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Market Intelligence

Stablecoins and the New Payments Landscape

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- **Stablecoins settled $10.8T worth of transactions in 2023 of which $2.3T were related to organic activities including payments and cross-border remittances, among others**
- **We believe stablecoins could be a vital use case for the real economy leading to further disruption among incumbents in the payments space**
- **Today's payment giants suffer from major disadvantages including high transaction costs, slower settlement times and limited transparency albeit there are tradeoffs to stablecoins too**

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There's currently a drive to modernize and improve existing global payments infrastructure, which promises to expand users' access to faster and cheaper forms of payment. Stablecoins are increasingly being used to construct robust payment systems on crypto rails, facilitating remittance payments and streamlining cross-border transactions. The stablecoin market settled more than $10.8T worth of transactions in 2023 – or US$2.3T if we exclude "inorganic" activity, like bots or automated transactions. Volumes on that adjusted basis are growing by 17% YoY, which means stablecoins are quickly catching up to today's largest incumbent payment networks.

Although incumbents enjoy some important advantages such as liquidity and network effects, rising competition has reduced the average cost of remittance payments by more than a third over the last 15 years, according to The World Bank. Nevertheless, the average cost of sending $200 is still 6.35% of the transfer amount globally or an aggregate $54B in fees annually. Comparatively, the average transaction cost of sending remittances using stablecoins is a far lower 0.5-3.0% of the transfer amount, with the potential to trend lower due to new innovations.

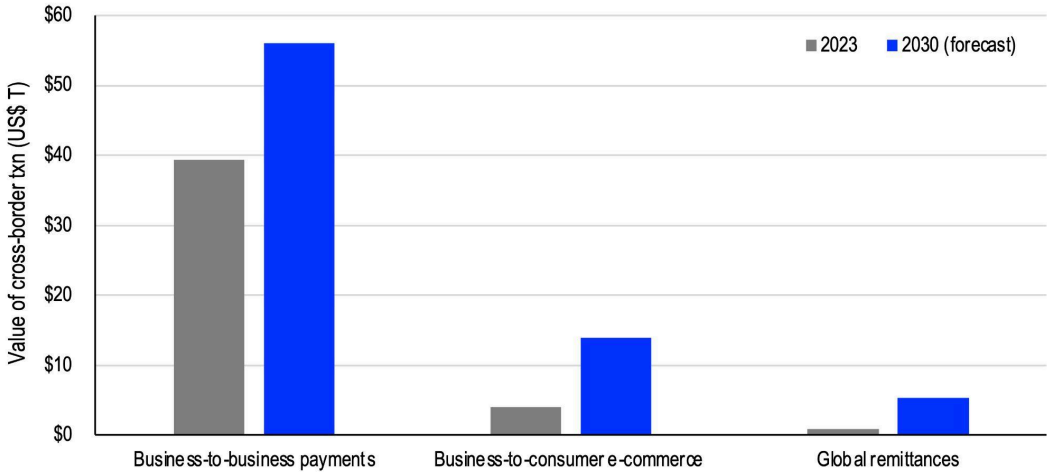
Because technology has made it easier for merchants and users to adopt new forms of payment, incumbents have become more vulnerable to fintech challengers. The integration of stablecoins into existing payment systems is one example of how crypto is increasingly being used in the real economy. However, we think expanding stablecoins' role requires abstracting away some of blockchain's technical complexities as well as having clearer regulations to ensure consumer protection and promote broader financial inclusion.

Once and Future King?

Stablecoin headlines have been occupying more mindshare recently, especially as new stablecoin rules came into force in Europe on June 30 under the Markets in Crypto-Assets Regulation (MiCA). USDC was the first MiCA compliant dollar stablecoin in the region, and Circle's euro-backed EURC stablecoin has also achieved MiCA compliance. Traditional players are also deploying stablecoins in the region or have plans to do so. This includes Societe Generale's digital asset arm Forge with its institutional EURCV and Deutsche Bank's asset management team DWS (which manages around EUR1T or US$1.09T) which will launch a new euro stablecoin in 2025.

Such developments could represent meaningful traction for efforts to build a digital intra-European payments network. Other jurisdictions are also preparing their own stablecoin regulatory frameworks, such as Hong Kong – following the end of its public consultation period. Meanwhile, the US is trying to iron out its rules for this sector with bills in both the House of Representatives and the Senate. Former House Speaker Paul Ryan argued in a WSJ op-ed that stablecoins may not only help preserve dollar dominance but also tackle the growing national debt problem. (A similar view is shared by former Comptroller of the Currency Brian Brooks, who also previously served as Chief Legal Officer for Coinbase.)

Chart 1. Cross-border payments and remittances



Sources: International Fund for Agricultural Development, International Trade Administration, FXC Intelligence, Grand View Research, Reuters, Statista, The Economist, World Bank and Coinbase

Consequently, stablecoins have emerged as one of the leading new tools to enhance the existing global payments system. In 2023 alone, there was an immense $45T of fund flows involved in cross-border business transactions, international commerce (retail) and global remittances. (See chart 1.) As these markets continue to grow, separate estimates (by

category) from the International Fund for Agricultural Development, FXC Intelligence and Statista suggest that this amount could rise to $76T by 2030. Today, the traditional infrastructure handling such massive cross-border financial traffic involves numerous inefficiencies that inflate costs and slow the movement of money across borders.[1]

Come together, right now

The existing payments landscape is divided across a rather diverse set of entities, but we would broadly categorize them into four broad groups. While many of these players represent the incumbent system, a number of them are working to embrace (or at least experiment) with stablecoins in their existing workflows. The biggest groups include:

- Automated clearing houses which represent electronic networks for processing bank transfers and other financial transactions (mostly domestically or within sovereign borders),
- Large credit card networks like Visa, Mastercard and American Express in the US or UnionPay in China,
- International banking rails such as SWIFT (Society for Worldwide Interbank Financial Telecommunication) and CIPS (Cross-Border Interbank Payment System) and
- Mobile payment systems like the US' PayPal/Venmo, China's Alipay (and WeChat Pay) and India's UPI (Unified Payments Interface) that offer digital payment solutions and peer-to-peer (P2P) transactions.

Note that while Fedwire's money transfer system settled $1.09Q (quadrillion) in 2023, we exclude this from our list as this network is primarily designed to serve member institutions of the Federal Reserve including big banks, businesses and US government agencies. It mainly settles large-value and time-sensitive transfers in real-time and doesn't handle smaller retail payments or remittances, which is our main interest in this report.

Breaking It Down

Electronic networks like ACH (Automated Clearing House) in the US or SEPA (Single Euro Payments Area) in the eurozone are among the largest payment systems on our list. In many countries, such systems help facilitate interbank fund transfers between large networks of domestic financial institutions. These typically include direct deposits and bill payments, but many have ramped up P2P and business-to-business (B2B) transactions in recent years as well.

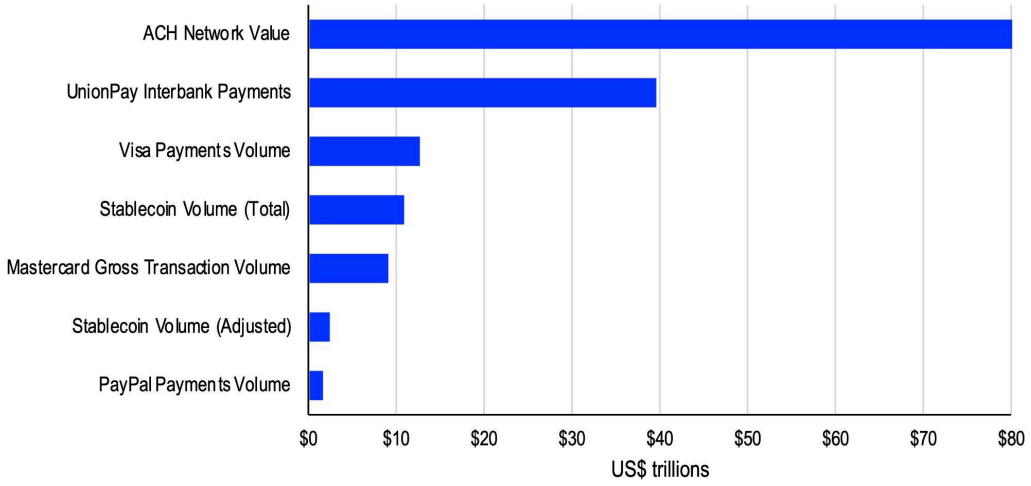
[1] For an introduction to stablecoins, their use cases and their policy considerations, see our Coinbase Institute Stablecoins White Paper, published July 2022.

In 2023, America's ACH network settled $80.1T in value according to Nacha (the self-regulatory organization formerly known as the National Automated Clearing House Association) – up 4% from the previous year. Historically, ACH transactions settle within 1-2 business days, but same-day options have increasingly become available. Note that China has a credit card payment processing system known as UnionPay that also operates a large Chinese interbank network. UnionPay's interbank payment system processed RMB279.5T (or $39.5T) in 2023.

Meanwhile, credit cards are at the top of our list for "payment dominance" as they are deeply entrenched in many consumers' spending habits, particularly in developed countries. In many places, the borrowing process for credit cards has been streamlined and users are often offered attractive incentives to sign up. But these payment giants can levy hefty fees of up to 3.5% on retailers – fees that are increasingly being passed directly to consumers. Moreover, users can be subject to average interest rate charges of 20% APR (in the US) on any accrued credit card debt.

With respect to cross-border transactions, card companies also tend to add 1% in international charges on users, which makes overseas spending highly lucrative for these payment entities. Visa reported in its Annual Report 2023 that it processed $12.3T in payments volumes last year (fiscal year 2023 ending in September, excluding $2.5T in cash access transactions), while Mastercard reported that it processed gross dollar volumes of $9.0T.

Chart 2. Transaction volumes of various payment systems in 2023



Based on the full year 2023, not fiscal year. Adjusted stablecoin volumes remove "inorganic" activity. Sources: Allium, Mastercard, Nacha, PayPal, People's Bank of China, Visa and Coinbase.

Separately, traditional banking rails like SWIFT and CIPS currently dominate

the cross-border payments landscape for banks, through which remittances are often paid. SWIFT is a secure messaging platform that connects over 11,000 financial institutions in more than 200 countries, though unlike automated clearing houses, settlements (fund transfers) do not take place on SWIFT. These networks only enable the sending and receiving of secure messages to provide each party with the details of transactions that need to be confirmed, and allowing them to update their separate ledgers. CIPS was meanwhile launched by the People's Bank of China in 2015 to compete with SWIFT and enhance the efficiency of cross-border renminbi transactions. Together, SWIFT and CIPS have enabled most of the cross-border payments among financial institutions globally for decades.

Finally, mobile payments systems are the newest players on the scene, offering P2P transactions both domestically and internationally. Convenience is one of their biggest advantages, as they generally offer user-friendly interfaces for transfering money compared to the methods used by traditional banks. Some of them have an integrated social media component as well. Mobile payments also generally appear real-time, which can be a major advantage for both sender and recipient as it alleviates the risk of chargebacks. That said, P2P payments only appear instantaneous because they often exist within a closed ecosystem, so such transactions simply represent ledger adjustments by the vendor.

Also, a downside is that these systems often require pre-existing banking relationships and/or credit cards to work, so users are still dependent on the traditional financial system. This can be a barrier for lower income constituents that may not have access to such services. Mobile platforms may also collect a not insignificant amount of personal and financial data, which raises concerns around privacy.

The Decentralized Lightness of Being

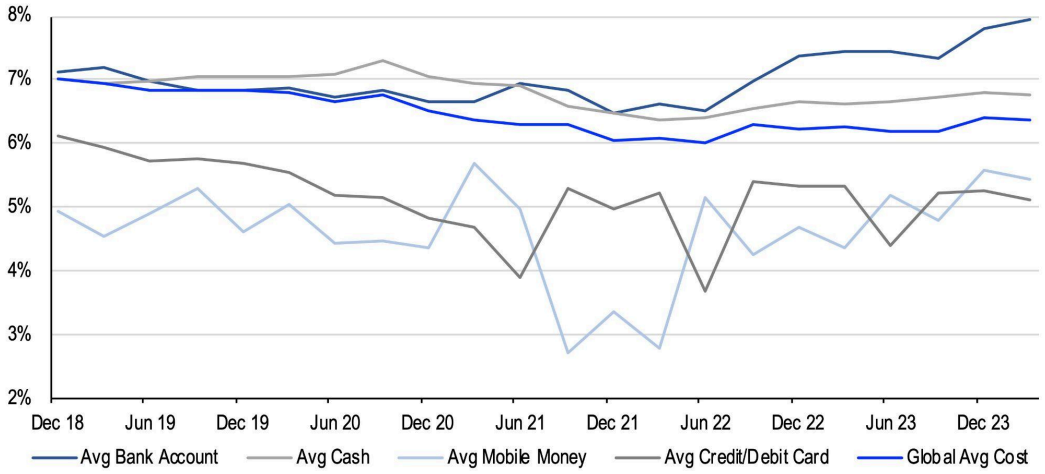
These legacy systems have established networks and infrastructure that handle the lion's share of transaction volumes globally. However, many of them also come with important disadvantages, such as high transaction costs, slower settlement times and limited transparency. Bank transfers for example involve multiple intermediaries. Because stablecoins operate on public blockchains, they rely on a transparent process that natively prevents fraud and resolves disputes in a decentralized manner through consensus. This tends to be cheaper, faster and easier to trace.

Of course, **there are tradeoffs to using stablecoins, too**. For example, stablecoins run on blockchains that offer near instant settlement, but that makes fraudulent transactions very difficult to reverse. The proliferation of

multiple blockchains can also fragment stablecoin liquidity, which can expose users to the costs and risks of bridging from one chain to another. Finally, the crypto user experience (UX) itself can be cumbersome and/or may involve too much complexity for the average user. On the upside, some of that complexity has started to be abstracted away with smart wallets and a paymaster architecture that shifts gas fees away from users to decentralized applications (dApps). Nevertheless, we expect that it may yet take years for users to become fully accustomed to these systems and utilize stablecoins from end-to-end.

In the meantime, incumbents still enjoy huge advantages like large user bases that drive sizable volumes. That is, network effects are important as it's easier to use a platform that already has many users to whom one can send and receive payments. A report from McKinsey & Company also conducted surveys that suggest banks have an edge in terms of retaining consumer trust, particularly over fintechs. For stablecoins to achieve widespread acceptance, they not only need to address regulatory concerns (see "The Killer App" section below) but build trust among users.

Chart 3. Average remittance costs by funding instrument (% of transfer)



Sources: Bloomberg, The World Bank and Coinbase.

Fortunately, technology has cheapened the cost of adopting new forms of payments for both users and merchants. This has made the traditional payment giants susceptible to disruption from fintech challengers. In fact, rising competition has reduced the average cost of remittance payments by more than a third over the last 15 years, according to World Bank data. (See chart 3.) The Bank for International Settlements has recently conducted tests with several central banks leveraging tokenization to facilitate faster and more secure cross-border transactions. Nevertheless, the average (global) cost of sending $200 across borders is still 6.35% of the transfer

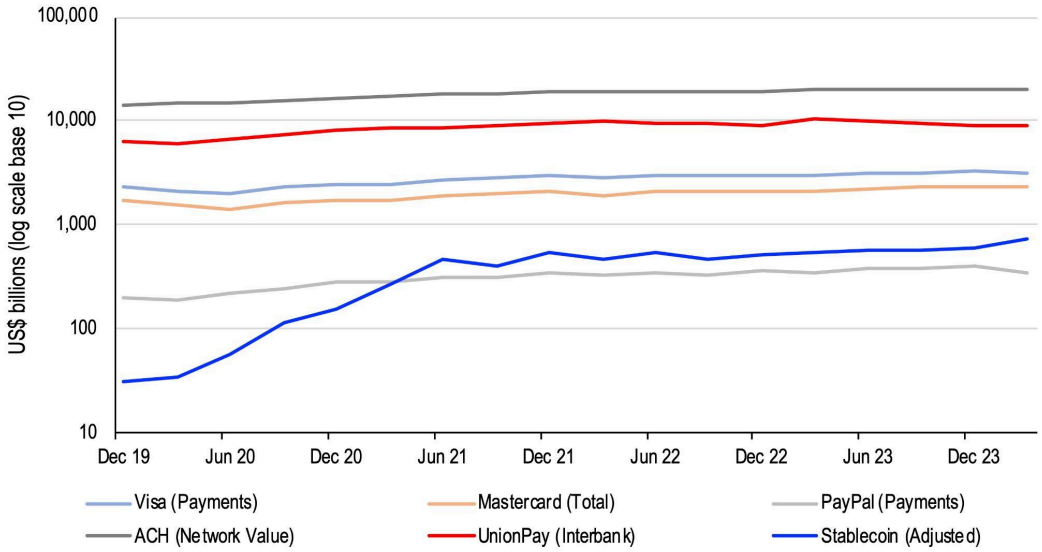
amount, which tallies to an aggregate $54B in fees annually.

Comparatively, the average transaction cost of sending remittances using stablecoins is a far lower 0.5-3.0% of the transfer amount. The breadth of this range reflects the fact that while transferring stablecoins on some networks like Ethereum layer-2s may have very low direct fees, there may be other costs. For example, converting local fiat currency to a stablecoin or vice-versa may incur exchange and/or conversion fees from the platform providing the service. However, as networks scale and/or adoption increases, this could also reduce fees in the future by raising volumes and reducing the cost-per-transaction for providers. Thus, overall costs for stablecoin transactions could continue optimizing.

Filtering Out the Noise

Stablecoins are often identified as "crypto's killer app" due to their potential for mainstream commercial use and comparative advantages over traditional payment rails (i.e. speed and cost). The label is a nod to stablecoin's promise of attracting a larger consumer audience to blockchain technology.

Chart 4. Quarterly volumes of existing payment systems (US$ B)



Sources: Allium, Mastercard, Nacha, PayPal, People's Bank of China, Visa and Coinbase.

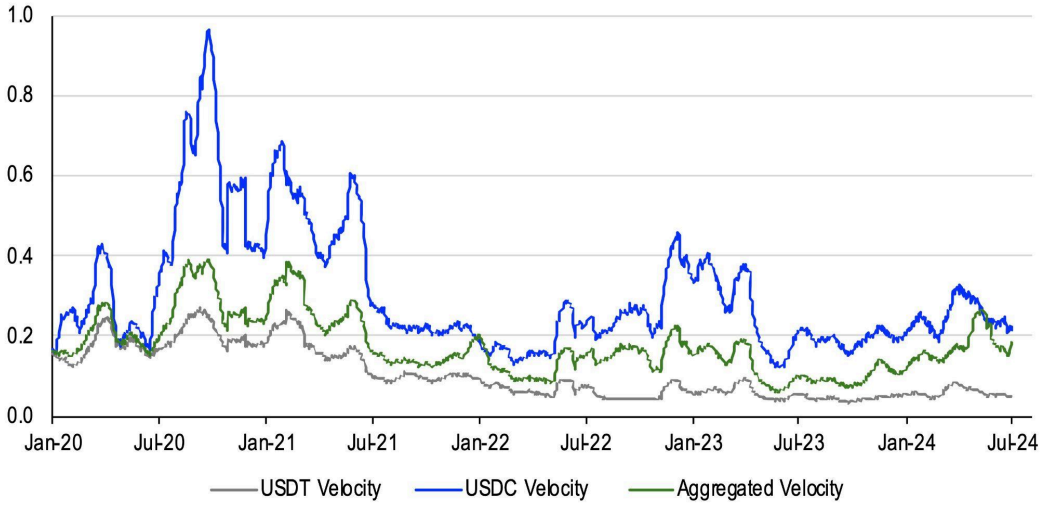
However, the reality is that stablecoins's primary use case today is to allow crypto investors to trade in and out of digital assets on both centralized and decentralized exchanges. This is partly why the market cap of stablecoins is often used as a proxy for digital asset market liquidity, as growth is tantamount to increased depth and price stability for crypto markets more broadly. Of the $10.8T in transactions settled by all stablecoins in 2023, the

majority of volumes tended to be for trading purposes.

To take a more conservative approach, we filter total transactions based on criteria enumerated in a blog post published by Visa in April 2024 – which was itself written as a response to Nic Carter from Castle Island Ventures. They argue that stablecoin transaction data can be noisy due to "inorganic activity and other artificial inflationary practices." As a result, they "adjust" stablecoin volumes by (1) removing redundant transactions involved in smart contract activity and (2) filtering for bot-driven and automated transactions. To accomplish the latter, they only include transactions sent by accounts that have "initiated less than 1000 stablecoin transactions and $10M in transfer volume" within 30 days.

That said, Visa's onchain analytics dashboard only publishes 30 days of data at a time, which makes comparisons to other payment systems difficult. Consequently, we conducted the labor-intensive task of applying their criteria across the last five years of stablecoin transaction data to see what insights can be derived. **In 2023 alone, we find that stablecoins still settled more than $2.3T in "organic" transactions annually**, which may still include trading but narrows in on payments, P2P transfers and remittances. For example, within this adjusted amount, cross-border B2B transactions on blockchains represented a small $843M but is projected to rise to $1.2B in 2024, according to Statista.

Chart 5. Aggregate stablecoin network velocity is nearing 0.20



Sources: Glassnode and Coinbase. Stablecoin velocity is calculated by dividing the onchain transaction volume of a stablecoin (in USD) by its market cap. This represents how quickly units are circulating in the network.

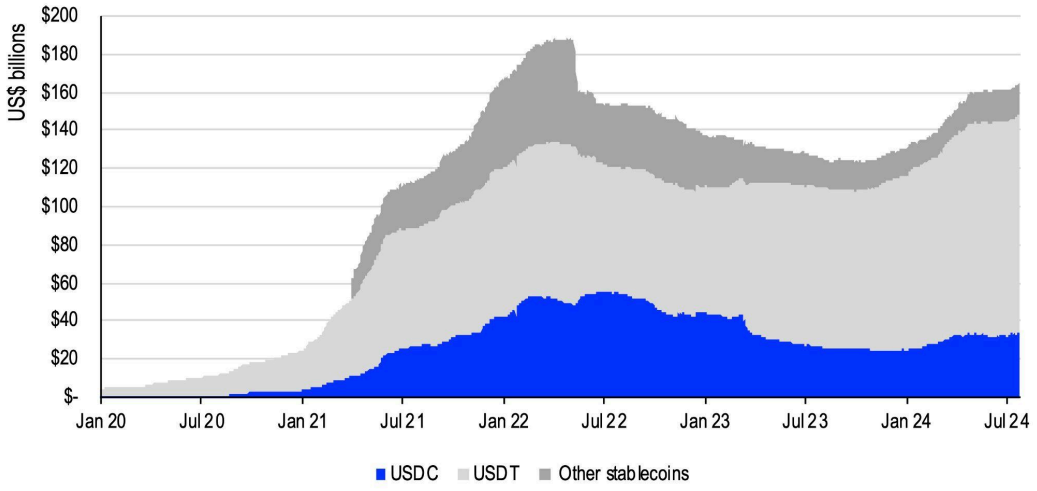
Volumes of these adjusted transactions also increased by 18% YoY in 2022 and 17% in 2023. That's faster than any of the payment systems described

above and surpasses PayPal's payment volume in absolute terms. In fact, even adjusted for "inorganic activity," stablecoins last year processed about a fifth of Visa's volume in payments and over a quarter of Mastercard's, which represents massive growth for stablecoin adoption since their inception. Note that the adjusted stablecoin transaction volume YTD is around $1.7T (about 10% of the *total* stablecoin transaction volume) compared to $1.3T over the first seven months last year – already a 28% increase in organic activity as growth continues to pick up.

The Killer App

Despite the massive volumes associated with stablecoins, the market cap of this sector is still a relatively modest $164B, albeit that's 26% higher since the start of the year. (See chart 6.) Nevertheless, stablecoins only represent 7% of the $2.3T crypto market cap at the moment. Speculatively, some market analysts believe that the stablecoin sector can grow to almost $3T over the next five years. While that may seem high, given that this estimate rivals the size of the entire crypto complex today, we think it is well within the realm of possibility if you consider that this figure would still only be about 14% of the total US M2 money supply ($21T), up from 0.8% currently.

Chart 6. Stablecoins market cap has risen to $164B



Sources: CoinMetrics, DeFiLlama and Coinbase.

The biggest impediment to realizing these projections is still regulation, however. As far back as 2020, the Financial Stability Board (FSB) published a set of "High-level Recommendations for the Regulation, Supervision and Oversight of Global Stablecoin Arrangements" (finalized in July 2023), after being given a mandate by the G20. These recommendations are shaping the development of stablecoin regulations in many jurisdictions. Indeed, MiCA has already made it legal to issue stablecoins in Europe based on their

strict rules and operational guidelines. In Asia, several places either already have a stablecoin framework like Singapore or Japan or they plan to introduce one soon like Hong Kong. That said, having consistent regulations across borders could increase confidence among users and lead to a more predictable market environment overall.

In the US, there are two bills currently outstanding in the House and Senate, respectively: the Clarity for Payment Stablecoins Act of 2023 (CPSA23) and the Lummis-Gillibrand Payment Stablecoin Act (LGPSA). Although both bills define specific reserve requirements for stablecoin issuers and include extensive provisions for customer protection, they differ in their particular regulatory approaches. CPSA23 stipulates that stablecoin issuers should be regulated by an appropriate federal or state regulator, whereas LGPSA provides a comprehensive federal oversight regime. More specifically, LGPSA places a cap on non-depository trust companies to issue up to $10B in stablecoins, beyond which the entity would need to register and seek approval as a depository institution, whose supervision would then be more akin to banks.

Conclusions

As the payments landscape continues to evolve, traditional banking rails, credit cards and even mobile payments are facing more pressure to adapt to the changing needs of their customers. Stablecoins aim to bridge the volatile crypto world with traditional finance by maintaining price stability, mainly by being pegged to the USD (for the majority of stablecoins). But these tokens have really only started to be utilized for lower-cost money transfers – at least at scale – over the last 2-3 years, despite this sector officially launching in 2015. Although they have some key comparative advantages over incumbents in terms of speed and cost, stablecoins still need to be integrated with existing financial systems to facilitate their use in everyday transactions.

We believe stablecoins represent the next major leap forward for capital movement, particularly as it's becoming easier for merchants and other entities to integrate this technology into their economic workflow – even compared to a couple years ago. Most recently, Coinbase announced a partnership with payments provider Stripe to offer USDC on Base for crypto payouts and on their fiat-to-crypto onramp, while Visa, Mastercard and PayPal have all launched their own stablecoin initiatives in recent years. Other notable mentions include Shift4, Nuvei, Worldpay and Checkout.com. That said, stablecoins require greater regulatory clarity and a smoother crypto user experience to more firmly set the stage for their potential.

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