the most interesting approaches to economic viability in emerging market economies. A utility token may take on the role of a viable substitute for capital funding. Specifically, a utility token, when applied to an emerging market and developing economy may actually alleviate private sector confidence and enthusiasm by improving asset liquidity for infrastructure products. This would help create access to small-scale projects for infrastructure development (Tian et al., 2021). A plethora of research has shown that increased infrastructure development is positively correlated with economic growth. On top of this, the specific application to developing economies means that besides infrastructure, these utility tokens can create internal efficient systems that incentivize the growth of the network which they already are a part of. In doing so, as the demand for the services which these tokens support grows, the volatility in price decreases, and economic stability is implemented with scale. This would allow for sustainable effects to take place economically from these tokens.

While specific effects as discussed previously are very beneficial, the general movement to digital currencies presents positive effects as well. One of the most interesting economic arguments previously presented is the convergence of central bank policies with a shift to an internationally accepted digital currency. A study of 42 currencies indicated a conflicting divergence due to vulnerability analysis due to clear differences in credit ratings between developing and developed economies which gives limited leeway to easing in macro use cases. For this reason, an international currency could be treated as another form of a singular currency (Proettel, 2019). However, convergence to a singularly accepted international digital currency with a similar global central banking policy could facilitate trade through lowered transaction costs, build upon financial inclusion by integrating severely underbanked populations into borrowing environments, stabilize exchange rates which emerging economies struggle with due to volatility in their growth which would allow for greater cost and revenue predictability and stability for medium-sized and large-sized businesses domestically, and managing monetary policy globally in response to similarly affecting supply shocks to developed and developing economies.

However, general acceptance of a digital currency also brings about a key implication in the case of a movement away from a centralized international currency. A quite interesting argument is with regard to competition in economic markets. Financial markets are inherently guided by competition. From a national standpoint, developing nations, those countries with growing strength in a national currency but non-dominant, stand to gain the most in terms of financial strength from their digital currency implementation (Cong & Mayer, 2021). This clearly indicates a strategic competitive advantage to a quick launch of a currency whose long-term development goals are still quite unclear. However, the increased buying power as a result of increased market share in the global currency market gives access to increased access to foreign goods and luxury goods, giving members of the host developing country a step up in terms of quality of life. However, a continuation of competition with national fiat currencies, cryptocurrencies, and other CBDCs warrants concern for stability in the volatility of the continued strength of the digital currency without a substantial increase in macroeconomic stability.

Social Effects

Interestingly, a commonly known conception of digital currencies is referred to as the democratization of the value of the currency itself into the hands of the users. However, the measure of the social impacts of this access to the user is quite broadly defined across the various digital currency forms. Furthermore, developing countries usually fall on two ends of a spectrum in terms of social benefits with a multitude of opportunities yet a large number of problems. Most countries experience high levels of social inequality with the key differentiating factors being access to education, healthcare, and upward mobility-focused economic activities. Furthermore, high levels of poverty, low-quality or underdeveloped infrastructure, and limited access to essential services make social divides even larger. Finally, in terms of governance structure, politically, corruption can commonly be rampant and there may exist low levels of trust for the existing governing bodies by a lot of the underserved population. This in turn inhibits social progress for these individuals. However, there are general ways each form of digital currency can ideally assist in the social development of underserved populations within these countries.

Firstly, with general cryptocurrencies, because the value of the asset is derived from the users of the asset rather than a centralized governing body, community empowerment through

a movement away from corrupt governing bodies and taking economic power over currency adoption, movement, and payment into the hands of the consumers, giving them an alleviated socioeconomic place in making the decisions. Further, a rather indirect but important effect of adopting cryptocurrencies in developing economies is the educational awareness needed on the form of the cryptocurrency which requires an alleviated education into technology and financial literacy. This inherently increases the educational awareness and general understanding of personal finance for the population to which it serves. Finally, cryptocurrencies can also increase social inclusion. Because cryptocurrencies use a digital wallet, they require access to a mobile device in order to be used in a market economy efficiently. For this reason, marginalized groups would inherently be placed in a position of greater social responsibility with control over their own economic environment and assets and have access to increased technology which would create greater social inclusion.

Several social impacts can also be drawn from stablecoins. Firstly, stablecoins can provide social stability to places of volatile social structures. This is particularly relevant in regions where social structures are defined directly from economic structures in a hierarchical form but the economic structures are constantly changing due to macroeconomic or microeconomic factors. Examples of such regions are those that are going through hyperinflation, economic instability, or financial reform. Explicit examples include Venezuela, Argentina, and Zimbabwe. Second, stablecoins can provide socio-economic stability and growth to migrant populations in developing economies as well as border populations. Specifically, by nature, stablecoins provide access to a pegged currency with the asset, and because usual exchanges with differing currencies would require transaction costs to change between the foreign and domestic currency for those conducting the transaction, stablecoins necessarily create an easier and widely accepted form of payment as a store of value about another currency. As a result, migrant populations with large levels of remittances being sent to families as well as border populations conducting trade would be the most beneficially affected.

When it comes to utility tokens, there are a number of positive social effects that they can provide. Firstly, because utility tokens can be applied to specific ecosystems, they can be used to provide access to digital platforms and services not easily offered in other ways, such as decentralized marketplaces or exclusive content platforms, which enhances the social connectivity of the community it is implemented within. Furthermore, utility tokens can enhance the civic responsibility of a user. Since in platforms that use utility tokens for governance, users have the opportunity to participate in decision-making processes, fostering a sense of ownership and civic engagement. This is relevant in developing countries especially since the corruption mentioned previously can disengage and alienate local populations who are underrepresented or unrepresented in domestic governments. Finally, utility tokens can lead to the formation of social networks. Utility tokens can connect communities based on common interests and economic activities, giving way to innovation and bridging traditional cultural and geographic divides.

CBDCs also can have a large number of social effects. The first of these is increased trust and governance. Since CBDCs come directly from the primary federal financial institution, they can enhance trust in financial systems by offering a government-backed, reliable digital currency, which can be particularly impactful in countries with less stable financial conditions. Also, by providing universal access to banking services, CBDCs can help reduce economic disparity, allowing lower-income groups better access to financial services that they may have previously had the ability to obtain but lacked a form to conduct. Lastly, the implementation of CBDCs drives the modernization of financial infrastructure, which can lead to broader social benefits, such as improved public services and greater governmental transparency.

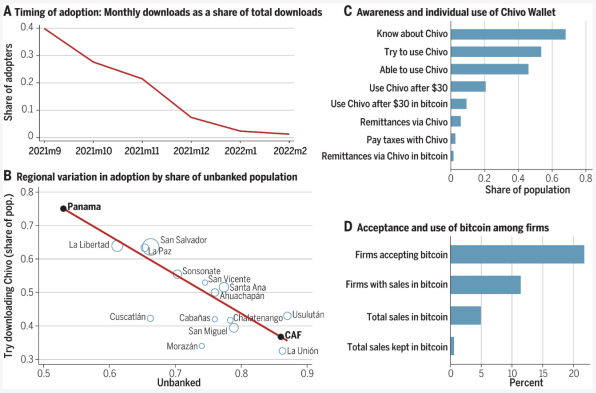
Latin America and the Caribbean Review

Latin America and the Caribbean (LAC) encompasses a diverse array of developing economies. These nations have faced historical economic challenges, including inflation, debt, and political instability, which have significantly impacted their growth trajectories. Despite this, LAC has continued to show resilience and adaptability, especially in digital currency adoption. The adoption of digital currencies across many of these developing economies is a notable trend. It is primarily due to high mobile penetration, remittance flows, and some distrust in traditional banking systems. This holds significant implications for financial inclusion and economic strategy in the region, possibly offering a new avenue for growth and stability.

A framework proposition, published in 2023, for LAC digital currency adoption based on assessing the contribution of digital currencies and design considerations to promote financial inclusion in LAC, based on the Center for Latin American Monetary Studies (CEMLA) survey of 12 central banks, found several interesting pieces of relevant evidence for key implementation considerations of a digital currency in the region and its corresponding effects. Firstly, the survey found relatively low rates of current financial inclusion with most countries bank account ownership falling under 40% of the population. Furthermore, the rapid adoption of digital payments, namely a 20 percentage point increase from 2017 to 2021, provides evidence in support of digital currency adoption being possibly rapid in the region. The region also lacks access to continuous 24-hour cross-border payments which are crucial to maintaining rapid international development, especially with business-business payments. On top of this, with over 20% of GDP being associated with remittances in countries like El Salvador, Haiti, Honduras, and Jamaica, there seems to be an opportunity for significantly

increased efficiency and reduced transaction costs with the implementation of digital currencies. On top of this, Central banks in the regions have hinted that a CBDC could help create a safer, faster, and more affordable payment system. For digital currency implementation, the framework proposes five elements which are cost and affordability, availability, accessibility and convenience, scalability, and programmability. For cost and affordability, stablecoins or CBDCs are recommended as the primary tools. For availability, a 24-hour exchange and payment system is recommended. For accessibility, research warns of the potential implications of underdeveloped infrastructure and lack of ability for offline payment mechanisms with digital currencies in developing regions. For scalability, digital currency's primary benefit is directly through mass transaction handling for large informal market economy support (Bizama et al., 2023).

A research study on cryptocurrency in El Salvador, published in 2023 by Professor Alvarez at the University of Chicago and Professors Argente and Vanpatten at Yale University, presents interesting information regarding the adoption and viewpoints on cryptocurrency within a developing economy in this region based on a survey of 1800 households. In El Salvador, the Chivo Wallet app is a digital wallet backed by the El Salvador central banking system for the use of digital currency in the domestic economy. The following graphic (from the research study) shows the key findings with regard to the adoption and use of the digital currency wallet by members of the El Salvador economy, including retail and business consumers:



Adoption of Chivo Wallet in El Salvador.
(**A**) Dynamics of Chivo Wallet downloads and (**B**) regional variations in adoption across El Salvadoran regions by shares of unbanked. (**C** and **D**) Summary of the survey's results on adoption by individuals and firms, respectively.

Clearly, the conclusion from the study was that first, based on Graphic A, the adoption of the digital currency scheme was relatively high at the beginning but decreased in both adoption and use over time. On top of this, Graphic B indicates an inverse relationship between adoption and underbanked populations, effectively contributing to the lack of adoption since underbanked populations would be more likely to maintain long-term use of the digital platform compared to their peers with existing access to financial services. Similarly to this conclusion, the researchers found that it was the wealthy and banked who ended up using crypto which is counterintuitive to the implementation of the digital currency in the first place. This meant the primary adopters of the cryptocurrency were young educated men. Researchers concluded that the results were due to a lack of transparency and privacy when using this digital platform, which would provide a central governing infrastructure to have greater knowledge of citizens' financial habits, movements, and true spending and income. For these reasons, the population likely continued to prefer cash.

Further integration of evidence from the LAC region surrounding digital currency implementation was presented in a working paper released by the International Monetary Fund (IMF) in 2023. The paper included the opportunities and risks of digital currencies being implemented in LAC. The paper mentions several experiences in LAC with the use of stablecoins which provide key lessons to future implementation of digital currencies. Firstly, the paper mentions the failed attempt at Facebook's implementation of a digital wallet, named Novi, in Guatemala, a region with a relatively high amount of remittance inflows. The platform was shut down but had provided cross-border peer-to-peer payments instantly and without fees. Another key example mentioned is with Stellar-based stablecoins. Stellar is secured by a unique blockchain mechanism called the Stellar Consensus Protocol and users can digitize, issue, and redeem digital money. This allows users to create a token representing any underlying asset. Anclap is a digital payment network for the Latin America region based on Stellar and allows for the release of stablecoins such as Digital Peso and a Digital Sol. The platform allows for daily transactions for unbanked individuals and even gives them access to a physical way to get their currency through a debit card, effectively increasing trust in the platform's connection to existing forms of the financial system. This also means they have implemented connections to moving from a digital currency wallet to a bank account, again solidifying trust and integrating a connection between unbanked individuals and the existing financial system in which they operate. A process that has worked relatively well for adoption purposes. On top of this, the paper mentions the specific use case of digital currencies as a store of value through their act as a savings vehicle pegged to foreign currencies. This has proven to be extremely useful in areas of high inflation and currency destabilization, such as Venezuela and Argentina. The paper mentions that over 6 million people in Venezuela have benefited from remittances made through stablecoin platforms and can pay directly to merchants who accept the platform's primary digital currency. However, the region also shows the effect of international policy from developed economies on the livelihood and value of the local currency in developing economies, even in digitized form, as the digital Petro has seen trades in decreased value due to U.S. sanctions on the currency (Appendino et al., 2023).

Africa Review

Africa has a variety of developing economies with significant growth potential. These economies are often characterized by young populations, rapid urbanization, and an increasing embrace of technology. However, they grapple with issues such as political instability, underdeveloped infrastructure, and economic volatility. The penetration of digital currencies in Africa is gaining momentum. This is primarily due to factors such as widespread mobile phone usage, substantial informal economies, and the need for efficient and low-cost transaction methods. This shift could enhance financial accessibility and catalyze economic innovation.

To preface the analysis of Africa, a research study titled "Digital currencies: Is Africa Ready?", released by a Post-Doctoral researcher from the College of Business and Economics at the University of Johannesburg in South Africa, found that while there was evidence that developed mobile money network infrastructure and high mobile money penetration along with the growth of the digital economy and a high degree of financial exclusion position Africa well for digital currency adoption, there are several flaws that still need solutions. This primarily includes dealing with the digital divide, poor digital infrastructure, and the need for a robust regulatory framework (Sebele, 2024).

Further, a chaper of a large book discussing the industrial revolution of Africa, written by a member of the Central Bank of Nigeria, discussed CBDC adoption in Africa. The chapter mentioned that only 14 African countries have indicated an interest in CBDCs, 13 countries are studying CBDCs to discover if they are beneficial implementations to the economy, 4 of these countries are actually testing a CBDC, and only one country has released a CBDC. The study found that there is low interest in central bank digital currency in the African continent. The primary research states that the lack of interest in a CBDC comes from preferences for cash payments, lack of a developed payment system and limited expansion of existing payment systems on a digital platform, and security concerns (Ozili, 2023).

However, the downsides to digital currency exposure specifically talking about CBDCs doe not necessarily represent the entire of researched opinions or existing evidence. Specifically, a research paper published by the United Nations Development Programme and the UN Capital Development Fund, provided some further evidence on digital currencies in the African context. The study stated that Africa's positioning as a leader in the number of Least Development Countries (LDCs) puts them in a prime position to take advantage of theoretical upward social impacts caused by digital currencies. Some African countries have taken the strategic step to do so. The study clearly indicates that consumers in Kenya, Nigeria, and South Africa are among the top 10 users of cryptocurrency globally and countries like Senegal have repeatedly tried (2 times) to implement their own digital currency for West Africa, looking to a solution in the form of a stablecoin. The arguably most notable point made in the research paper is the possibility of an African bloc currency. The bloc currency proposed within the paper is based on a distinct trend of attempting to use digital currencies within Africa to support interregional trade rather than looking at exports to other continents. For this reason, Arican countries have been working towards a continental free trade agreement to encourage cross-border trade facilitated by several regional organizations. The paper mentions 14 countries who are actively using bloc currencies the Central African Franc and the West African Franc. The paper argues specifically for the use of currency blocs as a foundation for a centralized digital currency which can unite countries with similar characteristics, such as Francophone West African countries who have a historically slow rate of mobile banking adoption. (Foster, 2021).

In essence, an African bloc currency is particularly enticing for several reasons. Firstly, it opens up shared benefits across regions to take on small increases in social impact that would not justify the singular investment for one country to take based on the lack of interest in CBDCs represented earlier. In this way, a multi-investment strategy for developing and maintaining infrastructure by multiple beneficiaries represents a clear approach to increase a return on investment for a governing entity. On top of this, because, as of now, many bloc currency regions have similarities economically in terms of industry structure, size, and growth, a coordinated effort for a centralized digital currency would not only improve cross-border economic relationships but would allow for coordinated monetary policy efforts for supply shocks or decreasing foreign investment across multiple countries. This form of innovative collaboration, may be useful for multiple developing economies to line their successive growth with one another. In this way, social impacts, even marginally to each of the participating regions, would provide continued incentive for small commitments to the continued development of the digital currency over time in the bloc form and keep adoption relatively high with the trust in a multi-failure approach where one of the notable ways that currency truly falls apart in value is if multiple regions face similar economic hardships at once.

Conclusion

An analysis of existing literature surrounding the use of digital currencies in developed economies as well as integrating objective characteristics of digital currencies has created a number of meaningful conclusions. The first is that the vast majority of positive economic effects are diverse by each developed country to each form of digital currency. Essentially, while some forms of digital currency may seem inherently better than other forms due to factors such as governance, pricing, and stability, each form of digital currency's existence is justified by the differing economic and social effects it brings to a developing economy relative to the other forms. Key economic effects include faster and cheaper transactions,

enabling direct peer-to-peer exchanges, increased technological skill availability, increased public-private partnerships, increased infrastructure investment, and greater monetary policy effectiveness.

In general, an argument for individualized digital currencies in different developing economies also holds its own strengths in flaws. From one perspective, individualized digital currencies in a competitive environment may benefit early mass adopters which can be more easily done in developing economies due to the lack of a strong central financial system in the majority of emerging markets. However, on the flip side, individualized currencies may reduce the primary beneficiary impact provided by reduced transaction costs when considering international transactions which may be counterproductive in attempting to support globalization and rapid adoption of digital currencies. However, this approach does not limit the ability of monetary policy, allowing governing bodies to take and implement rapid measures to synthetically create stability in the financial and product markets.

Also, the social effects of digital currencies are relatively dependent on the form in which they are implemented. Cryptocurrencies can hold value in communal empowerment, particularly in regions with high levels of corruption or lack of trust in a centralized financial institution. Stablecoins are most helpful in emerging markets with large border communities engaging in cross-border trades which would have required transaction costs in the form of a change in currency. Alternatively, stablecoins can be useful in attempting to maintain social structure stability in regions experiencing drastically changing economic conditions, such as hyperinflation. Utility tokens can help create social networks, promote innovation, and bridge traditional cultural and geographic divides. CBDCs can motivate increased trust in the governing body, reduce economic disparity through increased access to general financial services, and lead to overall better and more modern public infrastructure.

The case studies of Latin America and the Caribbean in the adoption of digital currencies in developing economies showed several benefits and flaws derived from the theoretical adoption previously discussed. Firstly, a significant amount of application-based evidence contradicts commonly held assumptions regarding implementation of digital currencies in the developing economies within these regions. The examples of El Salvador's digital wallet, Facebook's Stablecoin, and the Senegal digital version of the West African Franc to name a few represent the institutional failure of theoretical positive aspects of digital currencies in the form of stablecoins, CBDCs, and cryptocurrencies to positively impact financial inclusion or socioeconomic ability. On top of this, each of these cases shows a result of low adoption and high variability in trust in the central government as a key factor in the unsuccessful implementation of a digital currency. However, each region also shows some positive use cases for digital currency which justify it's continued development. Devloping economies in Latin America and the Carribean's access to stablecoins has resulted in a more effective flow of remittances and international transfers amidst local hyperinflation and lack of trust in the fiat currency. Furthermore, Africa's continued development of research, albeit by limited insitututions, on CBDCs shows a resilient approach in taking advantage of the social benefits of the currencies and to establish cross-border partnerships through the possibility of a digital bloc currency implementation.

Based on the cumulative evidence presented in previous research as well as a holistic analysis of various cases of digital currency implementation within developing regions, the simplistic conclusion of the evidence is a lack thereof of a noticably large impact for financial inclusion or socioeconomic development. There is very limited evidence, under specific precursors, to indicate that digital currencies are necessarily the future of digital payments. What is clear is that there is an existing trend within developing economies for a preference of stablecoin like assets with a link to a fiat currency but with the added implication for easily tranferrable funds to exist between the fiat currency in the region and the digital currency in the form of the stablecoin. For this reason, the implications of social impacts , especially to migrants, border communities, and low-income communities, with access to this form of currency going forward for financial inclusion and socioeconomic development seems to be the most logical and probabilistic approach. However, it is notable to mention that the reason why CBDCs lack the ability to currently entice the existing population is due primarily due to governance and infrastructure, based on the presented evidence. As a result, CBDCs may be a viable form of digital currency in developing economies, but in order to do so, there is a requirement for further development in digital infrastructure, education, and trust in governing bodies, likely indicating CBDCs as a form of currency would be best implemented for social impact purposes in medium-sized economies whose growth starts to be inhibited by size. In following through with these takeaways, it is likely that in within the next half-decade as technological adoption continues to rapidly develop, we may see the infrastructure and governance needed in order to launch a successful digital currency within a developing economy.

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