Bridging Digital and Fiat

Crypto's Role in
Modern Payments

luno

Contents

Foreword 01

Paying with crypto 02

Q+A: Can crypto and banks co-exist? 12

Crypto and fiat's financial junction 15

Q+A: Should stablecoins become a payments staple? 21

Foreword

The cryptocurrency industry has long been accused by its critics of being a solution in search of a problem. For its supporters, however, there have always been clear problems to be solved. Inefficiencies in the global payments settlement infrastructure are a universally-recognised issue, and it was these inefficiencies that the original cryptocurrency, Bitcoin, intended to address. Bitcoin was built to enable the seamless transfer of immutable value from one person to another without the need for intermediaries to authenticate and approve the transaction. To remove friction, in other words.

Since Bitcoin was created, other developments have emerged in the crypto industry. Fiat-backed stablecoins, for instance, track the movements of major reserve currencies like the US dollar and the Euro. Even the South African rand has been digitised in the form of ZARP. These technologies help bridge the gap between cryptocurrencies and traditional currencies in the payments system.

However, solving the technological challenges, as pioneered by Satoshi Nakamoto and his predecessors, does not mean the battle is won. The real challenge lies in implementing this technological breakthrough within the wider economic system, making it accessible to those who need it most, such as workers sending remittances home to their families and facing fees of up to 9%.

For this Q2 report, we interviewed experts in the crypto space, from those building in the crypto payments arena to compliance specialists, to examine how crypto payments are currently being used and implemented, and how stablecoins can eventually lead to a system where value and money are transferred globally without intermediaries. While we are still a long way from this becoming a reality, the possibility is there. The players from both traditional finance and the crypto world, alongside regulators, must work together to implement this new technology without disrupting the old one. ■

**Investing in crypto assets may result in the loss of capital. Luno is a licenced financial services provider, registration number 53314.*

This information is not intended to be nor does it constitute financial, tax, legal, investment or other advice; nor is it a call to trade. The information is intended as general market commentary for information purposes only. Before making any decision or taking any action regarding your finances, you should consult a qualified Financial Advisor. The opinions expressed in the Crypto Report are independent commentary and do not necessarily reflect Luno's view or receive its endorsement.

Paying with crypto

One of the fundamental principles of money is its redeemability. Is it too much of an ask for cryptocurrencies to be treated as such?

If the global financial ecosystem is one big circle, crypto as an investment is a speck somewhere on the periphery, and crypto payments are even less conspicuous than the investment case, but it's growing, explains Carel van Wyk, founder and CEO of Moneybadger, a company that connects merchants to crypto to enable payments in Bitcoin and others. "It's the niche use cases beyond investment that we're currently exploring. We're going to see these pockets continue to grow and eventually start connecting," he says. "Initially, we had a couple of these little dots in the circle, and it's expanding with these new use cases, but it's still very much on the fringes of the traditional financial system."

In February last year, Pick n Pay, one of the largest retailers in Africa, made crypto payments available to customers across its thousands of stores in South Africa.

One year later, thanks to partnerships between exchanges like Luno with large active customer bases and fast-growing crypto payments companies like Moneybadger, the retail giant is seeing roughly R1 million in monthly sales from shoppers using crypto to buy and pay for goods and services.

It's a huge jump from the R25,000 per month in crypto payments recorded in the months following the launch, but it's still a small number compared to traditional cash sales. For comparison, the Pick n Pay Supermarkets division in South Africa alone reported R71.4 billion in the 2023 financial year.

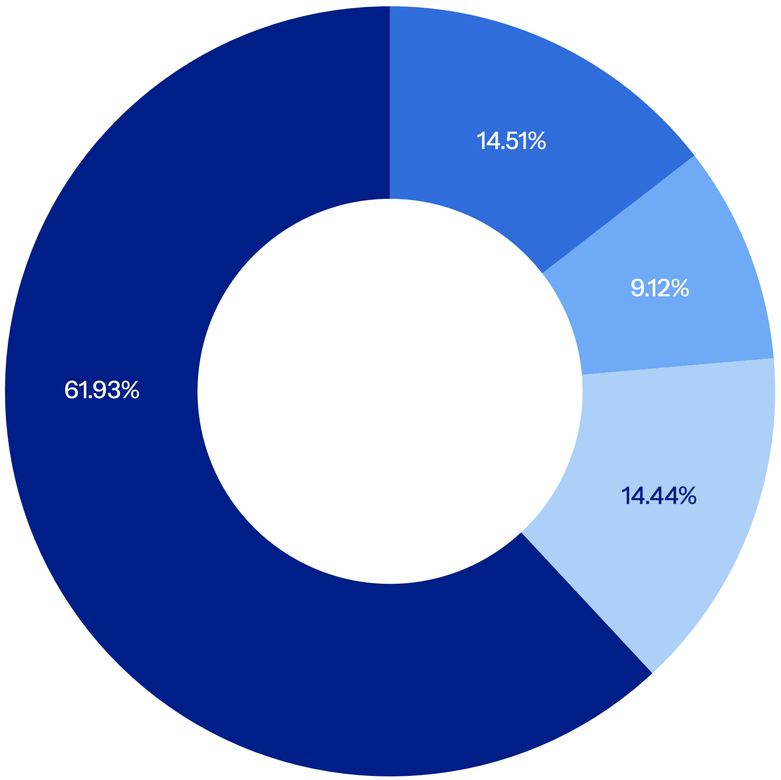
The Pick n Pay experiment has made crypto payments possible for many South African shoppers, but it has also shone light on crypto as money, not just as an investment.

In a recent Luno social media poll, almost 40% of respondents said they have used crypto to make payments. The results are more an indication of how crypto natives use crypto - assuming that people following Luno on social media are more familiar with crypto than the broader public - but it indicates interest in the application among this group of users.

There's a strong correlation between user familiarity with crypto and their willingness to use the payments feature in the Luno app. More than 60% of payments through Luno come from customers who have been with Luno for three years or more.

The vast majority of Luno customers that use Luno Pay prefer paying with Bitcoin over Ethereum and other cryptocurrencies, which is likely because of people's familiarity with Bitcoin, by far the most popular crypto on Luno. It also gives further credence to Van Wyk's argument that the investment case and the payment case will eventually align. If people have crypto, there's a good chance they may want to spend it without having to exit the crypto ecosystem by selling their crypto and sending the money to a bank account.

Distribution of Luno Pay customers by tenure



Most Luno customers that use the pay feature in the app have been customers for more than 3 years.

Source: Luno

**Past performance is not indicative of future performance.*

Luno Pay by the numbers

2.54344221

BTC processed

3,377,218

ZAR processed

R.99

Smallest basket

R150

Median basket

R367.77

Average basket

R9,999.99

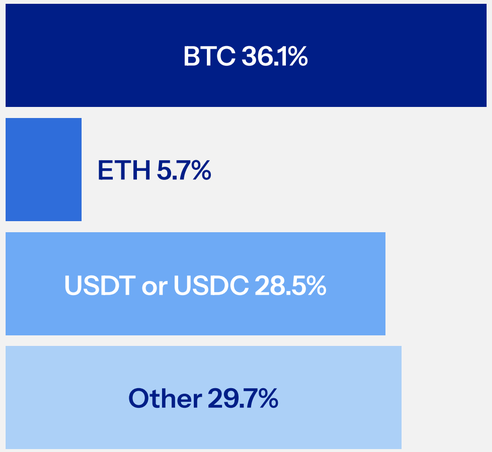
Largest basket

Since the launch of Luno Pay in September 2023, Luno has processed more than R3 million worth of crypto payments through the Luno Pay feature.

Source: Luno

**Past performance is not indicative of future performance*

Which cryptocurrencies do Luno customers on social media prefer?

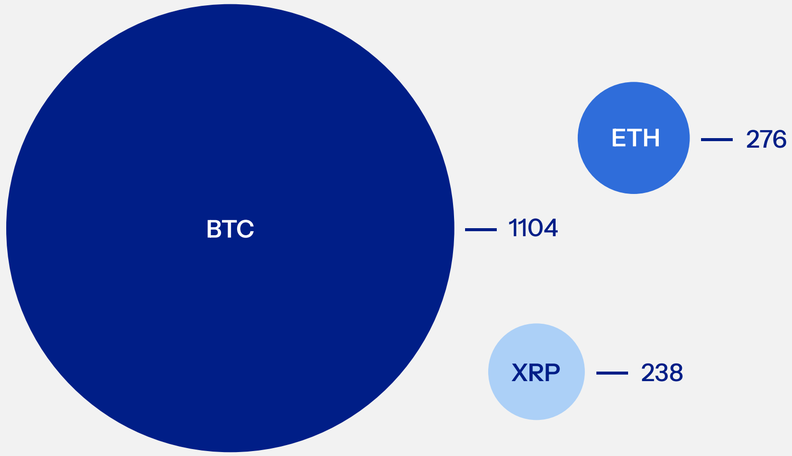


A recent poll on social media showed that Luno followers prefer to pay with Bitcoin over ETH, stablecoins, and others.

Source: June 2024 Luno social media survey

**Past performance is not indicative of future performance.*

Number of Luno customers per cryptocurrency payment use



The majority of Luno customers prefer to pay with Bitcoin, also by far the most popular crypto investment on the platform.

Source: Luno

**Past performance is not indicative of future performance.*

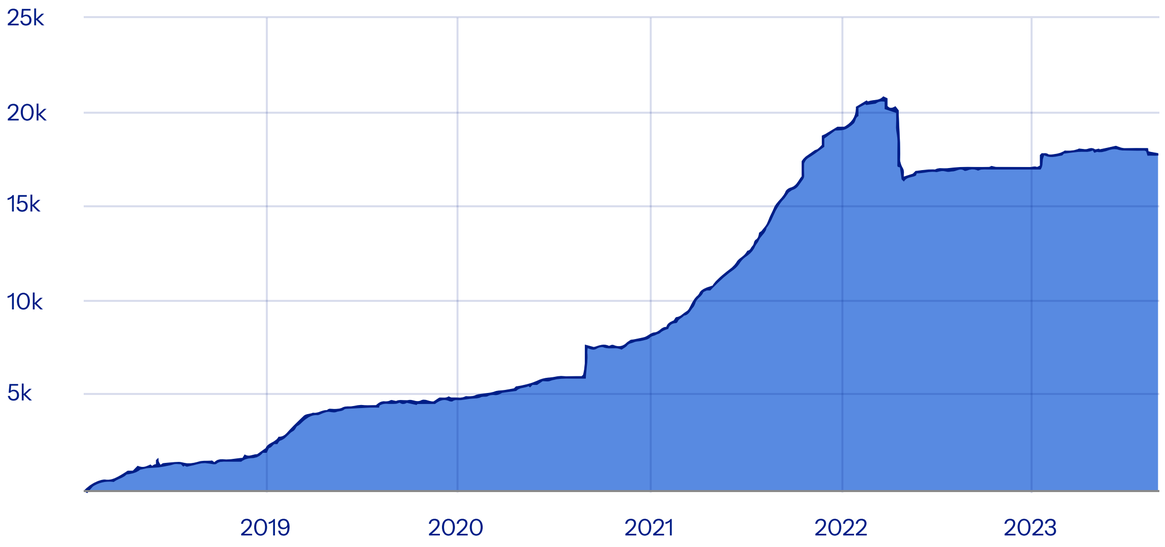
Layering solutions

The Bitcoin blockchain is currently too slow and costly to be viable as a global payments solution on its own, with the layer-1 blockchain able to process roughly 7 transactions per second (tps) compared to Visa's 24,000 and Mastercard's 5,000.

To address these latency issues, developers created the Lightning Network in 2018, a layer-2 network built on top of the Bitcoin blockchain. The Lightning Network, sometimes simply called Lightning, processes transactions off-chain before feeding them back to the Bitcoin blockchain. As the name implies, Lightning is fast, with capacity for up to 1 million tps, but the often overlooked, and critical, feature of Lightning is that it allows merchants to create pre-generated invoices for transactions, solving many inefficiencies with Bitcoin layer-1 transactions.

The Lightning Network essentially allows two users, using an app connected to the network, to transact through a channel that can be opened and closed when the transaction is finalised. Transaction finality happens almost instantly as it doesn't require miners to validate the transaction. Only when the transaction is finalised and the channel is closed on Lightning is it broadcast to miners on the layer-1 network and confirmed.

Nodes in the Lightning Network

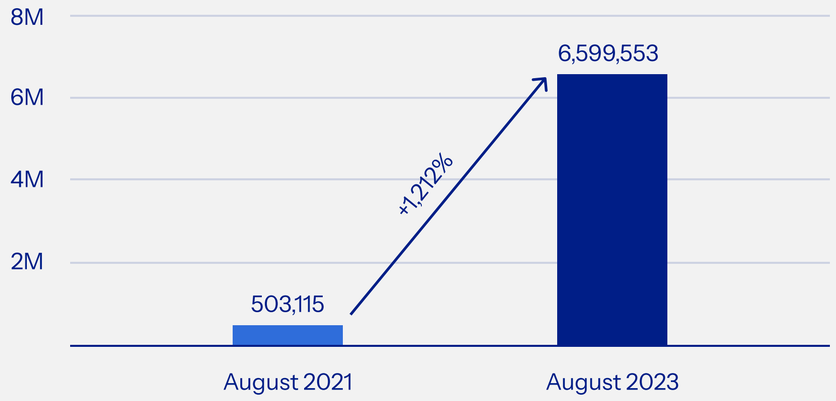


The number of nodes, computers that route transactions in the Lightning Network, has surged since its inception in 2018 but appears to have plateaued last year.

Source: River Lightning Report 2023

**Past performance is not indicative of future performance.*

Estimated Growth in Routed Lightning Transactions

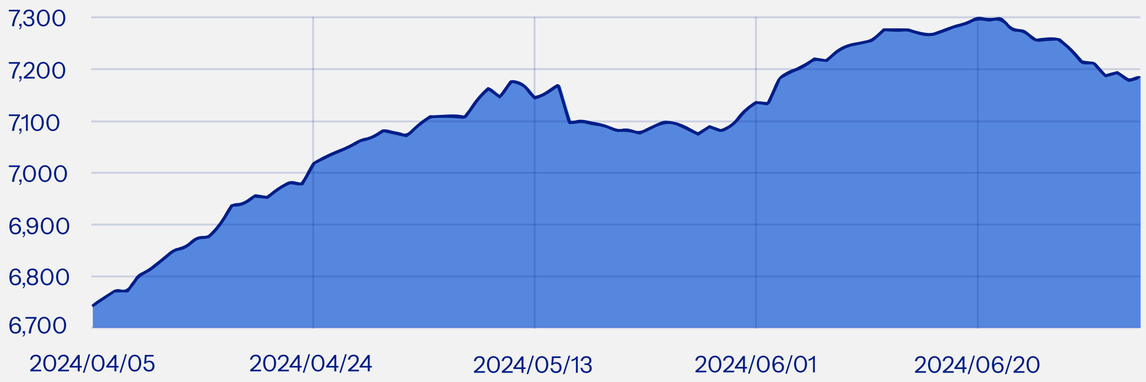


The Lightning Network saw an estimated 1,212% growth in routed Lightning transactions, surging from 503,115 in August 2021 to 6,599,553 in August 2023. This remarkable increase underscores the expanding adoption and scalability of the Lightning Network.

Source: The River Lightning Report 2023

**Past performance is not indicative of future performance*

Bitcoin vendors globally tagged on BTCmap.org



BTCmap.org geo-tags global vendors accepting Bitcoin payments. While data verification is challenging, tagged merchants increased in Q2 2024, with growth slowing by late June.

Source: BTCmap.org

**Past performance is not indicative of future performance.*

The Lightning Network was a Rubicon moment for the development of Bitcoin as a legitimate means of payment. Most Bitcoin circular economies - where people spend Bitcoin and merchants accept it - use Lightning to clear transactions. A 2023 research paper by River estimated that transactions on the network increased by 1,212% between August 2021 and August 2023, with almost 6.6 million routed transactions recorded in August 2023.

There are currently 525 merchants in South Africa tagged on BTCmap.org, a website where shoppers can tag vendors around the world that accept Bitcoin, but the numbers could be outdated due to many merchants in South Africa not having been tagged in over a year.

The circular economy of Bitcoin Ekasi, situated in the informal township of JCC Camp, in Mossel Bay, South Africa, is visible on Bitmap.org – 14 businesses in the small community currently accept Bitcoin. In a 2022 interview with Luno, the project's founder, Herman Viviers, described Bitcoin Ekasi as an example of Bitcoin's potential as an alternative form of money.

"Bitcoin Ekasi has received considerable attention among the international Bitcoin community, likely because many Bitcoiners believe in the promise of open access and decentralisation that the technology holds," Viviers explained. "And not in a way that is about speculation, but a real-world application." The other Bitcoin circular economy in South Africa is two hours drive south from Bitcoin Ekasi in the direction of Cape Town. Almost 70 of the roughly 500 residents in Witsand use Bitcoin regularly at the 15 businesses that accept Bitcoin, as Bitcoin educator Anita Posch found when travelling to the town in January 2024.

Sidenote

Taxing trader and shopper

Making a payment with crypto is still seen as a taxable event in South Africa and most other countries, which can complicate calculations come tax season, especially when the crypto is used for payments, trades in other words, every day. In this scenario, the same tax rules apply to a trader as someone who buys vegetables with crypto every day. One possible solution is for regulators to set a threshold of a certain amount of cryptocurrency as a personal use asset, says Van Wyk of Moneybadger.

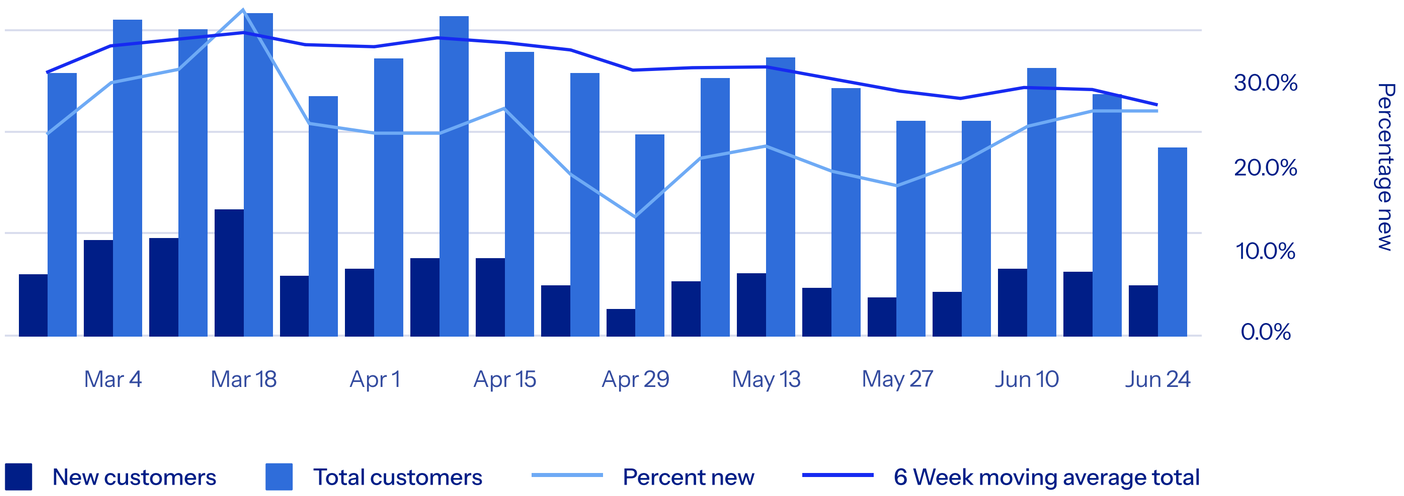
In Australia, for example, cryptocurrency up to AUD10,000 can be bought and earmarked for goods and services, but it must be used shortly after purchase for it to be exempt from capital gains tax.

From the user's point of view, what this could look like is to have more than one crypto wallet on a crypto platform, each for a different purpose, Van Wyk explains. One for investing, and the other for personal use. Hypothetically, at the beginning of each month, you could buy a set amount of crypto using this wallet for personal use.

Willing seller willing buyer

A strong argument for crypto payments is that its decentralised nature allows the financially underserved to earn, save and pay in such a way that doesn't require a bank account. This works in these types of circular economies where users and merchants can use Lightning Network apps that feed directly into the network. And it's likely no coincidence that the pioneering Bitcoin economy of El Zonte in El Salvador was founded a year after Lightning was released. But payment integrations with licensed crypto platforms are more complicated, as regulators require these crypto services providers to uphold the same level of KYC compliance as banks, which would exclude the same people who don't have the necessary documentation to open a bank account.

Customers new vs. existing on Luno Pay (Q2)



New users and existing customers have remained relatively steady throughout the second quarter in 2024, with dips and peaks possibly correlated with broader market movements.

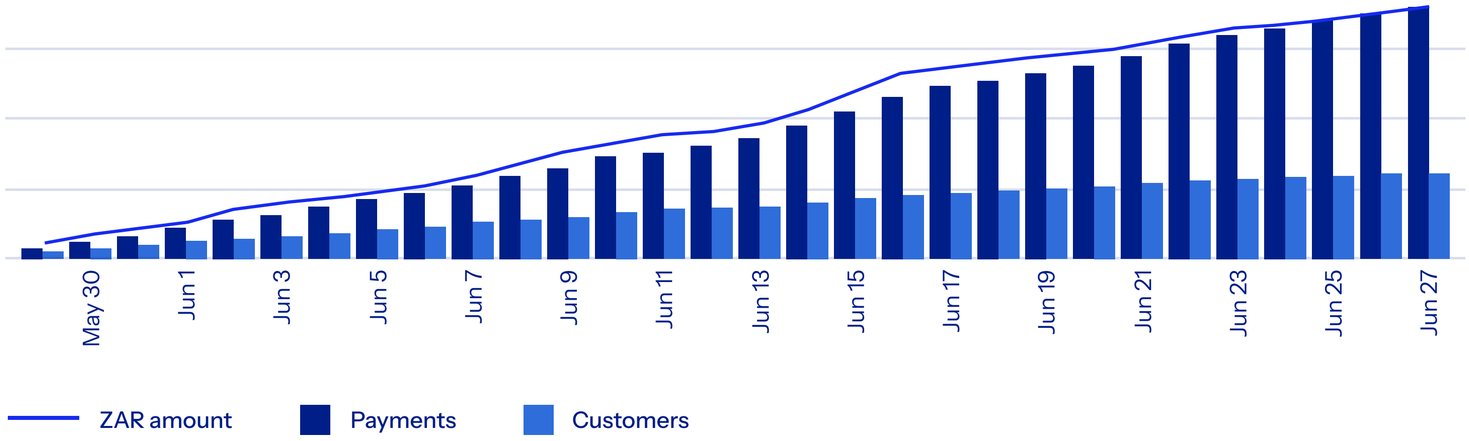
Source: Luno

**Past performance is not indicative of future performance.*

In this case, where does the real-world application of crypto payments sit within the greater payments system, where traditional payments apps are already entrenched? Van Wyk, whose company also creates solutions that integrate to Lightning, says it's simply to enable people to spend their crypto, and for merchants to accommodate their customers' needs.

Mobile payment applications like SnapScan, Zapper, and iKhoka integrate with banks on both ends of the payment process, facilitating transactions between bank accounts. In contrast, crypto payment apps like Moneybadger typically integrate with banks on one end and the crypto ecosystem on the other, such as connecting to a crypto exchange like Luno or the Lightning Network. Efforts are already underway to further integrate these payment apps into the broader crypto ecosystem.

Customers/Payments (Q2)



The Q2 data from Luno Pay suggests that the number of payments appears to be increasing more rapidly than the number of customers, possibly indicating that existing customers are making repeat transactions.

Source: Luno

**Past performance is not indicative of future performance.*

Moneybadger initially rolled out crypto payments at Pick n Pay by connecting to the Lightning Network on the crypto side, which worked, but use of Lightning wallets was limited among South Africans. “We were looking at expanding this to a greater audience,” says Van Wyk. “That's when we approached the big services providers explaining our integration on the retail side,” meaning the type of integration that makes crypto payments at retailers like Pick n Pay possible.

Van Wyk doesn’t see crypto payments apps competing with other traditional bank-integrated payment channels, but rather to help people use crypto in the same way they would other forms of money. There are people that want to spend their crypto, says Van Wyk. “If someone says we’re just copying what SnapScan or Apple Pay are already doing, I would say, yes, we are, but it’s on a different foundation,” he explains. “We’ve seen adoption go up. It’s still very small, but we’re seeing momentum.”

Critics argue that crypto is a solution looking for a problem, but as crypto adoption continues to grow, so could the case for being able to use crypto to pay for things. Experts expect the crypto payments market to expand from $1.6 billion in 2023, according to data by Statista, to $4.8 billion by 2030.

“We want to make it convenient and simple for people to use their crypto, and to create a market of merchants that accept crypto,” Van Wyk explains. “What we need to do is prove that there are people that want to spend their crypto. We want to show that there are people that will use it, and that there’s enough people that you as a vendor should care about crypto payments,” says Van Wyk. ■

Q+A

Can crypto and banks co-exist?

Steven Boykey Sidley, Professor of practice at the Johannesburg Business School in South Africa and author of *Beyond Bitcoin: Decentralised Finance and the End of Banks*, speaks about why being able to send money across the world in seconds matters.

Luno: Where do stablecoins fit into the greater financial system?

SBS: The quick takeup of Tether, USDC, Dai and other stablecoins just before 2020 revealed a pent-up demand for a frictionless and non-volatile way of trading within the crypto ecosystem without reverting to fiat currency. One of the biggest advantages of stablecoins was providing crypto traders with a way to hold their value in a less volatile asset while deciding which projects to invest in, effectively serving as a "staging area" within the crypto markets. Following this, it became evident that there was an enormous need for stablecoins not only within the crypto community, but also beyond it.

It immediately became apparent - to me, at least - that it was just simply better money than fiat currency. It was better money because it required no middleman.

You had people who started moving their money into stablecoins for a couple of reasons. The interesting reason in Africa was that Dollar-based stablecoins increased their value relative to local currencies.

In Nigeria, for example, a country that's seen its currency devalue sharply, there is a significant percentage of people who take a paycheck in Naira and immediately convert it to USDC, just keeping enough in fiat for the basics. Stablecoins are a stabilising mechanism to completely avoid the risk of your government mismanaging its economy and debasing your local currency.

The main reason for this debasement historically is excessive printing of money. The local currency loses purchasing power because of this and, eventually, the country goes bankrupt. This has been repeated over and over throughout history. In the case of America, you currently have different pressures, such as the fact that about 60 or 70% of all circulating dollars were printed in the last three years. So, you get the beginnings of intractable inflation. And it's happening in many other places because of overprinting, mismanagement, global wars, and the pandemic, so there's this perfect storm of things happening that causes the debasement of purchasing power in many countries. Stablecoins offer partial protection against that.

You also have money that you can move around without the approval and attestation of a middleman, which is generally the bank. If you can move money around without a bank, there is a reduction in costs because you're just moving money. The velocity of money around an economy is nearly free with stablecoins, and the speed at which that money moves is orders of magnitude faster than the speed at which traditional fiat moves.

Some very prominent bankers also believe this to be the future of banking, a future where there's no entity in the middle. For remittances in Africa, stablecoins are going to be, not the only way it's done, but the best way, the most frictionless, safest and fastest. You're still stuck with having to actually use, or spend, the stablecoins in these regions. I think that as retailers become more comfortable with accepting stablecoins for goods and services, we're going to find ourselves facing an explosion of resistance from banks and regulators.

I have empathy for the regulators' position. If the central bank or financial authorities can't see money moving throughout the economy, they can't plan for the fiscus. There is this grey area between the world where crypto exists and the world where people buy stuff. This grey area currently means that I will be able to use my stablecoins to buy a loaf of bread and the government will never see the flow of capital because it all happened semi-anonymously on the blockchain. So, you'll find regulators in a panic because it becomes a threat to an entrenched system of capital monitoring, which is important if you want efficient and fair collection of taxes for roads, police forces, and other infrastructure.

Luno: How do we get to a stage where this is almost accepted by the regulators and the banks and what does that ecosystem look like in the next ten years?

SBS: That particular question is the subject of great debate from the metabanks at the top. It's a matter of great bewilderment, confusion, and contestation, without any clear solutions in sight.

Let's take a utopian world in which there is only one cryptocurrency, and it's not dependent on the management of any economy. Let's use Bitcoin as an example. In this regime where Bitcoin is the one global currency, none of the banks know where the money is moving. And there's a great deal of danger in that, as it opens up avenues for crime and other things. The solution, which is rejected by many crypto proponents, is to monitor the movement of funds. Policymakers choke crypto at either end, the on- and off-ramps, and force anonymity out of the equation. There are currently regulations like Travel Rules that says crypto services providers must know where the money came from and where it's going.

I don't see an easy resolution. I can possibly see a situation where the regulators don't necessarily ban peer-to-peer globally, but try and stop it on the corporate side, but once you make that statement, it opens up other leakages.

I don't believe there will be a utopian world in which everybody transacts anonymously. I don't think it makes economic sense.

I do, however, think it makes economic sense for there to be no intermediary, and that is the answer of crypto, where banks become less relevant. But, there has to be regulatory monitoring, not only for crime control, but so that regulators can see the capital flows to gauge the health of their respective economies.

There's a mismatch between technological and regulatory advancement. Innovations happen at the speed of crypto, or the speed of technology, and the policy and regulations happen at the speed of policy and regulations, which can take years, and that mismatch is the source of all the problems we've seen.

Luno: Are central bank digital currencies a middleground of sorts between crypto and traditional finance?

SBS: The technical side of a central bank digital currency (CBDC) is a stablecoin. If you took USDC and told Circle, the issuer of USDC, you are in charge of our national dollar, very little work would have to be done to get it off the ground. It's done. But there are two big problems.

The first is that in most parts of the world, governments are trying to build the tech from scratch, which can lead to massive security issues. To write your own tech for this stuff – when hardened tech like USDC exists – is nuts. The second problem is that CBDCs are not anonymous and therefore you have countries like China that surveil their citizens through their CBDC. It becomes a potential surveillance tool. Privacy activists won't have a situation where a government sees every single transaction by every single human being in their borders. It is a matter of human liberty that we can transact privately.

Once everybody starts using CBDCs, the necessity for paper cash, and the necessity for banks processing those types of transactions, starts to diminish.

Luno: On the positive side, what have you identified as the obvious momentum indicators for crypto, stablecoins, and other blockchain transactions globally?

SBS: I'm in a situation, and I'm not alone, where I can say, somewhat gleefully, that I told you so.

I wrote an article for Daily Maverick called "Has crypto become boring?" and the thrust of it is that crypto has become institutionalised assets with the development of crypto exchange-traded funds (ETFs). Crypto is now on the balance sheets of some of the biggest financial institutions in the world, and if you believe Caitlin Long, the founder and CEO of Custodia Bank, it's also on the balance sheets of some countries.

Some cryptos are not considered speculative anymore. It's an asset which is finding its way into pension funds like in Wisconsin in the US. The industry is, for the most part, no longer a bunch of wild-eyed youngsters running around and building something that has no chance of institutionalising.

When a company like BlackRock decides that Bitcoin is a real asset, the whole game changes. Blockchain-borne movement of value is now not only institutionalised, but it is well enough understood that 500 million people globally have traded or invested in crypto, a number that is growing rapidly. There's also the tokenisation of real-world assets, which is where the real growth is going to come from. Companies such as DCG and McKinsey are estimating that this will grow from essentially zero in 2020 to 20 trillion dollars in 2030, and that 10% of global GDP will be on the blockchain.

BlackRock's Larry Fink says within five years, every single asset in the world will have its value represented on a blockchain. So, I'm extremely positive that this technology has finally broken through for all the reasons that people like me have been trying to evangelise to rolling eyes for the past eight or nine years. ■

Crypto and fiat's financial junction

Stablecoins are designed to be faster and cheaper to send than traditional money, while some even say it's 'crypto's ultimate contribution to finance'. But now comes the difficult part of making it available to people outside of crypto.

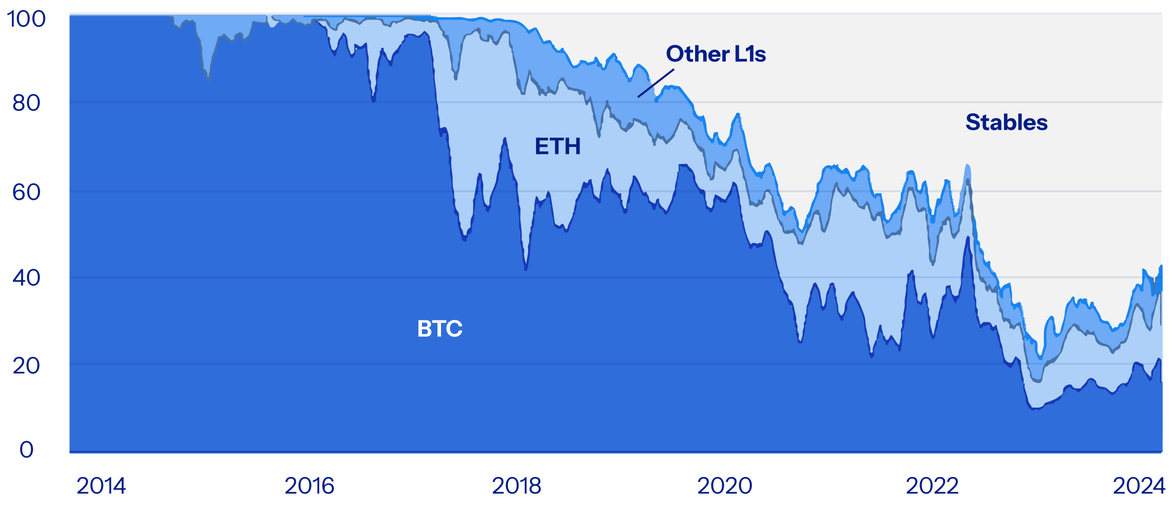
"A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution," is the opening salvo in the Bitcoin white paper, published in 2009. It's a simple concept, but the idea of moving money between two people without an intermediary is incredibly complex, both technologically and politically. Satoshi Nakamoto, the pseudonymous creator(s) of Bitcoin, may have solved the technological side, but integrating a decentralised solution into the greater centralised economic system comes with massive technical and regulatory challenges.

Many so-called Bitcoin maximalists have a utopian vision of a financial system in which Bitcoin replaces the Dollar as a global reserve currency, but Nic Carter, co-founder at CoinMetric and partner at Castle Island Ventures, argues that something entirely different is happening. "Stables have dollarised the crypto market, and they are crypto-dollarising a whole host of economies, particularly in emerging markets," he writes in an essay on Medium. "It's apparent to me that stables are becoming a truly dominant global settlement infrastructure, and one that is increasingly integrated into the existing financial system."

Before stablecoins, and before the idea of possibly using stablecoins in traditional finance, Bitcoin was the main unit of account for traders when trading more volatile cryptocurrencies, but stablecoins have since taken over this role, accounting for up to 80% of value settled on-chain, Carter notes. The main reason for this shift is the stability that stablecoins offer.

They are the closest thing crypto has to traditional money. It's this price stability that has perhaps put the focus on stablecoins as the most eligible crypto to be used outside of the crypto ecosystem, rather than Bitcoin, as envisioned by many of the original crypto founders. Stablecoins bridge the gap between cryptocurrencies and traditional finance, offering a digital asset that closely mimics conventional money. This similarity makes the transition between crypto and traditional financial systems that much more seamless.

Relative on-chain value, USD terms



Stablecoin use within the crypto ecosystem has increased dramatically since the proliferation of fiat-backed stablecoins such as USDT, created in 2014, and USDC in 2018.

Source: Nic Carter, Five perspectives on stablecoins

**Past performance is not indicative of future performance.*

The cost of sending money home

Remittance flows to sub-Saharan reached roughly $54 billion in 2023, and looks set to be even higher in 2024, according to the World Bank, who expects it to increase by 2.5% this year.

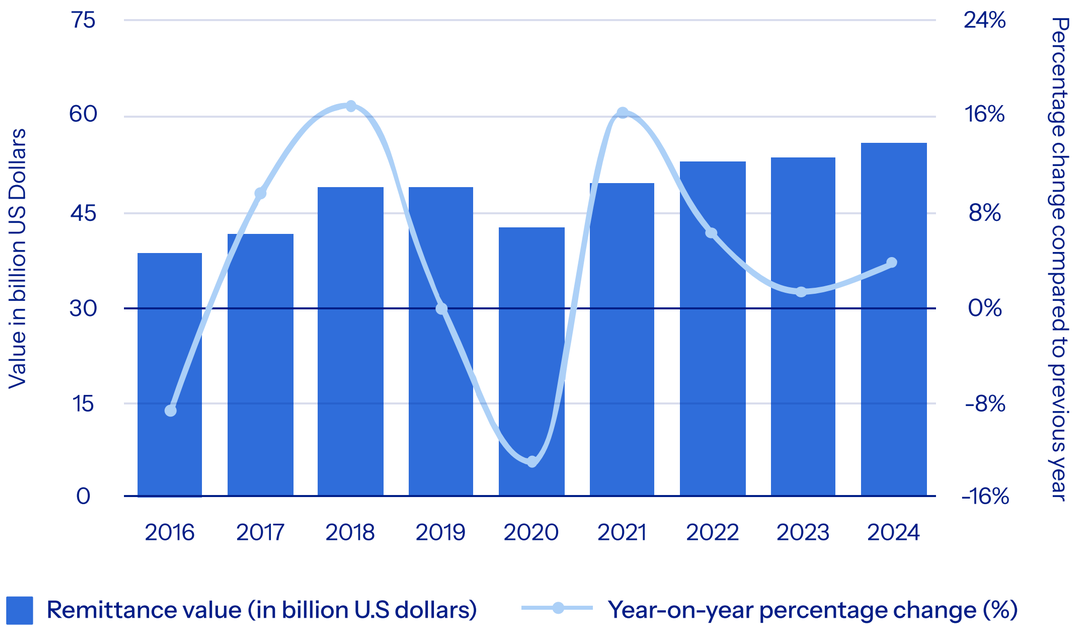
The process of sending a remittance payment involves several steps, typically facilitated by a money transfer operator (MTO).

Sidenote

Stages of remittance

- Sender approaches a money transfer operator (MTO) or online platform
- Service provider verifies sender's identity
- Provider processes the payment
- Debits sender's account
- Credits recipient's bank account or handles cash-to-cash transfer
- Provider converts funds at applicable exchange rate
- Recipient receives funds via, bank credit, cash pickup, digital wallet deposit
- Both parties are notified of the transfer
- Provider charges a fee based on various factors

Remittance flows to sub-Saharan Africa from 2016



There's a general upward trend in remittance flows from about $38 billion in 2016 to over $55 billion projected for 2024. The flows peaked around 2018, followed by a significant dip in 2020, likely due to the global Covid-19 pandemic.

Source: World Bank

**Past performance is not indicative of future performance.*

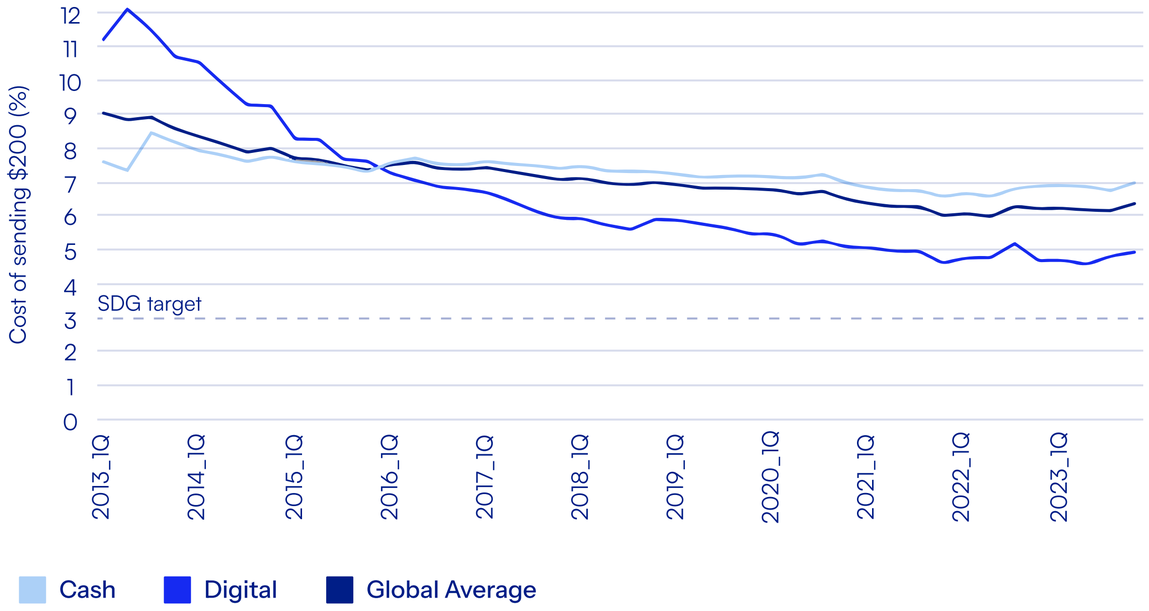
The global average cost for remittances is 6.9% of total value, according to the World Bank. Sub-Saharan Africa, at about 7.9% total average cost in Q4 2023, remains the most expensive. Remittance payments have become cheaper to send, but 2022/2023 saw the trend bottom out and start rising again.

Sidenote

Factors that contribute to high prices, according to the World Bank:

- Underdeveloped financial infrastructure in some countries
- Limited competition
- Regulatory obstacles
- A lack of access to the banking sector by remittance senders and/or receivers, and difficulties for migrants to obtain the necessary identification documentation to enter the financial mainstream

Trends in the global cost of sending $200 in remittances



In the last few years (2020-2023), remittance costs appear to have stabilised somewhat, with less dramatic decreases compared to earlier years, but it remains well above the 3% set by the United Nations in its Sustainable Development Goals.

Source: World Bank

**Past performance is not indicative of future performance.*

Could stablecoins be part of a solution to these problems? "A stablecoin is better money than fiat, Steven Sidley tells Luno. Sidley is the Professor of Practice at the Johannesburg Business School in South Africa, and Head of the Blockchain and the Cryptoverse Research Group at the Institute for Future Knowledge. "The cost of moving money around in an economy is nearly free with stablecoins, and the speed at which money moves is orders of magnitude faster than traditional fiat money," he says.

But how cheap and fast, exactly? It's difficult to say. It depends on the amount, the type of stablecoin, the time of day, and the exchange and blockchain used to settle the transaction. Remittance costs are typically reported as the fee payable on a $200 transfer, which can be anything between 7-9% through traditional remittance channels, so just under $20 for every $200 sent. All things considered, the cost of sending $200 in USDC, for example, to another wallet can be in the 1-2% range of the transaction amount, with the funds generally clearing in minutes. This, for Sidley, is crypto's killer application. However, integrating this feature into traditional finance comes with several challenges.

While crypto wallet-to-wallet transactions are typically cheaper and faster than traditional bank transfers, the crypto has to be spent in the traditional economy. Recipients often need the money for daily expenses payable in local currency. This process involves multiple conversions. The sender must convert fiat to USDC, as in the above example, incurring fees, then send the crypto to another wallet, incurring more fees. The recipient must then convert the crypto back to fiat, resulting in additional fees. These conversions plus the send fee could total up to 10% of the total amount in fees. Within the crypto ecosystem, stablecoins offer efficiency. However, converting stablecoins to traditional currencies presents challenges. These issues could be resolved in the future with the development of regulatory frameworks to track stablecoin movements, and the integration of technology that allows people to receive crypto as payment, send it over a blockchain, and use it to pay for goods on the other end. But there's a lot of ground to clear before this is possible.

Traditional financial institutions acknowledge the potential of stablecoins in developing nations. "Improved cross-border payments may offer greater benefits to emerging market and developing economies (EMDEs) than to advanced economies (AEs) insofar as EMDEs experience more acute crossborder payment frictions," according to the Bank of International Settlements (BIS). However, the BIS warns of potential disruption to the traditional financial system caused by currency substitution, volatile capital flows, and a lack of regulatory oversight. "Currency substitution could undermine the ability of authorities to control the money supply or interest rates, eroding the effectiveness of monetary policy and financial policy control," the bank says in its paper, *Considerations for the use of stablecoin arrangements in cross-border payments*. The success of such a system depends on the execution and regulation. Timothy Massad, former chairman of the Commodity Futures Trading Commission under the Obama administration, gives his take in an essay: "Because tokenised money is a bearer instrument, it may create more risk of illicit activity than account-based payments, although stablecoins are much easier to track than cash in suitcases."

Tracking the Eurodollar

It's not the first time that regulators have grappled with regulating the flow of Dollar-pegged money. Stablecoins pegged to the US Dollar are often compared to the Eurodollar, in that both provide a way for people to hold and transact in US dollars outside of the traditional US banking system. A Eurodollar is a US dollar deposited in banks outside the United States around the world, not just in Europe, despite its name. These deposits are held in foreign banks or in the international branches of American banks. Eurodollars allow for dollar-denominated transactions and loans outside the direct regulatory oversight of US authorities, and are widely used in international finance and trade, providing liquidity and facilitating global dollar circulation.

There are about 400 commercial and private banks in the Eurodollar market, according to the International Monetary Fund.

"Eurodollars are very similar to stablecoins," says Massad in an essay published on Brookings. "They are US Dollar-based liabilities issued by foreign banks outside the US regulatory perimeter," he says. The lack of direct regulation and transparency in the Eurodollar market makes it challenging for regulators to accurately record and monitor Eurodollar flows, but they rely on a combination of indirect measures such as bank balance sheets and other indirect indicators, to gain insights into this parallel US dollar system.

Pragmatic regulation

Governments that have drafted stablecoin regulations generally propose that issuers must be authorised and meet strict requirements for backing assets. They also call for monitoring and oversight of stablecoin use in payments, along with measures to mitigate risks such as operational failures and cyberattacks.

The Markets in Crypto-Assets Regulation (MiCA) regulation in the EU, for example, imposes specific requirements on issuers, such as holding adequate reserves, providing transparency on the reserve composition, and obtaining authorisation from competent authorities. The regulation also places stricter rules on "significant" stablecoins that could have a wider impact, including limits on daily transaction volumes. Overall, MiCA aims to create a comprehensive regulatory framework for stablecoins in the EU to ensure consumer protection, financial stability, and legal certainty, while also fostering innovation in the crypto asset market.

Many policymakers in African nations are yet to draft regulation directly linked to stablecoins, but South Africa's Intergovernmental Fintech Working Group (IFWG) announced in February its plans to publish a paper this year detailing thoughts on the positioning of stablecoins in the South African crypto and financial landscape.

The problem is that technology and regulation develop at different rates, says Sidley, which is one of the reasons why stablecoins haven't been integrated.

It's very unlikely that we see a world where cryptocurrency moves unencumbered through the financial system, he says. Regulators want a clear overview of where money is moving. "I don't believe in a utopian world where everybody's transacting anonymously. I don't think it makes economic sense," he says. "But it makes economic sense for there to be no middle-man, and that's the answer of crypto."

Massad argues that it's in the best interests of policymakers to bring stablecoins within the regulatory framework to minimise risks and capitalise on their potential to improve payment efficiency. "If we don't create [a regulatory framework] soon, we may find that dollar-based stablecoins grow anyway, under legal frameworks that are not to our liking. That's essentially what happened with the Eurodollar market." Massad continues in the same essay, titled The U.S. Can Make the Rules on Stablecoins, or It Can Take Them: "Few of us notice that—our credit cards, mobile banking and phone apps seem to work just fine. But although our system is safe and reliable, it is slow and expensive compared to what's possible. The burden falls most heavily on the poor, who pay a lot just to use their money." ■

Q+A

Should stablecoins become a payments staple?

Wiehann Olivier, FinTech and Digital Assets Lead for Forvis Mazars South Africa, talks to Luno about the profound potential of stablecoins in remittances and corporate transactions.

Luno: What is the current situation with stablecoin use in Africa?

WO: When we talk about the uses for crypto in Africa, we generally look at the potential impact on the underserved and underbanked population, including the migrant workforce, which is significant on the continent.

Bitcoin was initially designed to facilitate peer-to-peer payments over the Internet without an intermediary required to finalise the transaction. In the financially underserved demographic, there is no intermediary, so it's a match made in heaven. These types of blockchain-based cryptocurrencies can be a solution to the problem of the underbanked and financially underserved, especially for migrant workforces.

Crypto, especially stablecoins, have also been used as a hedge against currency devaluation in some regions. We've heard of people receiving their salary, trading it on a crypto exchange for USDC stablecoin, and then changing it back to fiat currency as and when they need to spend the money. They aren't always able to pay for day-to-day expenditure directly on-chain, which results in them paying the spread or a fee to cash it out into their local currency, but an increase in adoption will improve will improve one's ability to make these types of payments.

Luno: Apart from Nigeria and South Africa, what are the other growing crypto hubs in Africa?

WO: Kenya and Mauritius stand out. From a fintech perspective, M-PESA, a mobile phone-based money transfer, financing and microfinancing service, is massive in Kenya. The country has seen mass adoption of the type of platform that people use in their daily lives to circumvent banking services. The country has a high mobile penetration rate, which means that they are comfortable enough making payments using their phones. You can argue that crypto use for payments in the country could be relatively high in future because Kenyans are comfortable using these types of mobile applications for payments.

Regulators in Kenya haven't taken a clear stance on crypto, though, but I think the Kenyan government and Reserve Bank appreciate that in future crypto is going to play a significant role in the economy.

Mauritius also stands out. Policymakers have introduced several new laws and regulations that govern virtual asset service providers in the country. I don't think we'll see the same type of products coming through Mauritius as we see throughout the rest of Africa. Crypto will likely be used as a speculative asset class – we'll see more funds and investment vehicles being created in this jurisdiction as a speculative investment rather than an alternative means of payment. It will be interesting to compare how crypto use develops in these countries.

Luno: Where do you see the utility use of crypto going? It's arguably going to be tougher for regulators to agree on the payment use case than the investment case. In Africa, do you see stablecoins being integrated into the financial fabric?

WO: I've always thought of cross-border payments, remittances and local payments as crypto's killer application, but we've seen it break out as a speculative asset class. This is due to unique characteristics such as decentralisation and limited supply in some cryptos, but it wasn't the original idea.

I see the tokenisation of real-world assets as the other killer application, specifically for the African market, where it's going to completely change the way we do business and how we transact. Look at BlackRock, who listed one of their funds as an Ethereum-based token, which allows investors to transact with the issued token on Ethereum. Now apply this to Africa where financial infrastructure is often a limiting factor. African businesses can tokenise shares to raise money from the global investment community in this way, instead of having to list their company on a stock exchange.

Taking receipt for exported goods or services in dollar-backed stablecoins will have a significant impact on how African businesses transact, but it will also positively impact their cash flows.

Africa is mineral rich, and some businesses are looking to tokenise commodities like helium gas, for which there's no true reflection of supply and demand. By tokenising this type of commodity, you can get a more accurate idea of the value of the gas, which can then become an asset class in its own right.

I'm backing stablecoins to be used as a non-volatile blockchain-based digital asset. There are risks involved, including protocol and counterparty risks. Issuers such as Circle and Tether undergo audits, but more bank-like regulation must be applied to these issuers. Individuals should be able to utilise central bank digital currencies (CBDCs) and stablecoins to transact on a day-to-day basis.

I think CBDCs and stablecoins provide users with a choice of how they want to transact. I'd like to see stablecoin adoption continue to grow in the near future, as I believe it could have a significant impact on the entire African population.

Luno: What are the implications?

WO: Essentially, it allows individuals to take control of their money by circumventing banks where it's safe to do so. Remittance senders currently pay between 5-7% fees on a transaction. If they are able to send these remittances using blockchain technology, it's taking those funds away from the traditional banks and putting it back into the hands of the actual person sending and receiving those funds. Crypto payment rails could have a significant impact on savings for individuals who want to transact, even on a local basis.

Stablecoins can also play a key role in facilitating trade. In the current system, making a cross-border transaction using traditional banking rails can take anywhere between three to five days for a transaction to be settled, and, of course, there's a hefty fee payable on that transaction. But using a US-pegged stablecoin, also keeping in mind the arbitrage possibilities between South Africa and other countries, the funds can clear within three minutes.

Going through an over-the-counter (OTC) desk or using an exchange, that stablecoin can be liquidated into fiat currency, all within a day. Transaction fees are also going to be minimal, which can be cancelled out by the arbitrage opportunity. Considering this, it's more feasible accepting stablecoins from foreign customers as opposed to actual fiat currency paid through banking rails. From a cash flow perspective, that will have a significant impact on businesses in Africa and South Africa when exporting goods and services.

Luno: If these payment rails are designed to bypass banks, how does it eventually feed into the economy?

WO: If the funds come in as stablecoins, it's going to need to be spent eventually. These goods and services are rendered to generate income for the business. As a South African business owner, for example, I'm not going to keep it in a hardware wallet or on an exchange. I want to liquidate it into fiat currency and use it.

People have to use it for their daily expenditure, and from this perspective, it has a positive impact on the economy as it still brings funds back to the country where the individual is domiciled.

Luno: The big question is whether this is actually happening? Are people using it for remittances and are corporates using stablecoins?

WO: When I speak at conferences I give a presentation to show our test case of how we used stablecoins to receive a cross-border payment. I show the process we followed from the start to end: The address being whitelisted, executing the payment, sending that through an OTC desk, and how it's immediately switched into fiat currency and paid on the same day. From the time of whitelisting the crypto address at 14h00, and having South African rands in our bank account by 16h00 the same day. There is some counterparty risk, volatility risk and protocol risk, but it's for 3-5 minutes before it's converted into fiat and paid into your account.

There is a significant benefit but I don't think businesses are using it to the extent that they could be. I appreciate that you need a supplier willing to pay in stablecoins.

So, it's not only acceptance of the technology from a South African business or retail perspective, but also of the person, and the jurisdiction they are in, sending the funds.

Luno: Regulatory clarity seems to be one of the obvious hurdles for adoption, what's the next step for regulators and crypto providers?

WO: Countries have broadly approached crypto regulation in three ways. They've banned it from the start, as we saw in China. They've tried to aggressively regulate it, as in the state of New York, and then there's also jurisdictions that took the wait and see approach, which is what South Africa did.

Regulation must be accommodating of the technology, which will have a positive impact on adoption in a specific jurisdiction, but there is guidance and, contrary to current thinking, you can apply the existing regulations to crypto funds flowing into Africa. People need to be aware of how these existing regulations apply to the asset class, because digital assets and cryptocurrency have a stigma of being unregulated.

It's merely the virtual assets service providers that weren't, and in many cases still aren't regulated in specific jurisdictions. All the other regulations, such as income tax, exchange control, and consumer protection already apply to these providers.

It's now the industry that's being regulated to make it safer for institutional investors and retailer investors to enter the market and be comfortable transacting in the market. The regulation does have a significant impact on the overall adoption, and will allow this network effect of adoption of these digital technologies.

There's a lot of things that's been happening over the recent years, though. The US economy in its entirety is a different beast, especially from a regulatory standpoint, and I think it has opened the eyes of various other jurisdictions. If you think about big players such as BlackRock tokenising assets and banks utilising the technology, and possibly offering custody solutions in the near future – these various elements will start to add up.

The industry is expanding and contracting continuously, and each time it's expanding, it just ropes in more intermediaries and more individuals who get familiar with using the asset class. I think it's just very important that existing businesses, and financial institutions and investors continue to use the asset class to reap the benefits it has to offer. ■

Thank you to the individuals and companies who contributed their invaluable insights and time to this report.

The next Luno Crypto Report will be available for download in October 2024.