

State of the USDC Economy

Welcome to the utility value
phase of digital currency



A retrospective on 2022
and look ahead to 2023



DOLLAR DIGITAL
CURRENCIES *are* DRIVING
the NEXT EVOLUTION *of*
MONEY, PAYMENTS,
and FINANCE

Ten years ago, I co-founded Circle with the vision that traditional money could be brought natively onto the internet in the form of digital currency and made available on open, interoperable, global networks. Ushering in a world of frictionless value exchange that mirrored the frictionless information exchange and communications that marked the first decades of the internet has animated Circle's work ever since.

In 2013, the technological maturity, industry understanding, and regulatory awareness of digital currency and blockchain technology was virtually non-existent. Indeed, the necessary conditions for building a protocol for "dollars on the internet" did not even exist. We knew that this would be – at least – a ten to twenty year journey and that the impact of digital currency on the open internet would be even more profound than the internet of information.

Now, ten years later, USD Coin (USDC), the world's leading regulated dollar digital currency, is breaking into the mainstream. Across nearly every metric and trend, the USDC Economy is growing, healthy, and on its way to being a major force in facilitating economic activity at internet scale – reaching people and markets that would not be possible if to be banked depends on fixed infrastructure or financial walled gardens.

While the era of speculation on bitcoin and other crypto assets has come through a tumultuous year, digital currencies such as USDC herald the necessary shift into the utility value phase of blockchains and programmable, composable always-on money. In the internet age, promoting these responsible innovations is not about competing with the traditional financial system, but rather completing unfinished work.

To put the opportunity in perspective: dollar digital currencies like USDC could begin absorbing significant portions of the more than \$2 trillion in payments industry revenue¹ and become a new digital expression of the \$21 trillion M2 money supply.²

Merchants, to take one example, understand the significance of this evolution. More than 85% are prioritizing enabling digital currency payments.³ While nascent, point-of-sale payments for USDC are here.⁴ And many traditional payment providers – including Checkout.com, Mastercard, Plaid, Stripe, Visa, Worldpay from FIS, among others – are building with USDC to make it as easy as possible for merchants to accept it.

Public blockchain infrastructure is going through its "dial-up to broadband" upgrade, fostering near-instant, highly-secure, programmable and low-cost transactions. Web2 builders and developers are flocking to Web3, as more and more startups, enterprises, and traditional payments and financial services firms look to connect into the internet of value.

Meanwhile, policymakers globally are sharpening their focus, ushering in much-needed regulation for how trusted digital currencies can be supervised – in a consistent and harmonized manner – by banking and payments regulators.

Since our founding, Circle has been animated by the idea that a new global economic system could be built on an internet-native foundation – open, global and interoperable public internet infrastructure for the storage and transmission of value, and ultimately for the intermediation of capital more broadly. That vision is becoming a reality and 2023 will be an important year in the next evolution of money, payments, and finance.

As our first State of the USDC Economy annual retrospective spells out, the green shoots of global utility value are sprouting up everywhere, catalyzing a wave of open, responsible financial services innovation that can improve pathways to prosperity, while protecting the integrity of the global financial system.



Sincerely,
Jeremy Allaire
Co-Founder, Chairman and CEO

Contents

About Circle	3
Dollars at Internet Speed	4
USDC is Always Redeemable 1:1 for U.S. Dollars	5–6
USDC Macro Perspective: Always-on Tokenized Cash	7–10
Circle’s Approach to Crime and Compliance	11–13
State of the USDC Ecosystem	14–15
Building a More Inclusive Financial System	16–17
The Global Outlook for Digital Dollars is Bright	18
Glossary	20
Appendix	21–23

About Circle

Circle is a global financial technology firm that enables businesses of all sizes to harness the power of digital currencies and public blockchains for payments, commerce, and financial applications worldwide.

Circle is powering always-on, internet-native commerce, payments, and custody and is the issuer of USD Coin (USDC) and Euro Coin (EUROC).

Circle's platform APIs, Web3 developer offerings, and institutional-grade custody services are giving rise to a new generation of applications to enable companies to programmatically power every financial transaction across their business.

Whether it is managing their internal treasury, making international payments, or automating supply chains, Circle's open and programmable platform and APIs make it easy for organizations both large and small to run their internet-scale business.

Learn more at circle.com.

Our team is fostering a new era of global financial technology



Jeremy Allaire

Co-Founder, CEO & Chairman of the Board



Elisabeth Carpenter

Chief Operating Officer



Dante Disparte

Chief Strategy Officer & Head of Global Policy



Li Fan

Chief Technology Officer



Nikhil Chandhok

Chief Product Officer



Brian Christman

Chief People Officer



Kash Razzaghi

Chief Business Officer



Jeremy Fox-Geen

Chief Financial Officer



Flavia Naves

General Counsel



Sherice Torres

Chief Marketing Officer



Ryan Feit

CEO & Co-Founder, SeedInvest



Mandeep Walia

Chief Compliance & Risk Officer



Dollars at Internet Speed

USDC is a digital dollar – also known as a stablecoin or e-money token – that is available 24/7 and moves at internet speed. USDC lives natively on the internet, running on the world’s most advanced blockchains, with the primary ones being carbon neutral or representing constantly-upgradable financial markets infrastructure. Through 2022, USDC has powered more than \$8.6 trillion in cumulative on-chain transactions, and is used every day as a digitally-native store of value, unit of measure, and payment innovation.

Always on. Always open.

USDC transcends borders and banking hours. As a digital dollar with global reach, USDC can be available whenever and wherever you need it. It is easy to send USDC around the world, pay for goods and services, or save for the future. Anyone with an internet connection can send, receive, and save USDC.

Instant cash flow. All day. Every day.

No more waiting to finalize a transaction and withdraw cash. USDC makes the concept of settlement times obsolete with payments that can circle the globe and land in your account as fast as email. Imagine FX trades of any size that can take seconds to complete – that is the power of USDC.

Dollars that make cents.

It should not cost money to use money. Say goodbye to paying \$50 to send a wire transfer – say hello to a fraction of a cent. Merchants can avoid incurring 2.9% fees on credit card payments, benefit from instant cash flow, and pass back savings to customers.

Money you can program.

Always-on digital dollars, paired with censorship-resistant smart contracts, represents a breakthrough innovation that is unmatched in traditional finance. Digital dollars and smart contracts can, for example, result in automated streaming payments to content creators, tamper-proof escrow systems, or any number of novel payment structures that can be created with code, thus fulfilling the promise of programmability and composability of money. Programmable money enables deeper forms of trusted and safe global payments built on the internet, while promoting a wave of responsible innovation and economic competitiveness.

USDC is Always Redeemable

1:1 for US Dollars

Since the 2018 launch of USDC, Circle has managed the USD assets backing USDC (the “USDC reserve”) so that it is redeemable 1:1 for U.S. Dollars at any time. In fact, more than \$213 billion⁵ USDC have been redeemed since inception through December 2022. To meet this promise, Circle has operated USDC with several principles in mind:

Keep USDC structurally safe

- Roughly 80% of the USDC reserves are held in 3-month U.S. Treasuries, which are among the most price-stable and liquid assets in the world. By the end of January 2023, we will move these reserves into the Circle Reserve Fund, 100% owned by Circle, managed by BlackRock (the world’s largest asset manager), and custodied by The Bank of New York Mellon (the world’s largest custodian).
- Roughly 20% of the USDC reserves are held in cash, diversified among eight U.S.-regulated banking partners, including a pioneering Circle Impact program for allocating a share of reserves to often underrepresented community banks and minority depository institutions (MDIs), which helps ensure the future of money is more inclusive than the past.
- The USDC reserves are held in segregated accounts, for the benefit of USDC holders, all entirely separate from Circle’s operations. The USDC reserves are bankruptcy remote – they are afforded protections under U.S. laws and would not form part of the creditor’s estate in the unlikely event of a Circle bankruptcy.
- Circle is a financial infrastructure company; our business model is to minimize risk, not to take risk.

Be transparent about USDC and seek independent oversight

- Circle is well regulated and licensed under U.S. state money transmission licenses, the state regimes that govern the likes of major U.S. payments entities, including Apple, PayPal, and Stripe. We are also registered as a money services business (MSB) with the U.S. Department of the Treasury, which means we adhere to know your customer (KYC), anti-money laundering (AML), and countering the financing of terrorism (CFT) requirements, including sanctions compliance. We also have an E-Money Issuer License from the U.K. Financial Conduct Authority (FCA); a Bermuda Digital Asset Business License from the Bermuda Monetary Authority; and recently received In-Principle Approval as a Major Payments Institution License holder from the Monetary Authority of Singapore (MAS).
- We have published monthly attestations from Grant Thornton – a leading global accounting firm – to provide independent confirmation that we hold at least as much in dollar-denominated reserves as the amount of USDC in circulation. They are all publicly available on our website going back to the launch of USDC in 2018.⁶

- Circle, which holds the USDC reserve, has been audited by Grant Thornton, a leading public accounting firm. The audits for 2019, 2020, and 2021 (to U.S. public company standards) have been filed publicly with the U.S. Securities and Exchange Commission (SEC). Going forward, Circle will be audited by Deloitte.
- We are committed to continually enhancing our disclosures regarding the USDC reserve. The Circle Reserve Fund, an SEC registered 2a-7 government money market fund, wholly owned by Circle, offers daily disclosure of the fund's holdings of U.S. Treasuries comprising the USDC reserves, subject to the independent oversight of BlackRock and the fund of the Board.

Build a resilient and world-class approach to risk & treasury management

- Circle has a team of seasoned financial professionals who have built financial control infrastructure that meets U.S. public company and regulated financial institution standards.
- Our operational treasury infrastructure is robust to meet the needs of a growing and always-on digital economy. We have automated 24/7 minting of USDC and redeeming through the Circle Account and API calls to make everything with USDC as seamless and safe as possible for our customers.
- Circle has implemented a comprehensive, industry-leading enterprise risk management framework across all aspects of the company. We have created a robust, risk-intelligent operating environment by embedding proactive and holistic identification, assessment, mitigation, monitoring, and reporting of risks and controls within all our business and product lines, functions, and processes.

Our history of pioneering transparency underscores our commitment to providing USDC holders and the general public with open, timely reporting on how we minimize risk and maintain liquidity in the USDC reserve. As policy and regulatory requirements evolve and as better reporting opportunities arise, we intend to adjust our approach and continue to enhance transparency into our operations to offer greater market confidence.

USDC Macro Perspective: Always-on Tokenized Cash

While use of cash in payments is declining in many parts of the world, people have generally preferred this physical form of money because of its convenience and simplicity. However, as our lives have become increasingly more connected, demand for truly-digital money, such as USDC, has increased.

Until a few years ago, however, there was not an internet-native form of money that could be transacted near-instantly, globally, and in seamless integration with digital commerce.

That is where tokenized cash – using open, public blockchains as the settlement layer – enters the picture. USDC is a tokenized representation of the U.S. Dollar on blockchains and was launched in 2018. At approximately \$45 billion,⁹ USDC's circulation is a small fraction compared to the total circulation of physical U.S. Dollar bills, which is around \$2.3 trillion.⁹ That said, USDC has grown with unmatched speed – 860%¹⁰ average year-over-year growth since its launch compared to 8%¹¹ for that of physical dollars over the same time frame.

Three colliding trends suggest that tokenized cash like USDC will become an essential part of the economy and a widely accepted form of money.

The rise of e-commerce and device-centric payments

Globally, e-commerce represents about 21% of total retail sales but is expected to grow to 26% of all sales in 2026.¹² Likewise, mobile contactless payment is forecasted to grow 221% over the next five years,¹³ a trend buoyed by the sustained shift from physical cash to digital payments instruments experienced at the outset of the pandemic.¹⁴ Businesses understand these trends well, with about 85% of merchants expecting digital currency payments to be ubiquitous in the next five years.¹⁵

The widespread recognition that the costs of cross-border payments and remittances are far too high and the speed of these transactions is far too low

The G20 has made tackling the challenges of cross-border payments a priority¹⁶ and the World Bank notes¹⁷ that remittances are growing at double digit rates in some countries. Because tokenized cash like USDC runs on inherently global blockchains – which have low barriers to entry and minimal transaction costs – USDC is playing a growing role in facilitating cross-border payments and remittances.

The declining use of cash as a medium of exchange

People mostly abandoned cash during the pandemic and while cash usage has returned to pre-pandemic levels in some countries, estimates suggest the decline in its daily use will continue.¹⁸

So where, exactly, does USDC fit into the current global payments environment? Data paints a compelling picture that USDC's inherent attributes are already being leveraged to propel this new landscape of payments infrastructure – a clear shift from past assessments that the prevalent use case for a regulated digital dollar is speculation.

Always-on programmable money

In 2022, USDC facilitated about \$4.5 trillion worth of transactions on the Ethereum blockchain alone.²⁰ Among these transactions, \$2.7 trillion, or around 60% of the transactions, are related to smart contracts. The high percentage of smart contract-enabled transactions highlights the importance of USDC in not only facilitating faster and cheaper payments, but also in enabling the programmability of money.

The applications that run on blockchains – and by association the programmability of USDC – gave rise to a wave of experiments in non-intermediated finance that challenges the balance sheet-heavy intermediation model of present-day financial architecture. These innovations range from collateralized lending contracts that margin and liquidate in real-time, to automated market makers that rival the liquidity and market depth of centralized limit-order books. Adoptions of these transformative technologies by either incumbents or new entrants can reshape finance to work more efficiently and safely for all.

Implied economic activities

We estimate that USDC has facilitated at least \$30 billion worth of economic activity in 2022.²¹ The range of economic activities are diverse, ranging from consumer digital commerce and corporate treasury services to foreign aid in conflict-stricken countries. We discuss some of these real-world utilities in the subsequent parts of this report.

These diverse economic activities are reflected in the growth and adoption of USDC-enabled wallets, which have surpassed over 2 million on Ethereum-compatible blockchains alone. Over 75% of these wallets hold balances of less than \$100, which is less than typical minimum balance requirements of banking accounts and attests to a prerequisite for addressing financial inclusion challenges.

USDC is non-speculative

The growth of USDC in circulation has largely been independent of the fluctuations in crypto asset prices, as Figure 2 illustrates. This growth can be attributed to a variety of emerging use cases, including business and consumer payments, global commerce, international remittance, foreign aid, and programmable contracts that facilitate new

Figure 1

Comparison of circulation between USDC and dollar cash in circulation¹⁹

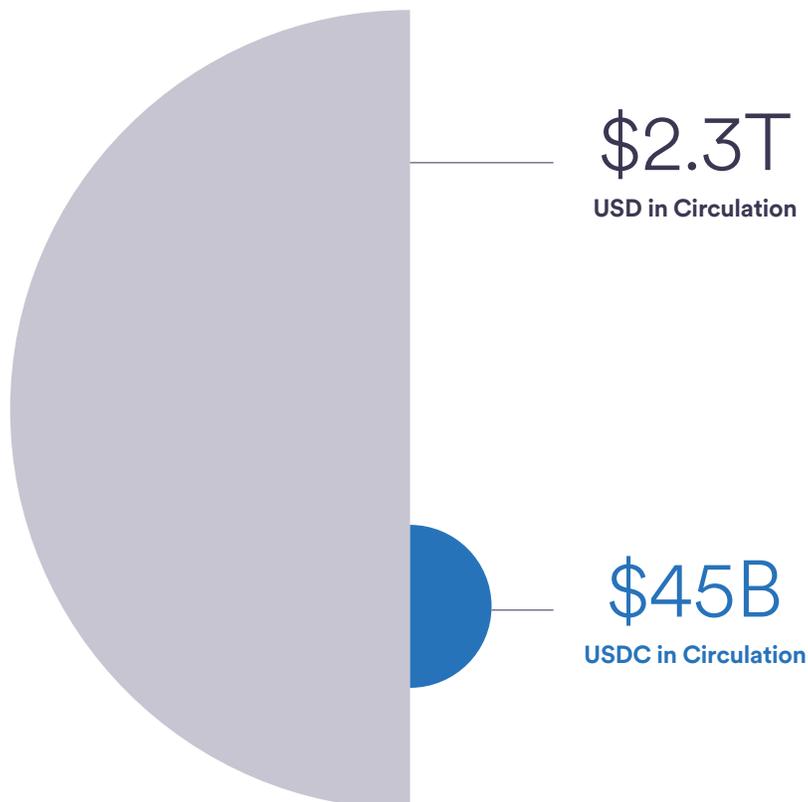


Figure 2

USDC Circulation and Bitcoin Price



ways of transferring, storing, and intermediating values. In short, the full reserve, always-on, and programmable nature of USDC makes it a valuable tool for constructing a more sound and resilient financial infrastructure.

Payment systems, including those that rely on payment stablecoins, are largely centered around financial transactions. For example, economic activity as measured by GDP only accounts for around 2% of Fedwire transactions.²² Similarly, only 2% of foreign exchange market transactions, which have a daily volume of over \$7 trillion, are related to global trade in goods and services. This means that the vast majority of transactions occurring in traditional payment systems are financial in nature and not directly tied to real-world economic activity.

As a comparison, USDC transactions that occur directly between wallets, known as wallet-to-wallet transfers, can be plausibly classified as payment transactions. This is because these types of transfers do not involve exchanges or the use of smart contracts in decentralized finance, making them more likely to be tied to real-world economic activity rather than financial speculation. In fact, about 15% of USDC transactions are wallet-to-wallet transfers – a relatively high percentage when compared to the 2% for non-financialized transfers observed in traditional payment systems. This suggests that USDC may already support a significant amount of real-world economic transactions, as well as financial inclusion goals given the wide geographic dispersion of USDC-enabled digital wallets.

Other measures of financialization also suggest that USDC is not being used primarily for speculative activities. When comparing the ratios of trading volume to circulation, USDC appears to support less trading activity relative to other stablecoins, cash balances held in a leading retail brokerage,

and the overall U.S. Dollar. As shown in Figure 3, the speculative ratio of USDC is around half that of the M2 U.S. money supply, which supports a daily trading volume of over \$4.34 trillion²³ across major asset classes. This indicates that USDC is not being used primarily for speculative purposes, but rather as a general purpose digital dollar.

About 15% of USDC transactions are wallet-to-wallet transfers, which is a relatively high percentage compared to the 2% for non-financialized transfers observed in traditional payment systems. This suggests that USDC may already support a significant amount of real-world economic transactions.

Figure 3 shows the ratio of average daily trading volume to circulation for each respective category. For USDC, the trading volume is the crypto-asset trading volume in USDC-associated pairs. For the U.S. Dollar, the ratio is that of daily trading volume in major asset classes — FX, equities, and fixed income — relative to M2 circulation. Retail brokerage speculative ratio is calculated based on the reported number of customer transactions of a leading retail brokerage firm, multiplied by the average trade size,²⁴ divided by the customer cash balances held in the brokerage. The speculative ratio for trading stablecoins is the market-cap weighted average for Tether (USDT) and Binance USD (BUSD), based on an analogous methodology as the calculation for USDC.

The circulation of USDC also does not correlate with associated trading volume, as illustrated in Figure 4. This lack of correlation can be attributed to the fact that less than 10% of USDC are held in exchanges. Overall, these data points suggest that USDC is not widely-used for speculative purposes and is instead employed as a stable, reliable means of storing and transferring value.

Tokenized cash is a novel concept to most people right now – but in the coming years, users everywhere will likely engage with internet-native, truly digital dollars on open, public blockchains. The implied economic activity of USDC is small relative to traditional U.S. Dollars, but growing quickly – and will likely play a larger role in the global economy as it becomes a leading medium of exchange for commerce.

Figure 3
Speculative ratio

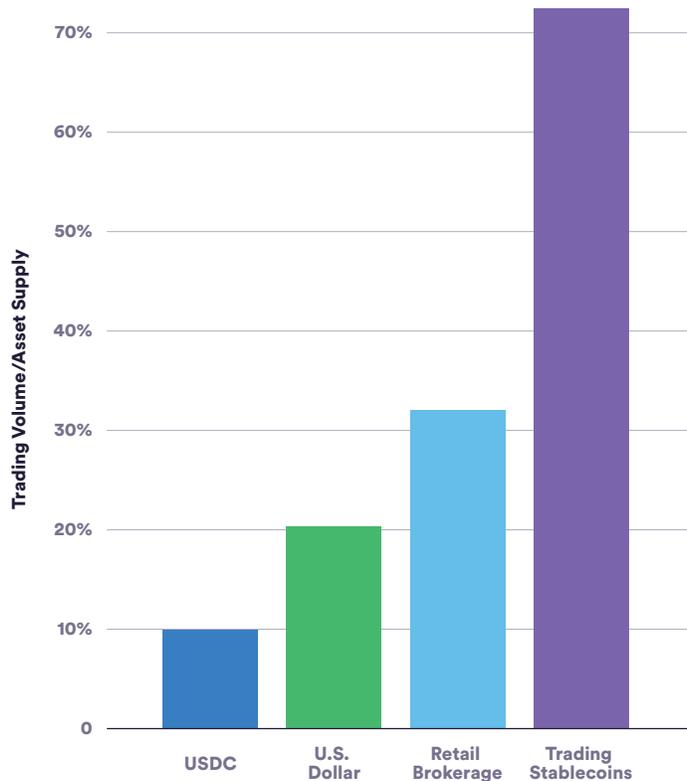
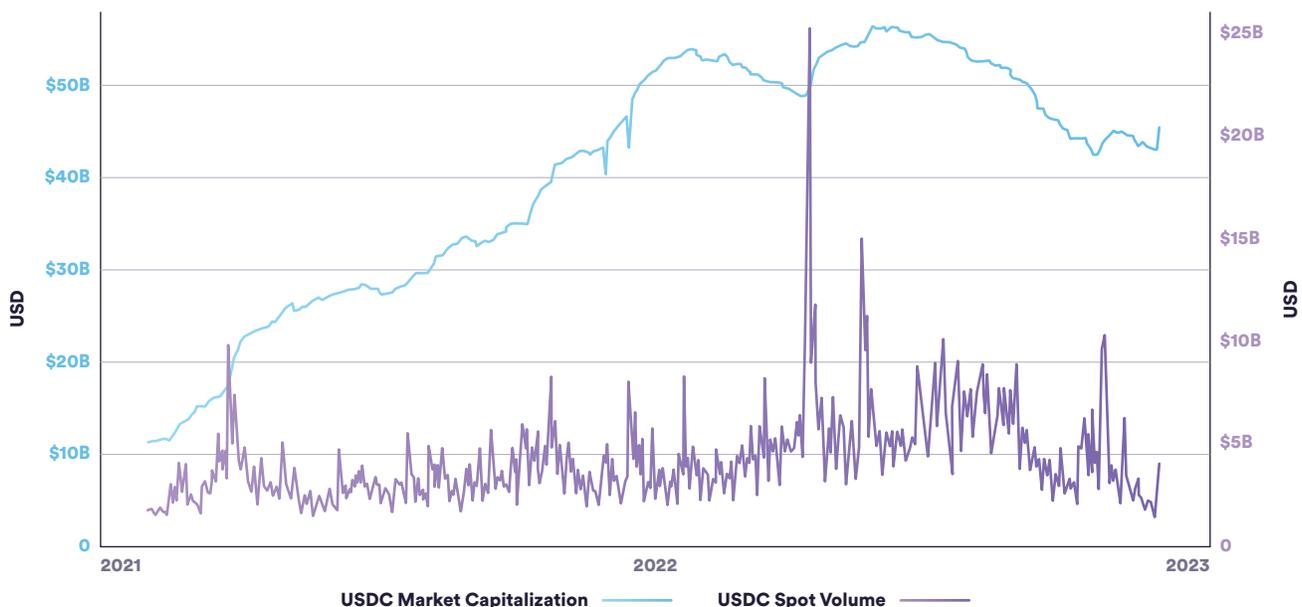


Figure 4
USDC circulation and trading volume in associated pairs



Circle's Approach to Crime and Compliance

Circle takes its anti-money laundering (AML), Countering the Financing of Terrorism (CFT), and sanctions obligations seriously. We believe that the safety and integrity of the international financial system, including preventing and detecting illicit financial flows, are a critical part of our company's vision for providing well-regulated, internet-native financial services around the world.

We view this as a prerequisite to protecting customers and the financial system, building trust, and achieving global, mainstream adoption of digital currency and public blockchain-based payments.

Circle actively applies a mix of traditional compliance controls with innovative technologies, as we believe this is essential for the safety and soundness of the entire economy. The open and transparent nature of blockchain transactions, along with the ability to irrevocably record money flows, provide new tools for combating bad actors and illicit activity. Industry leaders work closely to assist law enforcement with monitoring and tracing transactions as they operate on a public ledger.

In 2022, Circle announced two key initiatives aimed at increasing financial-crime compliance across the industry, strengthening the security of the financial system, and preserving individual privacy – a value that should be a first principle in democratic societies.

TRUST

The Travel Rule Universal Solution Technology (TRUST), announced in February 2022,²⁶ is an industry-driven solution designed to comply with a requirement known as the Travel Rule while protecting the security and privacy of customers. It is a platform that allows digital asset exchanges to securely

send information legally required by the Travel Rule. The core goal in contributing to TRUST was to achieve compliance with the Travel Rule,²⁶ while fully honoring customers' expectations over how their information is handled. To do this, important safeguards were incorporated as part of the TRUST solution:

- 1. No central store of personal data:** We do not centrally store sensitive customer information where it could be targeted by an attacker or misused by a third-party. The required information is only directly sent from one TRUST member to another, through end-to-end encrypted channels, and the receiver is required to safeguard it.
- 2. Proof of address ownership:** TRUST includes a mechanism for the receiving exchange to prove that it is the owner of the receiving digital wallet address before customer information is sent, ensuring that the right information is sent to the right exchange.
- 3. Core security and privacy standards:** We require all TRUST members to meet core AML, security, and privacy requirements before joining the solution. We are partnering with Exiger, a global market leader in technology-enabled compliance and risk management solutions, to help us meet that bar, and to provide ongoing compliance support.

Unlocking decentralized identity with Verite

In addition to TRUST, Circle was also a launch partner of Verite,²⁷ a set of decentralized identity standards developed with support from Block, Coinbase, and others. Verite enables organizations to issue and verify digital identity credentials for users and institutions participating in the crypto economy. Unlike alternative approaches to digital identity that involve proprietary tokenization or centralized approval mechanisms, Verite is decentralized, open-source, and free for anyone to build upon.

Open, public blockchains have shifted ownership and governance from large centralized companies to individuals. The absence, however, of a robust, open-source standard for sharing and verifying online identity has created many challenges for developers and end-users alike. That need led to the development of Verite, among other Circle-led decentralized identity, verification and authentication standards.

With Verite, credentials can be issued and used to prove identity claims for an unbounded number of use cases, including facilitating compliance, AML, and KYC requirements, accredited investor status, social reputation, NFT provenance tracking, and more – without the need for participants to disclose personal data. These credentials are portable, incorruptible, and easily stored in a digital asset wallet. Critically, credentials are owned by users, allowing total control over when and how identity attestations are accessed by different organizations or protocols.

The potential benefits of this are wide-ranging, including allowing those who lack traditional forms of identification to participate in the global financial system and making it safer for people to participate in decentralized finance (DeFi).

Circle is already taking steps to build solutions for issuing and verifying KYC credentials for individuals and institutions to participate in DeFi, working alongside trusted ecosystem leaders including Algorand, Block, Coinbase, Compound Labs, ConsenSys, Espresso Systems, Hedera Hashgraph, Ledger, MetaMask Institutional, Phantom Technologies, Solana Foundation, Spruce, and the Stellar Development Foundation.

Decentralized identity has long been the “holy grail” of Web3 since the earliest days of the internet. With Verite, Circle is primed to contribute to the foundation of the next wave of Web3 innovation and mainstream adoption.

Teachable moments from 2022: Ukraine and Tornado Cash

Last year offered the world a series of teachable moments about the important role blockchain technology plays – at least in the hands of responsible actors – in combating illicit finance, preserving individual privacy, and helping send value to people who need it most.

Open, public blockchains provide more insight into transactions than the traditional financial system. Private-

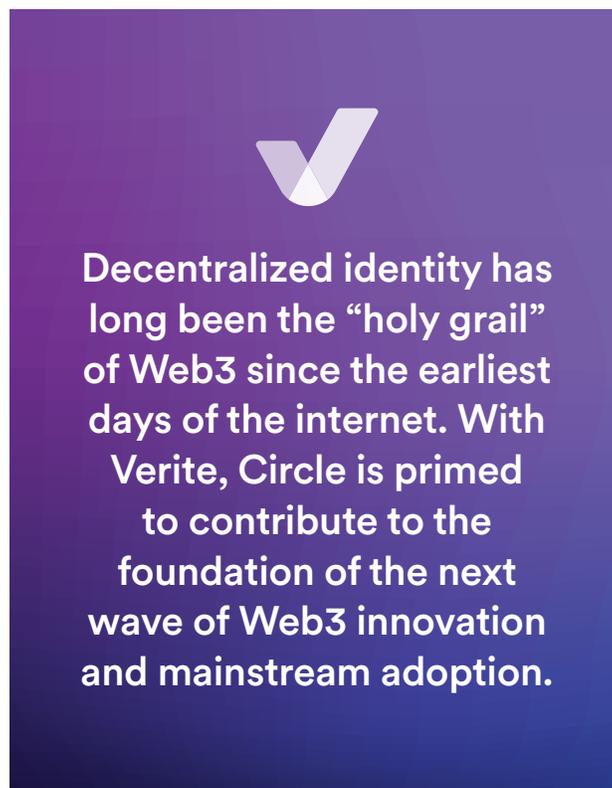
sector financial integrity tools are able to precisely track how state-sponsored bad actors have attempted to hide illicit activity using blockchain technology.²⁸

That open, public blockchains were a net benefit to society became clear during Russia’s invasion of Ukraine, to take one example. Amid concerns Russia would use open, public blockchains to evade sanctions, global policy leaders, including Secretary of the U.S. Department of the Treasury Janet L. Yellen, said it was hard to imagine.²⁹

Instead, open, public blockchains became an immediate tool to help Ukrainians get protective military equipment in the early weeks of the invasion – more than \$60 million in just a few weeks.³⁰ As Ukraine’s Vice Prime Minister

and Minister of Digital Transformation, Mykhailo Fedorov, said “While Russia uses tanks to destroy Ukraine, we rely on revolutionary blockchain tech.”³¹

As detailed later in this report, open, public blockchains and corruption-resistant payments have also been used to facilitate humanitarian aid to doctors fighting COVID-19 in Venezuela and are starting to be used to help internally-displaced persons in Ukraine in partnership with UNHCR, the U.N.’s refugee agency, as well as International Rescue Committee (IRC).



Sanctions on the protocol ‘Tornado Cash’ highlight clear policy opportunities for world leaders

The tension between the twin values of combating illicit finance and preserving individual privacy became clear when the Office of Foreign Assets Control (OFAC), a financial intelligence and enforcement agency of the U.S. Department of the Treasury, sanctioned the mixing service Tornado Cash.³²

Well-regulated and trusted entities like Circle are obligated under financial crime compliance requirements to conform with sanctions, AML, and CFT regulations. Still, sanctioning the protocol itself was a new escalation that raised important policy issues about individual privacy. It is indefensible and untenable that tools and software are co-opted by bad actors who remain unchecked. Public blockchains, and the cottage industry of blockchain forensics and financial analytics they have enabled, provide financial services optionality for law-abiding people, who should enjoy privacy and financial access as a human right, while giving bad actors and illicit finance no place to hide.

There is a crucial policy window for financial integrity bodies such as the Financial Action Task Force (FATF) to ensure the presumption of privacy as a democratic first principle is protected rather than becoming subject to compliance or regulatory overreach. At the same time, it is critical to continue outlining the art of the possible with digital assets being a tool for empowering people and micro-targeting payments to good actors, even in complex, conflict-ridden places where the formal economy may be in the hands of adversaries.

Key policy opportunities include:

- Modernization of the 52-year-old Bank Secrecy Act in the U.S. to recognize key distinctions between protocols, software, and non-proprietary open technologies and the actions, methodologies, and efforts of illicit actors.
- Continuous development and support of industry-wide market integrity and financial crime compliance tools, technologies, and standards that promote collective defense – while keeping blockchain-based finance open and universally accessible.
- Encouragement of the use and development of privacy-preserving technologies, while continuously refining financial integrity standards, norms, and protections that encourage and harmonize the legitimate use of digital assets and open blockchains.
- Protection and defense of open source software and its normalization in regulated financial services as tools that promote competition, interoperability, and the preservation of democratic values, while enabling exponential gains in financial integrity.

- Development, dissemination, and normalization of the use of privacy preserving decentralized identity, authentication, and financial integrity standards, protocols, and tools.

Circle looks forward in 2023 to continuing to work with regulators, policymakers, and others to continue to find ways to combat illicit finance, preserve individual privacy, and use open, public blockchains to deliver aid and financial access to the people who need it most.

State of the USDC Ecosystem

Growing USDC from \$0 to \$45 billion in circulation in four years is not something we could have done alone. Circle has always prioritized working closely with developers and innovators who are committed to leveraging digital dollars on open, public blockchains to reimagine money, payments, and finance.

This community has always been an integral part of our story – in fact, when we first launched USDC in 2018 we did so with the support of 30 exchanges, protocols, platforms, applications, and wallets. There has been a series of milestones in terms of the growth – and quality – of the USDC ecosystem that merit attention:

- USDC is now available natively on eight blockchains, each with their own distinct features and qualities, and is the dominant digital dollar on many of the top 10 blockchains by total value locked as of December 2022.³⁴
- Wallets around the globe enabled support for USDC – so that USDC can be used to send, spend, and save in more than 190 countries.
- 200+ protocols integrate with USDC, giving users the ability to leverage USDC to donate to charitable causes, lend and borrow, trade, buy NFTs, and more.
- Blockchain-based games and platforms such as Big Time, Axie Infinity, Blockade Games, and NBA Top Shot seamlessly integrate with USDC.
- Circle entered into strategic partnerships with companies like Robinhood³⁵ and Block’s subsidiary TBD,³⁶ saw companies like Stripe and Twitter support paying creators with USDC,³⁷ and has continued to build out the role USDC plays in traditional commerce by partnering with leading companies like Checkout.com,³⁸ Mastercard,³⁹ Visa,⁴⁰ and Worldpay from FIS.⁴¹

USDC is the Leading Digital Dollar on Multiple Blockchains⁴²

Blockchain	USDC Circulating Supply	Settlement Speed	Transaction Fee
 ethereum	\$41,119M ⁴³	~180s ⁴⁴	\$0.50 ⁴⁵
 SOLANA	\$985M ⁴⁶	~0.5s ⁴⁷	< \$0.01 ⁴⁸
 polygon	\$858M ⁴⁹	~3s ⁵⁰	< \$0.01 ⁵¹
 AVALANCHE	\$826M ⁵²	~1s ⁵³	< \$0.01 ⁵⁴
 ARBITRUM	\$640M ⁵⁵	~3s ⁵⁶	< \$0.01 ⁵⁷

A full catalog of applications and businesses that support USDC is available at circle.com.⁵⁸ In addition to working with others, we announced new products and services to help developers build with USDC, including:

- The Cross-Chain Transfer Protocol to help developers create seamless user experiences for moving and transacting USDC natively across blockchains.⁵⁹
- A full-stack Web3 services suite, made possible in part by our acquisition of CYBAVO, a pioneer in core digital asset security, custody, operations, and blockchain infrastructure platform service.⁶⁰ These offerings allow developers to offload blockchain infrastructure-related costs, mitigate security risks, and remove the operational complexities of smart contract development.
- Enabling Apple Pay for our customers so that blockchain-native businesses can allow their customers to quickly checkout using the devices they carry everyday and settle directly in USDC.⁶¹

We know there is one constant when it comes to blockchain technology – it is ever changing. That is why, for 2023, we expect to launch native USDC on more blockchains – continuing to build network effects that make it easy for innovators to access and use USDC. Our Cross-Chain Transfer Protocol is expected to go live early this year, which will allow developers to move USDC to any supported ecosystem, all in an open and user-directed manner at the speed of the internet.

Furthermore, the Cross-Chain Transfer Protocol is open and composable. With USDC serving as a universal dollar liquidity layer, developers will be able to build novel cross-chain applications that integrate together the various functionalities of trading, lending, payments, NFTs, gaming, and more – all while abstracting complexity away from the user. This is a critical step towards unlocking mainstream experiences and lighting a path for a billion new users to enter the always-on digital assets economy.

We also are dedicating time to building an open merchant payment platform to facilitate seamless, efficient, and frictionless transactions between merchants and consumers. This platform is designed to give merchants the utmost flexibility and simplicity in payment acceptance and settlement in USDC. It features a single API integration for accepting global payments across digital assets, cards, and bank transfer methods, along with best-in-class developer experience and tooling.

All told, we aim to empower millions of developers in rewiring the global financial system – creating a more open, equitable, and internet-native foundation for the frictionless exchange of value. We expect USDC to be *the* trusted medium of exchange to help usher in this transformation because of the thriving ecosystem of developers and innovators who have played an essential role in bringing USDC to where it is today.

Building a More Inclusive Financial System

In 2013, Circle was founded on the principle that open, public blockchains and digital currency would make the global economic system more efficient, resilient, and inclusive for people everywhere.

Nearly ten years later, that vision has crystallized. People and businesses worldwide are connecting and transacting with each other through a system that has the reach, accessibility, and speed of the internet. Throughout Circle's evolution, we have remained committed to raising global economic prosperity through the frictionless exchange of value. As a company, our ambitions are keeping pace with our growth, and each day we strive to better serve more diverse communities.

In 2021, we established Circle Impact to act as the permanent accelerant of this core company objective – ensuring that Circle maintains and extends its efforts to reach people and communities too often left behind by the traditional financial system. Circle Impact has three pillars: cultivating financial inclusion; driving digital financial literacy; and powering humanitarian aid and disaster relief.

We evaluate these pillars against goalposts set by the United Nations' Sustainable Development Goals (SDGs). As former UN Secretary-General Ban Ki-moon explained, the SDGs provide a “shared vision of humanity and a social contract between the world's leaders and the people.” While distinct, Circle Impact's pillars share a similar underlying purpose to the SDGs: driving tangible outcomes. Here is a look at some of the impact we have advanced in the past year:

Powering humanitarian aid, disaster relief, and charitable giving

International Non-governmental Organizations (NGOs), U.N. agencies, and other development actors have been using blockchain-powered tools to respond to humanitarian crises for years. Circle Impact has been facilitating aid, development, and humanitarian interventions worldwide, spurring public-private partnerships to mobilize faster,

corruption-resistant payments using USDC. With digital dollars riding on open, public blockchains, organizations can better track payments and ensure they go directly to intended recipients. These tools make donations more reliable, efficient, and inexpensive.

We are currently working with leading humanitarian organizations to set up disbursement mechanisms to support those in great need. In December 2022, we were proud to announce blockchain-based aid programs with UNHCR,⁶² the U.N.'s refugee agency, as well as International Rescue Committee (IRC),⁶³ in support of internally-displaced persons in Ukraine. Through this initiative – and in partnership with the Stellar Development Foundation and MoneyGram – UNHCR and IRC will transfer USDC to aid recipients' digital wallets, which can be safely stored while traveling. As needed, USDC can be cashed out in a variety of currencies at 4,500 locations across Ukraine.

During the pandemic, Circle also worked with partners – and in coordination with the U.S. government – to distribute desperately needed aid to front-line medical workers in Venezuela as they battled coronavirus.⁶⁴

Finally, USDC has become an increasingly powerful tool for efficient, real-time charitable and philanthropic giving, uniting communities of purpose at internet scale. Working with leading partners, USDC has become the digital currency of choice in charitable blockchain-powered giving, with more than 70 million USDC used to facilitate donations in 2022.⁶⁵ For beneficiary institutions and charities, estimates suggest USDC **facilitates an average savings of 1.92% and 2.70% on every donation.**⁶⁶ Circle is proud to not only enable this philanthropy, but champion it directly, including a 350,000 USDC and Euro Coin (EUROC) pledge to support Ukraine in its time of greatest need.⁶⁷

Strengthening communities through financial inclusion

The world is an abundant place, but resources and opportunities have not always been equitably distributed.

In November 2021, Circle pledged to allocate a share of USDC dollar-denominated reserves to Minority-owned Depository Institutions (MDIs) and Community Banks across the U.S. These institutions are critical to the economic vitality and financial wellbeing of low-income and underserved individuals, families, and small businesses, as well as the communities they serve. In many cases, MDIs provide people with loans to buy their first homes, capital to fund new businesses, and emergency funds. By placing a share of USDC reserves in MDIs and Community Banks, we hope to strengthen the balance sheets of these vital institutions, thereby strengthening the communities they serve.

Since making this pledge, we have allocated more than \$1 billion USDC reserves in MDIs and Community Banks. Our partnerships with these institutions extend beyond the custody of USDC reserves as we engage communities and partner on broader efforts related to financial inclusion and digital financial literacy. These efforts enable us to invest in community-based initiatives to promote access to low-cost financial solutions for underserved and unbanked communities while introducing new forms of financial technology and innovation.

Driving digital financial literacy

Digital assets are key to unlocking a long-overdue transformation in commerce, but limited access and lack of digital financial literacy has created as many challenges as it has opportunities. The promise of wealth creation and the democratization of finance cannot be achieved unless people are equipped with the tools and information they need to make informed decisions about how best to engage with financial technology. As a company, we have the opportunity to actively drive digital financial literacy. Because nothing worth doing is worth doing alone, we have driven these efforts collaboratively with a range of institutions.

In 2022, we launched Circle U, a repository of financial technology knowledge, providing an introduction to

blockchain-based financial services. The curriculum, which began as an internal tool to educate Circle employees, has since been adapted and expanded as a resource for partners new to digital assets and blockchain, improving general literacy and adoption of the technology. It covers topics ranging from the evolution of money, digital assets, and blockchain technology, to deep-dives on different technology protocol and market issues.

Additionally, in 2022, Circle partnered with four Historically Black Colleges and Universities (HBCUs) and one Hispanic Serving Institution (HSI) to roll out this curriculum to students, educating a rising generation of leaders. Circle U offers these students access to thoughtful and rigorous content, with students who successfully complete the curriculum eligible

for pipeline opportunities with Circle.

Circle has also continued a partnership with Rhodes Business School (RBS) in South Africa, focusing on digital financial literacy as part of RBS's Entrepreneurial and Technological Empowerment Programme (ETEP). In Fall of 2022, RBS students traveled to Washington, D.C. for an exchange program, including an intimate salon with Circle's CEO, Jeremy Allaire, and Chief Strategy Officer and Head of Global Policy, Dante Disparte.

Over the coming months and years, we will continue to build upon the pillars of Circle Impact. This cultivation of financial inclusion, digital financial literacy, and humanitarian aid and disaster relief with corruption-

resistant, real-time payments empowers people and helps us execute on our company's foundational goals.

We appreciate the vastness of human capacity and know it is only through rigorous, honest examination that the future will bend towards progress. As a company, we are deeply committed to building a more open, inclusive, and sustainable financial system. We look forward to partnering with like-minded individuals and organizations to continue furthering these efforts.

In December 2022, we were proud to announce blockchain-based aid programs with UNHCR, the U.N.'s refugee agency, as well as International Rescue Committee (IRC), in support of internally-displaced persons in Ukraine. Through this initiative – and in partnership with the Stellar Development Foundation and MoneyGram – UNHCR and IRC will transfer USDC to aid recipients' digital wallets, which can be safely stored while traveling and cashed out at 4,500 locations across Ukraine.

The Global Outlook for Digital Dollars is Bright

As of the end of 2022, the fundamental promise of privately-issued digital currencies like USDC, which are colloquially known as stablecoins, was met.

On the one hand, a promise of economic parity at all times with the U.S. Dollar, the world's reserve currency, has not only been met, it has been tested through a severe, industry-wide stress test where liquidity and promises for redemption at par were put to the test. While some digital assets and so-called stablecoins like Terra-Luna collapsed under the weight of this basic tenet of regulated dollar digital currencies, USDC proved to be an enduring store of value and flight-to-safety digital currency.

The second major breakthrough in 2022 was the proliferation of real world use cases creating global interoperability between traditional and new payment networks. This convergence proves the USDC economy is not only real, but serves as a crucial bridge between internet-native finance and the real economy.

No other digital asset has evoked more public policy and regulatory debate than stablecoins. This is so because of all of the digital assets in circulation, well-regulated payment stablecoins – or e-money tokens in European regulatory parlance – are the most likely to be durably linked to the real economy, real people, and well inside the perimeter of regulated finance. The reason is simple: despite all the concerns levied against digital assets – many of which have been proven right in 2022 – the promise of well-regulated digital dollars like USDC is fulfilling things that would not be possible with money if it remained in physical form and only traveled on largely-closed networks or analog rails.

As evidenced in this first State of the USDC Economy retrospective for 2022, there is a Cambrian explosion of responsible financial services innovation afoot. Building on USDC as an always-on, regulated, programmable, and composable digital dollar is supporting a wide range of use cases. Critically, these use cases are not about disruption or deleterious competition with the traditional financial systems nor well-regulated operators, but rather about completing unfinished work through converging business models.

Powerful examples of this convergence from 2022 will endure and continue proliferating in 2023, benefiting from increased user and market adoption of digital dollars, as well as global merchant acceptance of payment stablecoins as a settlement instrument. Herein, clear advantages are not only becoming evident; they hold the potential for ubiquity in global commerce.

Some of these advantages include:

- Near-instant revenue recognition
- Near-instant settlement
- Programmability
- Composability
- Growing accounting clarity and harmonized accounting treatment
- Linkages to the real economy and banking system
- Always-on, internet-scale transmissibility
- Universally accessible

When it comes to the adoption of emerging blockchain-based financial services innovations by traditional institutions, watch the actions and not the words of many of the world's leading financial services firms. On this basis, the adoption of digital assets as a core of the modern economy – rather than loosely-regulated fringe finance – not only seems inevitable, but well underway based on the trends evidenced in the past year.

However, as the history of world-changing innovations and developments in both technology and finance teach us, it often takes bubbles bursting and eye-watering losses amongst speculators to hand over the innovation agenda to steadier hands. For this, 2022 marked a hybrid of the dot-com bubble that heralded a new, more durable roadmap for the internet, and a 2008-styled financial crisis, where the perils of leverage, excessive confidence and, sadly, outright fraud, materially shifted the arc of blockchain development to utility value. Few innovations have better prospects for every day global use than well-regulated, trusted digital dollars.

No other digital or crypto asset has evoked more public policy and regulatory debate than stablecoins. This is so because of all of the digital assets in circulation, well-regulated payment stablecoins – or e-money tokens in European regulatory parlance – are the most likely to be durably linked to the real economy, real people, and well inside the perimeter of regulated finance.

The reason is simple: despite all the concerns levied against crypto-assets – many of which have been proven right in 2022 – the promise of well-regulated digital dollars like USDC is fulfilling things that would not be possible with money if it remained in physical form and only traveled on largely-closed networks or analog rails.

Glossary

Attestation

This is a type of assurance an accounting firm provides to attest to the accuracy of a set of statements. It is different from an audit, which is an assurance engagement that verifies the accuracy of financial statements and is typically performed annually by a public accounting firm. The USDC reserve is attested to monthly and has been audited annually by Grant Thornton.⁶⁸

Dollar Digital Currency

A regulated, privately-issued electronic stored-value instrument that is redeemable at par to the U.S. Dollar.

Tokenized Cash

A subset of stablecoins, meant to represent instruments that are fully-reserved with cash and cash equivalents, such as Treasury bills and other high-quality liquid assets. USDC and EUROC are examples of tokenized cash. This category is often contrasted with tokenized deposits, which are on-chain representations of traditional fractional-reserve bank deposits.

Mint/Issue

Refers to the process of generating (i.e. minting) new units of a particular digital asset and recording its presence on a blockchain. As an example, when vetted businesses and financial institutions deposit fiat dollars in their Circle Account, a corresponding amount of USDC or EUROC is minted.

Burn/Redeem

The process of removing (i.e. burning) units of a particular digital asset from circulation, reducing the total supply. As an example, vetted businesses and financial institutions can burn, or redeem, USDC or EUROC to receive a corresponding amount of fiat dollars.

Permissioned

Permissioned blockchains, also known private blockchains, are blockchain networks that require a centralized authority to grant access to a user.

Permissionless

Permissionless blockchains, also known as public blockchains, do not restrict who can join and participate in the network. The most well-known blockchains – such as Bitcoin, Ethereum, and Stellar – are public blockchains. Permissionless blockchains represent the foundational layer in the next evolution of how value and information is transmitted online.

VASP

Acronym for “virtual asset service provider.” VASPs are a broad category of entities engaged in the digital assets ecosystem. As broadly defined by the Financial Action Task Force (FATF), VASPs undertake or facilitate one or more of the following activities: exchange between virtual assets and fiat currencies; exchange of different forms of virtual assets; safekeeping, administration, or control of virtual assets; and participation in, or provision of, financial services related to an offer or sale of a virtual asset.⁶⁹

Digital Wallet/Active Wallet

A designated storage location for digital assets that has a public address – known as a public key – for sending and receiving assets. Each wallet also has a private key, which can be thought of as a password that enables access to the wallet’s contents. Wallets can be online (hot), offline (warm), or on a physical device (cold), with differing security, performance, and other attributes characterizing each of these profiles. It is critical to distinguish between *non-custodial* – or *personal* – wallets (where the wallet’s owner retains full control over the private key) and custodial wallets (where a third party controls the private key). Though custodial arrangements offer convenience, they require trust in a third party, as underscored by the common refrain: not your keys, not your coins.

Smart contract/programmability

A computer protocol intended to facilitate, verify, or enforce the performance of a digital contract and allow the performance of credible transactions without third parties. Smart contracts are self-executing programs in which the contents of an agreement are written directly in the code, and do not rely on an external authority to intermedate. This capability represents one of the greatest benefits of blockchain technology.

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An alternative bottoms up approach utilizes known wallet addresses and smart contracts to dissect the transaction volume. We identify around \$160 billion of payment transactions that are wallet-to-wallet, excluding exchanges, smart contracts, market makers, and certain trading and bridging-related addresses. Note that this is likely an underestimate as many of the exchange-related transactions are associated with payments and the privacy protection use case of exchanges as a regulated mixing service. We take the more conservative estimate of the two methods to arrive at an overall estimate.

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