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A Temenos white paper

Everyone's Banking Platform

Evolving Crypto Assets Regulations: The Taming of the Shrew

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Evolving Crypto Assets Regulations: The Taming of the Shrew

What has climate change got to do with crypto assets, besides mining for blockchain-based transactions that consumes a lot of energy? Anthony Leiserowitz, Senior Research Scientist and Director of the Yale Program on Climate Change Communication (YPCCC) summarized his climate change findings: "Scientists agree. It's real. It's us. It's bad. But there is hope."[1]

The same summary could be applied analogously to crypto assets:

- Experts agree that crypto assets and firms are here to stay.
- There are real examples where crypto assets have found their way into our daily lives.
- We are boosting investments in crypto assets at a staggering rate.
- It's bad because different levels of regulation in the crypto space are promoting regulatory arbitrage by crypto firms and therefore creating high risks for investors and customers to lose their investments.
- There is hope as standard setting bodies and major jurisdictions are producing coordinated, comprehensive, and balanced regulatory frameworks in the crypto space.

In light of the fast-paced evolution of the crypto (and virtual assets) industry this paper sets out to assess the current state of regulation, what's needed and how regulators across jurisdictions are responding.

[1]Senior Research Scientist and Director of Yale Program on Climate Change Communication (YPCCC).
We've Got Climate Solutions. Now We Need a Movement. | Yale Insights

Major Trends

The following trends in the crypto space are a (biased) selection of what the financial industry can expect soon. Some trends will be elaborated on in the subsequent chapters.

- Regulators across the globe will prioritize consumer protection to prevent fraud and market manipulation.
- There will be a focus on customer protection in cryptos, like MiFID II (Markets in Financial Instruments Directive 2) provisions with investor training, education, and information, as well as the recording of advisory.
- Regulators will direct their enforcement efforts at DeFi and the increasing criminal activities.
- Regulators will closely monitor money laundering risks involving NFTs.
- VASP/CASP due diligence will become a widespread compliance practice in TradFi and DeFi.
- A lot of draft rules will emerge on how crypto assets and firms should be regulated, i.e., AML (Anti Money Laundering) and sanctions, market abuse (e.g., EU's Market in Crypto Assets Regulation MiCAR, Monetary Authority of Singapore (MAS) 2019 Payments Services Act PSA, Switzerland's "Blockchain Act" 2020 with a set of amended laws, UK's FISMA Financial Services and Markets Bill in 2023/2024 and U.S. President Biden's Executive Order on Ensuring Responsible Development of Digital Assets).
- Crypto firms increasingly seek registration in regulated jurisdictions.
- Financial institutions in TradFi and crypto firms in DeFi apply knowledge and technology from other asset classes to crypto assets.
- "Use of the Court System": In the U.S., regulatory agencies issue a lot of broad ranging enforcement actions that are challenged by the recipients and brought to Court. The aim of doing so is to not only challenge what regulators are saying but also to set precedent cases and gain regulatory clarity. Even if this is a lengthy and expensive approach. One of the reasons is that two US authorities (SEC, CFTC) are vying for sovereignty in the regulation of the crypto industry.
- Compliance processes need to use blockchain analytic tools when assessing risks in AML/CFT and fraud.
- Hiring people with technology knowledge from other asset classes increases the crunch for scarce compliance resources.
- Finally, crypto assets will become integrated mainstream.

Setting the Scene

Cryptocurrency, digital asset, crypto asset, virtual asset, VASP, CASP, Digital Asset Customer, Centralized Exchange (CEX), Decentralized Exchange (DEX)—there are many terms and operating entities in the crypto space.
A Digital Asset Entity is an umbrella term for a range of businesses built on digital/crypto/virtual asset transactions. These businesses can be financial institutions, hedge funds, or blockchain projects and include VASPs/CASPs, cryptocurrency exchanges, Bitcoin ATMs, non-custodial (or private) wallets, or any Digital Asset Customer investing in digital/crypto/virtual assets.

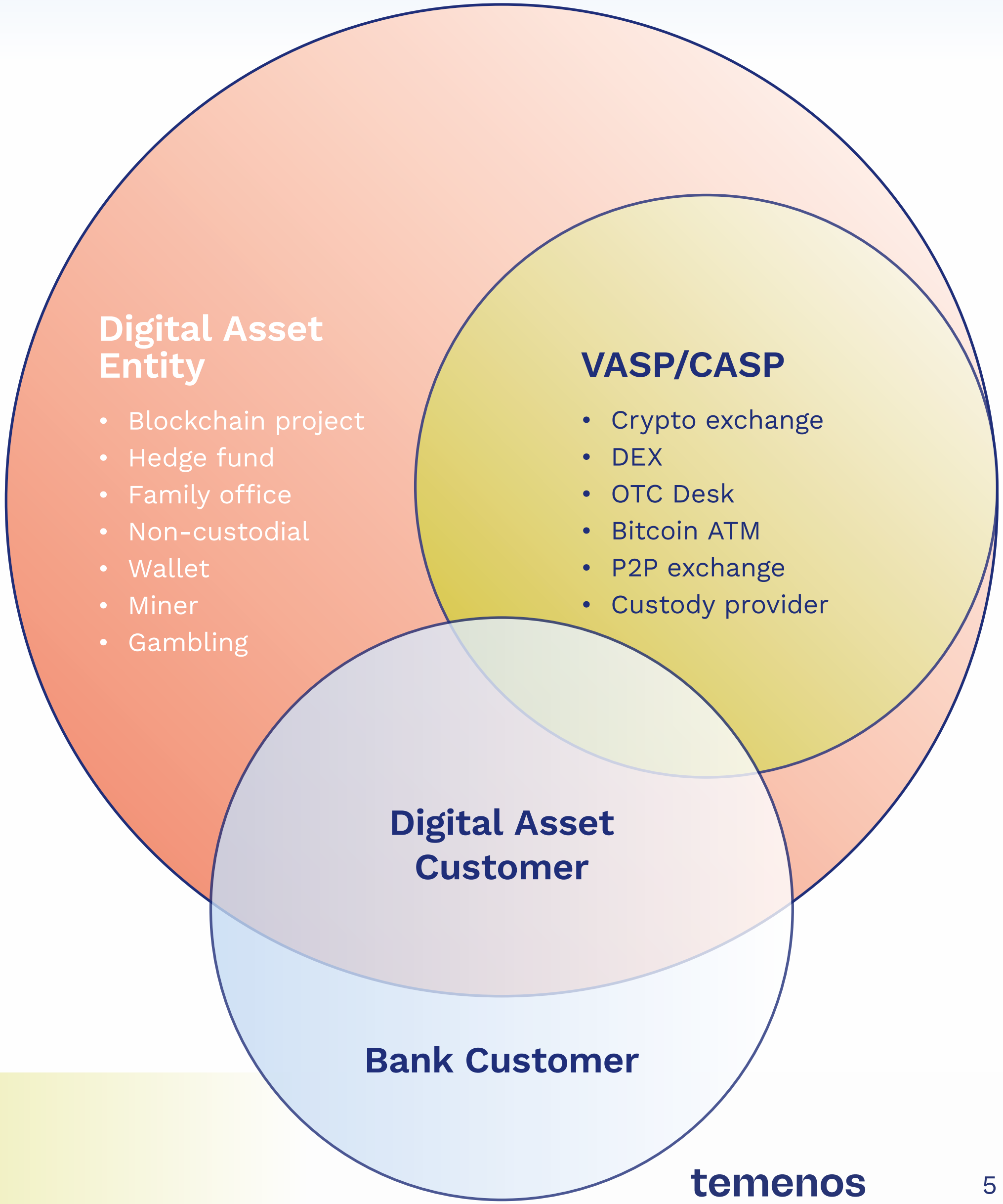


Figure 1: Source: CipherTrace: Grouping of digital and crypto entities.

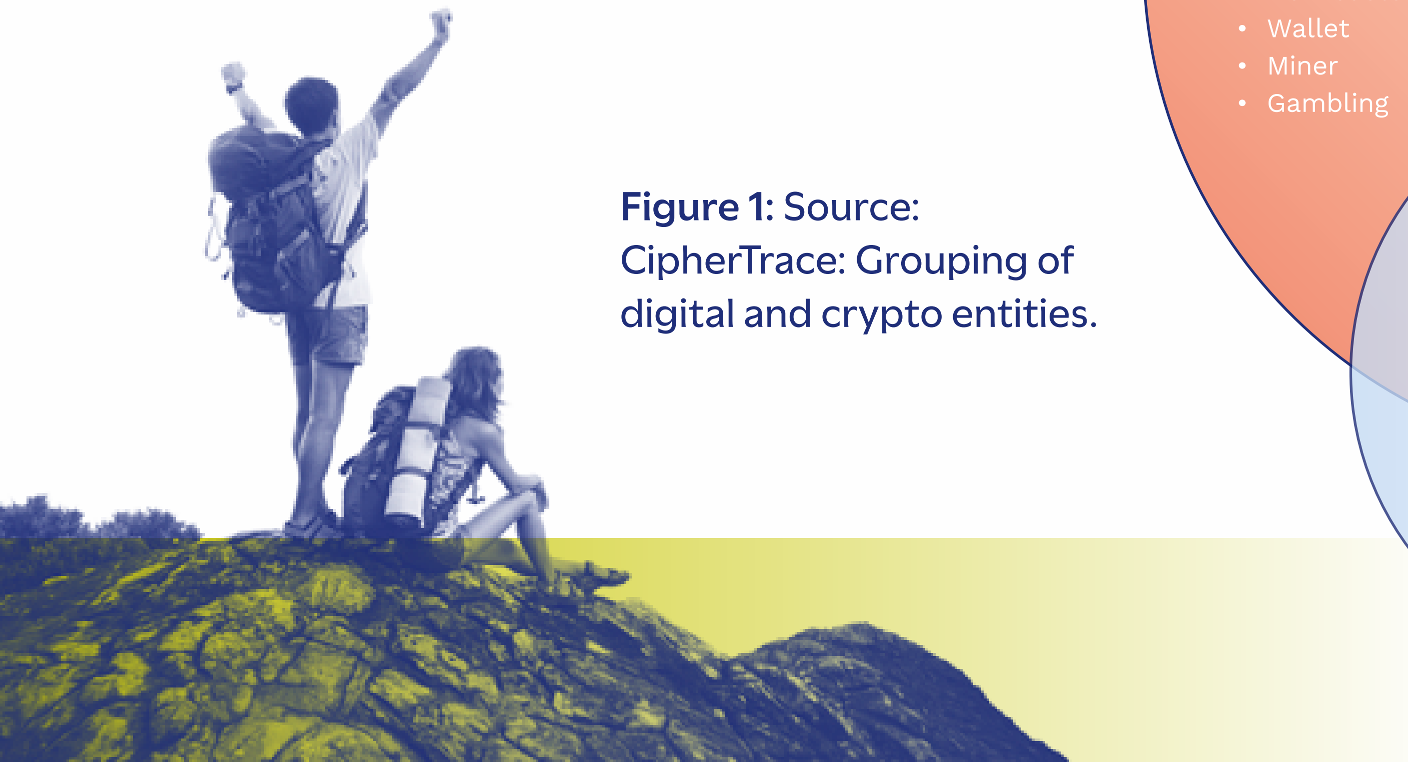
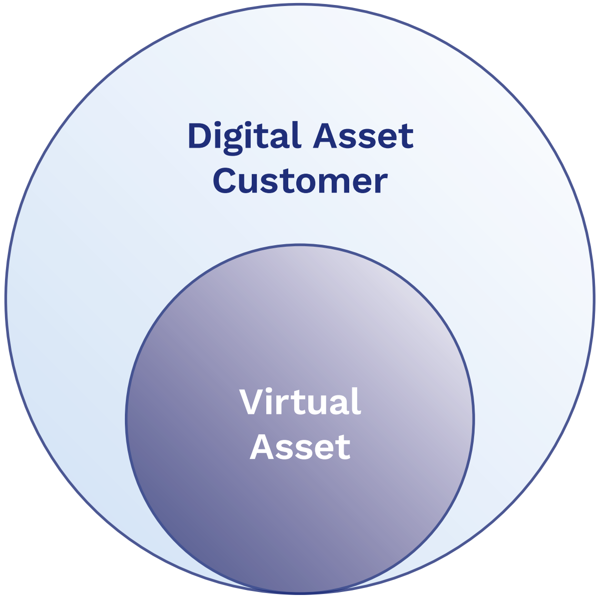


Figure 2: Source ACAMS: Digital/crypto/virtual assets



A Digital Asset includes sovereign cryptocurrency, virtual currency (non-fiat), and a digital representation of a fiat currency.

Virtual Asset is a digital representation of value that functions as

1. A medium of exchange
2. A unit of account and/or
3. A store of value

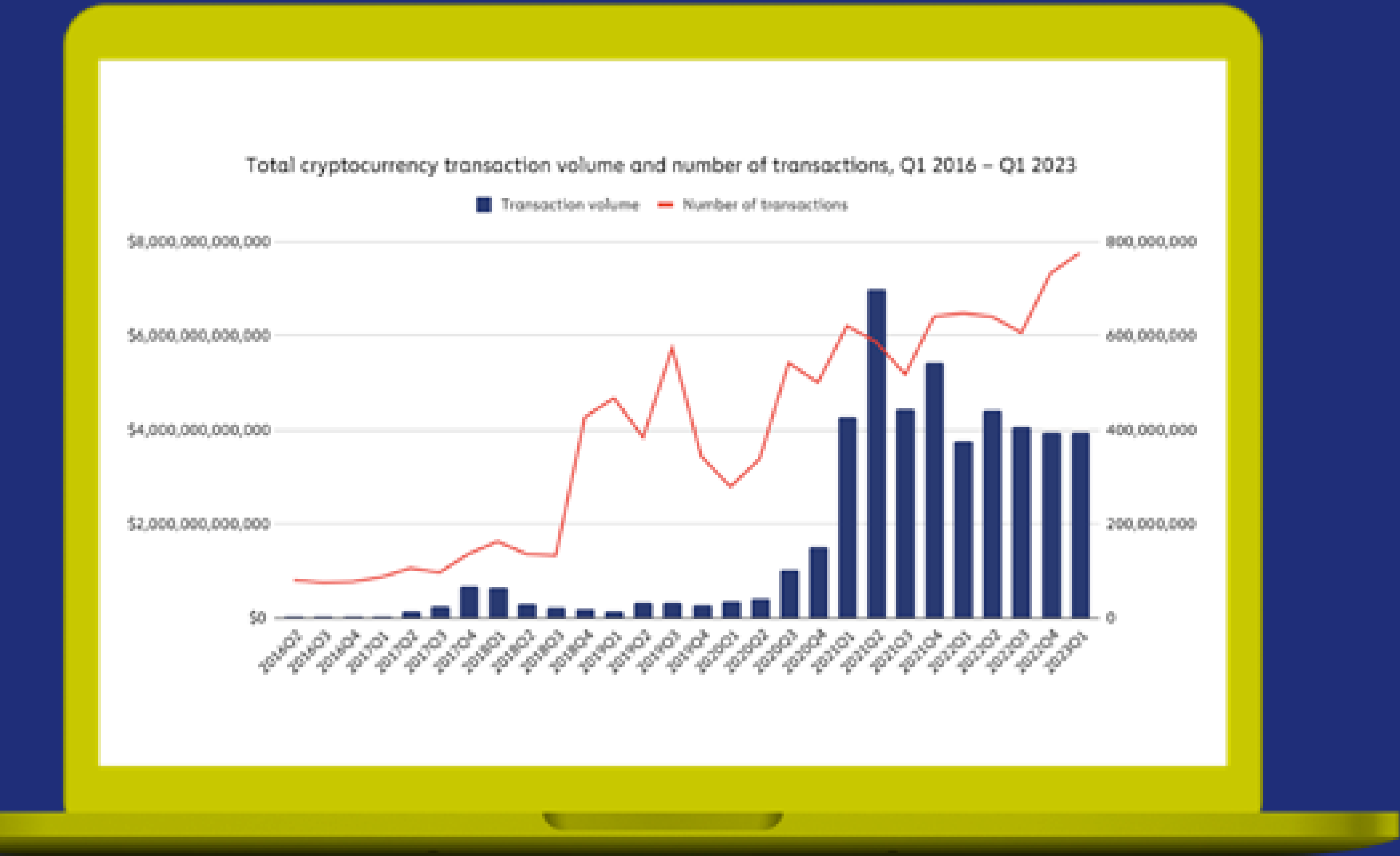
And is neither issued nor guaranteed by any jurisdiction.

Where not explicitly mentioned in this whitepaper, the term crypto assets is used as synonym for digital assets, virtual assets, including cryptocurrencies and NFTs (Non-Fungible Token).

Even the most risk-averse financial institutions in TradFi become increasingly involved with crypto assets through their customers who invest, trade, or transact in this asset class. So-called on-off-ramp facilities build the interface between TradFi and DeFi, where customers can buy or sell cryptocurrencies against fiat currencies, e.g. to trade in cryptocurrencies or invest in NFTs. Such on-off-ramp facilities are provided by banks in TradFi or firms in DeFi that have a banking relationship with accounts in major fiat currencies like USD, EUR, or CHF.The cryptocurrency market is a flourishing ecosystem with a global capitalization of $1.17 trillion according to CoinMarketCap[2]. Chainalysis' research shows that the total cryptocurrency transaction volume stabilized in 2022 at a high level compared to the early years 2019 and 2020 although the number of transactions is still rising. This seems to indicate that the crypto market has reached the retail investors.

[2] Cryptocurrency Prices, Charts And Market Capitalizations | CoinMarketCap

Figure 3: Source Chainalysis: Total cryptocurrency transaction volume and number of transactions, Q12016-Q12023[3]



Recent high-profile failures, e.g., the break-down of the FTX exchange, in the crypto space exemplified that unlimited freedom and unrestricted opportunities in a scantly regulated space do not provide trust, security, fair market conditions, good management, and sustainable profits for providers, investors, and customers.

On the contrary, it makes it easier for badly and negligently managed crypto firms to attract investors and customers, who pay at the end for the mistakes and bad management, decisions crypto firms make. And for criminals who steal crypto assets, launder money obtained from ransomware attacks, or trick investors into scams, just to name a few of the illicit activities.

Regulations and regulatory requirements are often seen as a burden for the financial industry. But they provide confidence, stability, and protection to markets and market players. Even more, past regulations and new directives like PDS2 with Open Banking in the EU pushed innovation far more than hyped industry-led innovation would have done. Because in the past, industry-led innovation resulted in raising high entrance barriers for new players by protecting own market share and slow provision of innovative new products at low costs for customers.

> Innovation may start in unregulated spaces. But it will only be developed and adopted at scale within a framework that manages risks to existing standards.
>
> **Jon Cunliffe[4]**

[3]The Crypto Myth Busting Report
[4]Jon Cunliffe, Bank of England, in Finextra [FTX implosion shows need for crypto regulation - BofE's Cunliffe (finextra.com)]

In the light of loopholes in regulations for the crypto space, the benefits of a regulatory framework for jurisdictions, TradFi, DeFi, investors, and customers are obvious: providing a level playing field, aiming for stability, transparency, security, and consumer protection.

The recent breakdown of the FTX exchange demonstrated the benefits of regulations even more. The proposed EU MiCA regulation with its elements safeguarding customer funds, ensuring prudential fitness of crypto firms, and avoiding conflicts of interest, among other requirements, would make cases like the FTX collapse less likely.[5]

Like a bank run where the affected financial institution suffers a sudden loss of customer confidence, the second-largest cryptocurrency exchange experienced the same. Although approaches to regulations may differ in the various jurisdictions, regulatory arbitrage is still an issue until globally accepted standards are in place.

The crypto world is in turmoil. It's obvious that there will be market consolidation where only regulated and licensed crypto firms will survive. Secure and liable legal certainty is needed to restore trust in crypto assets and firms and to make the markets suitable for the masses. Even though crypto assets and firms grow quickly, they still represent a low-volume-high-value market compared to established markets in FX, commodities, securities, precious metals, and derivatives; they are not yet suitable for retail customers.

Elon has tons of money, and he's very sophisticated, so I don't worry that his Bitcoin will sort of randomly go up or down. I do think people get bought into these manias who may not have as much money to spare. My general thought would be that if you have less money than Elon, you should probably watch out.

Bill Gates[6]

Cryptocurrencies basically have no value, and they don't produce anything. They don't reproduce, they can't mail you a check, they can't do anything, and what you hope is that somebody else comes along and pays you more money for them later on, but then that person's got the problem. In terms of value: zero.

Warren Buffet[7]

Firms in TradFi still enjoy customer trust to a large extent, whereas firms in the crypto space are conscious of building and maintaining customer trust. This leads to the fascinating fact that Crypto Exchanges (centralized or decentralized) and VASPs have a strong interest in immediately communicating breaches and hacks to the community to stop stolen funds from being moved to DeFi and obfuscated through mixers.

To protect customers' assets, keep, and/or increase customers' trust and protect their own assets and reputation, they are very transparent. This contrasts with TradFi, where Fis (Financial Institution) are still reluctant to publicly disclose data breaches and hacks as they do not want to lose customer trust and ruin their reputation when it becomes apparent that the security and protection of systems and assets have been compromised.

[5] Crypto Regulatory Affairs: FTX Saga Brings Further Regulatory Scrutiny | Elliptic | Elliptic Connect
[6] Bill Gates in Bloomberg TV on 27th February 2021
[7] Warren Buffett on CNBC, February 2020

Promise of Web3 and Decentralized Finance DeFi

Behind DeFi is the vision and promise Web3 (or 3.0) should bring back ownership of individuals' personal data. This means that companies that would like to collect and use personal data would not receive it for "free" anymore.

Currently, we interact with and live in the Web2 world, where large companies like Google, Amazon, Facebook and Apple (GAFA) operate. They all make big money by collecting, using, and selling personal data– our "currency" to pay for the services we consume. The vision of Web3 also includes the promise to increase wealth for customers and investors by cutting out the intermediary in transactions who charges fees for settlement and custody.

The Web3 projects using cryptocurrency appeared to have realized this objective because they only understood how to go up and get bigger.

With the goal of adding additional diversification to an investor's asset allocation, crypto assets are classified as a new asset class. This adds another golden egg to the investment basket that does not correlate with other asset classes when markets move. Unfortunately, it demonstrated that this is not the case, as we have witnessed in recent months with an equal decline in stock market prices and cryptocurrency asset values. The vision of Web3 is under pressure with DeFi and the "decentralization illusion." Meaning the almost inescapable need for centralized governance to take strategic and operational decisions. Hence, quite a few DeFi projects claiming to be "decentralized" are in fact centralized. There are large crypto asset exchanges operating in many jurisdictions but having their headquarters in jurisdictions with less rigid regulations, conducting regulatory arbitrage. However, the future will tell what extent this arbitrage will remain.

DeFi Compared to TradFi

Decentralized Finance DeFi does not differ much from transactions in traditional Finance TradFi in terms of the types of services it provides, but rather how it performs them.[8] "Bitcoin and many other digital-native assets stand out from legacy digital payment methods, such as credit cards and payment service providers, in that they remove all intermediaries from transactions.

When you pay with a credit card for coffee at a café, a financial institution sits between you and the business, and has control over the transaction, retaining the authority to stop or pause it and record it in its private ledger. With cryptocurrency, those institutions are cut out of the picture. Other types of financial applications, such as loans, insurance, crowdfunding, derivatives, betting, and more, are also dabbling in DeFi."[9]

The very same applies to stock exchange trades in TradFi compared to buying and selling other types of crypto assets in DeFi. In this case, the Blockchain replaces the stock exchange.

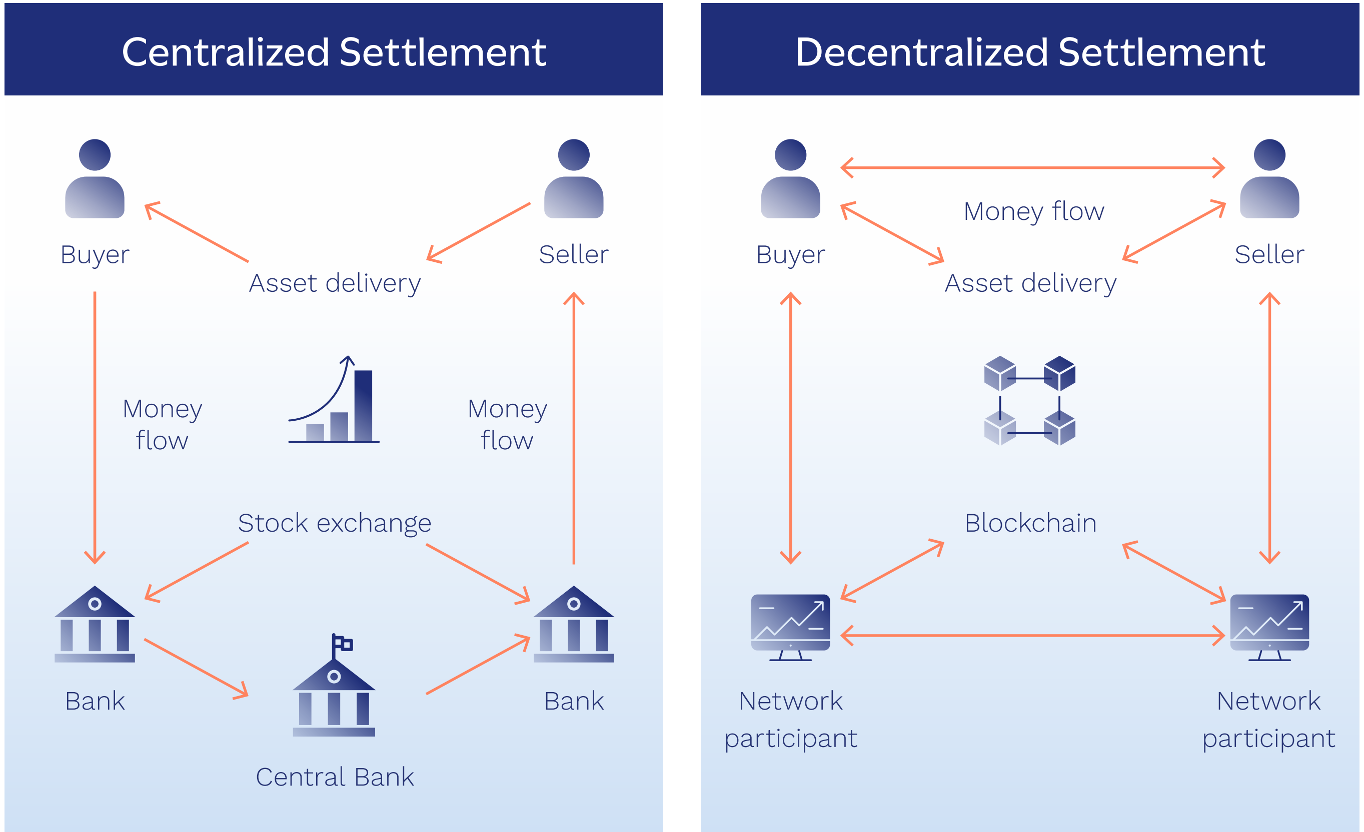


Figure 4: Centralized Settlement in TradFi compared to decentralized Settlement in DeFi.

[8] DeFi risks and the decentralisation illusion (bis.org)
[9] What Is DeFi? Explainer on What Is Decentralized Finance (coindesk.com)

In contrast to most known settlement or clearing systems, there isn't a need for centralized counterparties to facilitate transactions. Trust is created through Blockchain code, allowing a significantly more efficient settlement of transactions.

When customers trade in DeFi with crypto assets, they must be aware that TradFi services like customer support, a helpdesk, banking secrecy, centralized instance, and a point of contact do not exist.

When a transaction is executed in DeFi' it's settled. When a customer erroneously sold crypto assets to the wrong wallet, then there isn't the possibility to reverse the transaction. Unlike in TradFi, where under certain conditions the intermediary allows a transaction to be reversed.

Challenges and Threats

Money launderers and criminals are quick to exploit the benefits of crypto assets in transaction speed, loopholes in regulations, vulnerable law enforcement capabilities, and pseudo-anonymity. Money laundering, theft in DeFi protocols, and fraud typologies, like scams and rug pulls are on the rise. Yet, the overall liquidity in cryptocurrency markets is still too low to launder large amounts of money.

Most money laundering and fraud activities continue to be conducted in the traditional financial system in cash and fiat currencies. According to Chainalysis, the share of illicit transactions in cryptocurrencies compared to all cryptocurrency transaction volumes is very low at 0.15%. Compared to estimates from UNODC (United Nations Office on Drugs and Crime), where money laundering accounts for 2-5% of global GDP, or USD800 billion, USD2 trillion, cyber criminals laundered USD8.6 billion via cryptocurrencies in 2021.

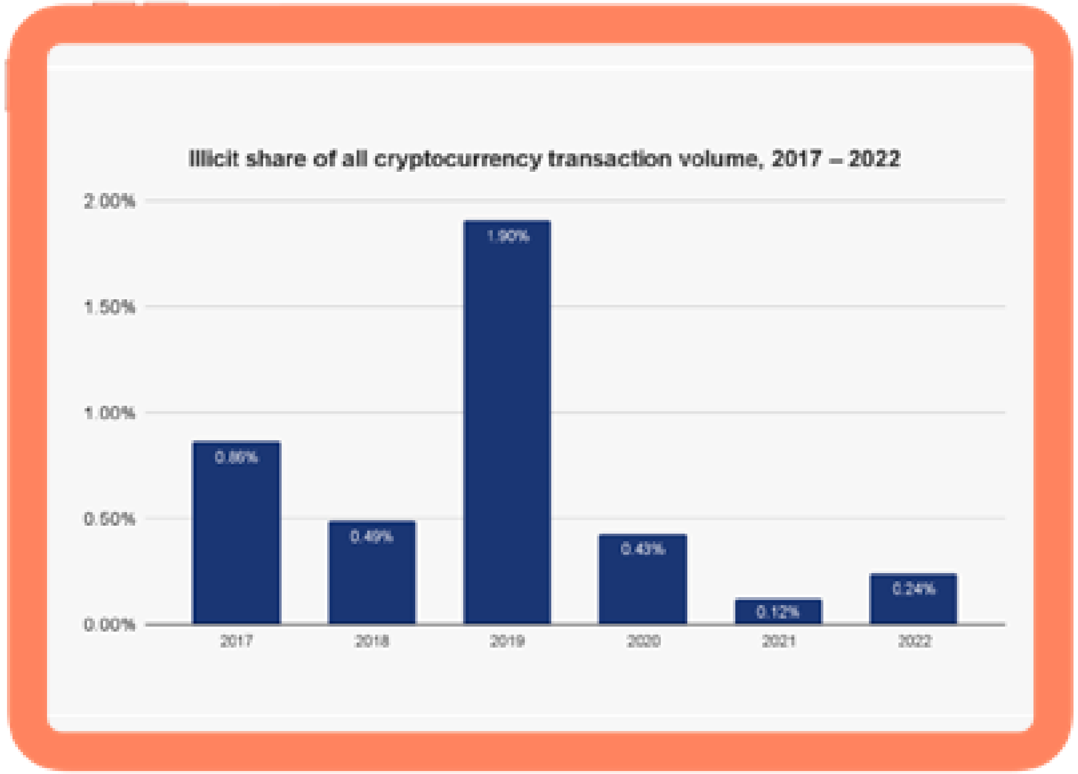


Figure 5: Source: Chainaylsis–illicit share of all cryptocurrency transaction volume, 2017-2022.

Note: The spike in 2019 is due to the PlusToken Ponzi scheme.[11]

[10] Theft, Money Laundering, and NFT Market Manipulation Underline Importance of Safety and Compliance in Web3 - Chainalysis
[11] Plus Token (PLUS) Scam - Anatomy of a Ponzi (boxmining.com)

Previously, hackers (state-owned or organized crime organizations) focused on Centralized Exchanges to exploit security loopholes and steal crypto assets. This is now shifting to DeFi and Cross-Chain-Bridges, where crypto assets can be transferred between blockchain networks, e.g., from Bitcoin to Ethereum.

According to Chainalysis, as of May 1, 2022, DeFi protocols account for 97% of the USD1.68 billion in stolen cryptocurrencies. DeFi projects are under pressure to conduct rigorous code-audits of their smart contracts because they often contain bugs that cannot be changed once baked into the protocol, with the consequence that these bugs are permanent and increase risk, according to CoinDesk.

Like DeFi projects, Decentralized Applications (DApps) don't have anyone in charge, therefore, there is no central authority that can stop users (or hackers) from doing what they want to do on the app. For new investors in DeFi, it's difficult to separate good DeFi projects and DApps from the bad ones and reduce the risk of falling into a scam. Especially when considering that a lot of actors and businesses in the crypto space hardly provide transparency about how they are funded and who their ultimate beneficial owners are.

A few words on the challenges and threats of Non-Fungible Tokens (NFTs). Chainalyis and other researchers in crypto assets observed strong indicia of so-called wash trades in NFTs, where frequent transactions occurred between a few wallets with the effect of increasing prices for the respective NFTs. Research reveals that the wallets involved belong to the same beneficial owner. Such activity and behavior obviously undermine future launches of collectibles and undermine trust in general. Not helpful is the fact that NFT (Non-Fungible Token) exchanges do not check whether an offered NFT is stolen.[13]

Recent high-profile failures in the crypto space (FTX) demonstrated that good governance is not always ensured, meaning that firms in the crypto space don't always properly separate their own assets from those of their customers, and putting customers' assets at risk in turbulent times.

[12] CoinDesk
[13] Seth Green's Stolen Bored Ape: Explained (masterworks.com)

Status on Regulatory Frameworks

In this chapter we look at the global regulatory landscape and standard setting bodies as well asat those jurisdictions with significant international influence, advanced stages and/or mature regulatory frameworks in crypto assets. According to the Atlantic Council's Cryptocurrency Regulation Tracker[14], which looks at 45 countries (G20 member states and countries with highest rates of cryptocurrency adoption), cryptocurrencies are fully legal in ten G20 member states representing over 50% of the world's GDP. Of the 45 countries, 20 countries declare cryptocurrencies as legal, 17 countries partially ban cryptocurrencies and 8 countries generally ban them. Considerable differences appear between developed countries and emerging markets where 64% of developed countries have regulations for cryptocurrencies in place compared to only 11% of emerging market countries. However, only one-third of the 45 countries have consumer protection rules that include advertising and cybersecurity for service providers regulations and requirements.

Despite evolving regulations around crypto assets and firms, there is no dedicated body under the G20 for cryptos, unlike the FSB (Financial Stability Board), IOSCO (International Organization of Securities Commissions), CPMI (Committee on Payments and Market Infrastructures), OECD (Organisation of Economic Co-operation and Development), or FATF (Financial Action Task Force). All these bodies are looking through their own lenses and setting standards from their perspective.

For example, FSB and Central Banks look at systemic risks, IOSCO and domestic securities and futures markets focus on market abuse and investor protection risks, CPMI is the global standard setter for payments, clearing and settlement arrangements OECD provides the framework for automatic exchange of tax-relevant information, and FATF with AML/CFT standards looks at mitigating AML/CFT risks. Yet, there is no standard setting body for cryptos with its own lens as to how it would facilitate technology and standards in the future in a broader sense. The trends in crypto regulations are still about avoiding bringing risks to TradFi. This leads to a lack of standardized regulations across jurisdictions and differing approaches to how jurisdictions treat crypto assets.

Centralized crypto asset exchanges act like TradFi exchanges but are not yet regulated as such in many jurisdictions. Recent draft regulations in several jurisdictions, however, foresee the registration and licensing of centralized exchanges when they meet certain pre-conditions, e.g., minimum capital requirements, segregation of customer assets from the company's assets, white papers detailing potential and real risks, and a strong financial crime compliance framework.

[14] Cryptocurrency Regulation Tracker - Atlantic Council

According to Chainalysis report "Geography of Cryptocurrency," "Europe is the world's largest crypto economy thanks to DeFi, NFTs, and notably, growing regulatory clarity."[15] For instance, in Europe, Estonia was among the early adopters, establishing a regulatory framework for VASPS/CASPs. Switzerland has notably developed one of the most comprehensive regulatory systems for digital assets, ensuring legal clarity and regulatory confidence for market participants. Beyond Europe, the United Arab Emirates is on the verge of creating the world's first dedicated authority exclusively dedicated to virtual assets.

> Cryptos are born and operating global and digital. However, policy and law makers aim to regulate crypto assets and crypto asset servicing firms same as the traditional financial industry (TradFi) and its products which are tailored for domestic and in person markets.
>
> **Delphine Forma**
> Senior Compliance Manager at Bitmex

The FATF Travel Rule is a good example of aiming to apply TradFi regulatory approaches to crypto assets to achieve full transparency in money flows. In this case, the VASP/CASP is obliged to verify that the source of the crypto asset is not subject to sanctions or restrictive measures before making the crypto asset available to the beneficiary.

In TradFi, it is challenging to trace money flows through all the intermediaries and payment channels. Hence, providing the originator and beneficiary details is crucial for financial institutions to fulfill their AML and CFT (Combating Financing of Terrorism) obligations. Whereas transfers in blockchain-based crypto assets are fully transparent and money flows can be monitored from the originator to the final beneficiary wallet through various crypto asset exchanges and cross-chain bridges. To ensure compliance with AML/CFT requirements, most VASPs/CASPs apply the same rigorous KYC (Know-Your-Customer) procedures before onboarding a new customer as TradFi financial institutions must do.

[15]Chainalysis 2022-Geography-of-Cryptocurrency

Standard Setting Bodies

FATF has global leadership and guidance for combating money laundering and terrorism financing. Since 2014, FATF has released numerous publications regarding virtual assets and VASPs with global significance and guidance.

However, there are varying approaches across the globe regarding virtual assets. One of the most important provisions relates to the Travel Rule, which aims to stop payments with sanctioned entities, block terrorist financing, prevent money laundering in virtual assets, and support the reporting of suspicious entities.

Jurisdictions are in different stages of implementation, and regulations vary by jurisdiction. There are different implementations of the FATF travel rule, that require VASPs (banks, exchanges, hosted wallets, and other FIs) to share identifying information about sender and receiver above a certain threshold. So far, there are no market rules in place yet to fully comply with the travel rule, although standards and protocols exist (see Appendix).

However, sharing such sensitive data poses significant risks, like:

- Hacks and personally identifying information (PII) data leaks.
- Fake VASPs attempt to collect PII.
- Harvesting, data mining, and selling of user PII.
- Oppressive regimes monitoring PII in transactions.
- Data leaks, poor security, and data brokering.
- DDOS (Distributed Denial of Service) attacks and market manipulation.

As a result, competing visions for the technical implementation of the Travel Rule have emerged. However, there appears to be a general agreement on the need for messaging standards, like “SWIFT for Cryptos.”

In October 2022, the Financial Stability Board (FSB) proposed a framework for the international regulation of crypto asset activities, as they could pose significant risks to financial stability, e.g., due to the increasing interconnectedness with TradFi. The framework is grounded on the principle “same activity, same risk, same regulation.” The recommendations focus on regulations, supervision, and oversight for crypto asset activities and markets, as well as global stablecoin arrangements that are widely used as means of payment and/or store value.

In May 2023, the IOSCO published its consultation report aiming to finalize recommendations for the trading of crypto (or digital or virtual) assets to address market integrity and investor protection issues in crypto assets in the “most effective way possible”, based on the principle “same activities, same risks, same regulatory outcomes”.[16] There is a significant risk for investors to be trapped into fakes, fraudulent ICOs (Initial Coin Offerings), scams, and rug pulls. Therefore, consumer protection remains at risk. An investor would have to perform a thorough analysis before investing in a crypto asset (which is always a good idea for any investment).

The recommendations focus on activities performed by CASPs and services offered to retail investors. The recommendations also cover the need for enhanced cooperation among regulators. Later in 2023, a separate workstream will publish recommendations for DeFi.

The OECD published in October 2022 its Crypto-Asset Reporting Framework (CARF) which defines the relevant crypto-assets in scope, the intermediaries and other service providers that are subject to the CARF. CARF incorporates recent developments in FATF’s AML standards. The reason for CARF is “to ensure that recent gains in global transparency will not be gradually eroded”.[17]

[16] CR01/2023 Policy Recommendations for Crypto and Digital Asset Markets (iosco.org)
[17] Crypto-Asset Reporting Framework and Amendments to the Common Reporting Standard

European Union

The EU's Market in Crypto Assets Regulation (MiCAR) has the power to be a similar game changer in the crypto space as it was with the Payment Services Directive 2 (PSD2) for Open Banking, and account and payments services for TradFi. Although some voices criticize that MiCAR is lacking more recent developments and that NFTs will be excluded from the current scope (except those falling under existing crypto asset categories).

MiCAR (Markets in Crypto Assets Regulation) is enhanced by the revised Transfer of Funds Regulation (TFR), extending its scope to encompass transfers involving crypto assets. The travel rule applies to interactions between hosted wallets managed by CASPs (Crypto-Asset Service Providers) and un-hosted wallets, obliging CASPs to verify the ownership of un-hosted wallets. This raises privacy concerns as sensitive financial and personal data might be shared with unknown CASPs.

Key aspects of MiCAR include its broad CASP definition, aligning VASPs with CASPs, and its application to all EU member states and businesses within or outside the EU. MiCAR aims to regulate crypto assets not covered as financial instruments by MiFID II, focusing on content over technology. Rules for stablecoins and CASPs come into effect at the end of 2023 and June 2024 respectively. MiCAR addresses AML/CFT, conduct, and prudential regulations, connecting with ESMA and EBA.

The regulation mandates transparent and accurate communication for advertising and web content. NFTs are excluded unless they involve fractional ownership, while DeFi's coverage remains unclear. MiCAR extends market manipulation and conduct rules to crypto assets, enhancing market confidence. Notably, CBDCs (Central Bank Digital Currency) are not subject to this crypto asset framework.

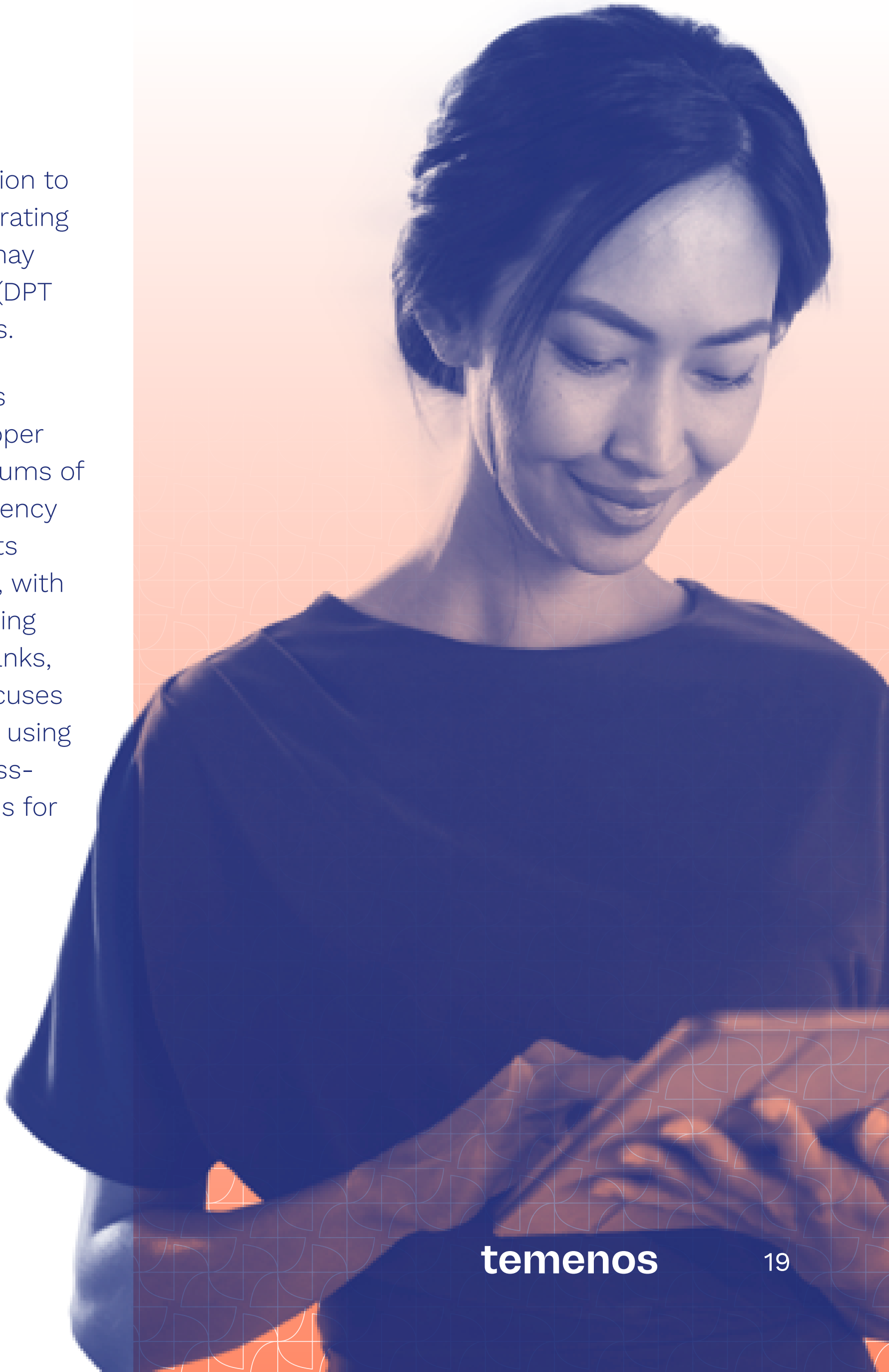
> Incumbent banks dominated the market and regulators for so long that they were instrumental in delaying digital regulations that would lead to change. As a direct result of trying to maintain the status quo, they were leapfrogged by the EU and its southern neighbors. US banks are now playing catch up and new regulations are required!
>
> **Richard Turrin[18]**

[18]Blog as of 6th November 2022: Digital Banking and why the US is behind.

Singapore

The Monetary Authority of Singapore (MAS) takes a flexible approach to crypto asset regulation, emphasizing an asset's features over labels to balance risk mitigation and innovation. Assets resembling capital market products are regulated under capital market rules, requiring firms to obtain a capital markets services license (CMSL). Prospectus requirements apply to public offers of securities-like digital assets, with exemptions considered. Digital Payment Tokens (DPT) and e-money regulations apply to assets for payments or debt discharge. Stablecoins adhering to criteria can be a separate class of DPT, as per the Financial Markets and Services Bill (FSM Bill), which also extends licensing for Virtual Asset Service Providers (VASP). MAS selectively licenses digital asset firms as DPTSPs, prioritizing risk management and contributions to the digital asset ecosystem. Due to AML/CTF risks in digital token transactions, PSA and SFA-regulated entities must adhere to AML/CTF rules. The FSM Bill expands VASP regulation to all Singapore-based corporations, even if operating abroad. Marketing digital asset investments may fall under licensable activities, while DPTSPs (DPT Service Providers) face advertising restrictions.

Project Guardian tests tokenization and DeFi's financial stability, while stablecoins under proper regulation could serve as reliable digital mediums of exchange. A specialized regime for single currency pegged stablecoins is proposed. MAS supports wholesale CBDCs for cross-border payments, with Project Dunbar demonstrating direct transacting with CBDCs issued by participating central banks, reducing reliance on intermediaries. Ubin+ focuses on cross-border foreign exchange settlement using CBDCs, enhancing digital currency-based cross-border transactions capabilities. MAS prepares for retail CBDC issuance through Project Orchid.



Switzerland

Switzerland's Government and FINMA (Financial Market Authority) have embraced blockchain and digital assets, updating regulations in 2020 to accommodate them under a “same risk, same rules” strategy. FINMA issues pre-determined negative rulings to enhance clarity. The Federal Act on DLT (Distributed Ledger Technology) brought changes, enabling blockchain-based rights issuance, segregated digital assets in bankruptcy, and special licenses for digital asset services. FINMA differentiates tokens (payment, security, utility), applying relevant financial laws. Payment tokens invoke AMLA (AML Act) rules, security tokens might require prospectuses and FINMA security licenses, and utility tokens generally lack strict regulations. Hybrid tokens are possible, and VASPs may need FINMA licenses or AMLA registration based on services. AML regulations require identifying parties, beneficial owners, fund sources, and compliance. Regulations also apply if digital assets qualify as payment means.

Moreover, Switzerland's approach to crypto assets encompasses payment, security, and utility tokens, each subject to distinct financial laws. The Federal Act on DLT facilitated rights transfer via blockchain, protected digital assets in bankruptcy proceedings, and established licensing for digital asset services. FINMA's guidance adopts a case-by-case strategy and focuses on tokens' economic functions. Hybrid tokens combining attributes are recognized. Virtual Asset Service Providers (VASPs) require licenses or AMLA registration based on services offered.

In addition, the Anti-Money Laundering Act (AML Act) and Ordinance (AMLO) dictate AML regulations. Digital assets qualifying as payment means fall under these regulations, which also apply to financial intermediaries. The regulation is applicable to DeFi projects, and registration with a Self-Regulatory Organisation (SRO) is necessary. Sales and promotion of digital assets entail prospectus requirements and AML obligations. Prudential requirements for virtual assets are anticipated, while stablecoins' treatment varies based on underlying assets and rights. Central Bank Digital Currency (CBDC) experimentation has been successful.

Furthermore, NFTs are generally not classified as securities, and DeFi activities raise AML concerns. Switzerland introduced a DLT trading facility license for crypto exchanges and considers wallet operation as financial intermediary activity subject to AML. Asset management of digital assets requires licensing based on professional management of financial instruments.

United Kingdom

Since 2020 VASPs must comply with the Money Laundering Regulations (MLRs) regarding money laundering, terrorism financing and transfer of funds. For those VASPs offering services in crypto assets that classify as financial instruments or electronic money an FCA authorization is mandatory.

In June 2023, the FSMA Financial Services and Markets Act 2023 received Royal Assent. The FSMA 2023 now expands to encompass all digital assets and not only stablecoins.

From September 2023, VASPs are required to exchange originator and beneficiary information for transactions over EUR1'000.

United States

VASPs are seen as Money Servicing Businesses (MSBs) and hence subject to registration, licensing and AML/CFT regulations. In May 2019, FinCEN issued its version of the BSA/AML/Travel Rule regulation pertaining to VASPs.

This guidance doesn't establish any new regulatory expectations or requirements but applies these rules to MSBs (and US-based VASPs), involving convertible virtual currencies (CVCs). There are regulations in the pipeline like the bipartisan bill "Lummis Gillibrand," which requires large regulations in the crypto space, and President Biden's Executive Order on Ensuring Responsible Development of Digital Assets' (March 9, 2022), which calls for measures in consumer protection, US, and global financial stability, mitigating systemic risks, illicit financial, and national security risks, supporting technical advances, and exploring US CBDCs.

US financial markets are regulated by several independent agencies whose jurisdiction overlaps (SEC, CFTC, US Treasury Dept., US FED), making it particularly challenging to create a consistent regulatory environment for crypto firms and assets. Some crypto assets are classified as commodities (regulated by CFTC), i.e., Bitcoin and Ether[19], and others are classified as securities (regulated by the SEC). Both the CFTC and SEC claim to oversee crypto assets.

[19]Discussions from a regulatory oversight perspective whether Ether is a commodity, or a security remain ongoing.

Conclusion

In the last few years the demand to regulate crypto assets increased drastically. Not only because of recent high-profile failures where investors suffered heavy losses due to rogue crypto firms but also due to the increasing interconnections between TradFi and DeFi affecting financial stability.

Crypto assets are here to stay and although still a somewhat niche asset class, investments in crypto assets continue to grow, considerably, with more retail investors entering the market. Not dissimilar to when Derivatives found their way into the investors' universe so will crypto assets become mainstream. Over the years the handling with, and investment in, crypto assets will become as normal as using a smart phone or investing in securities.

Evolving regulations pave the way for safer investments including for retail investors. Even though often seen as a burden, especially Compliance related regulations, they will ultimately provide a level playing field to all actors as well as promote trust for investors.

Like in TradFi asset classes, crypto bear the same risk that bad actors misuse them to launder money and finance terrorism. As shown in this paper, some countries will enhance or expand existing AML/CFT, registration, licensing laws and regulations for firms entering the market others will define a new set of rules tailored for different types of sub assets classes and business types. Although the approach and scope of regulations may vary between countries there is harmony in the common principle that AML, CFT and Travel Rule obligations should be applied to both crypto assets and firms.

Consumer protection provisions are not (yet) fully included or considered in the current state of regulation, even in those countries where some crypto asset related regulation already exists. As usage increases related regulations will need to evolve to include this with some emerging, or latent, markets likely having to update their regulatory framework rather quickly in order to avoid that they unwittingly encourage regulatory arbitrage.

Standard Setting Bodies promote global cooperation and governance across countries as well as the definition of industry standards, however, countries need to define commensurate and balanced regulations that encourage innovation while ensuring the regulatory landscape does not become fragmented between regions. Onus will be on regional supervisors to ensure terminology and supervision models follow such global standards.

What is clear is the times of totally unregulated DeFi will sooner rather than later be over and crypto assets and firms will be subject to the same scrutiny and obligations as TradFi institutions – ultimately all for the benefit of consumers, firms and stakeholders.

Glossary

CASP	Crypto Asset Services Provider under MiCA are like the FATF standards VASP, but include the advisory element which goes beyond FATF's VASP definition.
CEX	Centralized Exchange serves as an intermediary between buyers and sellers, much in the same way that investors and companies connect through stock exchanges.
Cross-Chain Bridges	Cross-chain bridges are software applications that enable transactions to occur between various blockchains. If someone wants to transfer cryptocurrency, non-fungible tokens (NFTs), or other digital assets between blockchain networks, cross-chain bridges are an essential part of the process. While most digital assets are tied to a specific blockchain, cross-chain bridges enable inter-network transactions powering a much broader digital ecosystem. Using cross-chain bridges, cryptocurrency owners can unlock the value held in their crypto portfolios for a wider range of real-life uses. Investopedia
Crypto Asset	Crypto Assets means for the purposes, herein such type of assets which can only and exclusively be transmitted by means of blockchain technology, including but not limited to digital coins and digital tokens and any other type of digital mediums of exchange, such as Bitcoin, Dogecoin, and Litecoin. https://www.lawinsider.com/dictionary/crypto-assets
DAC	Digital Asset Customer is any Digital Asset Entity that uses the services of a bank or other formal financial institution. DAC was first used to describe a broad grouping of cryptocurrency-based customers in the US Department of the Treasury's OCC enforcement action against M.Y. Safra Bank in early 2020. What Exactly is a Virtual Asset Service Provider (VASP)? - CipherTrace
DAE	Digital Asset Entity is an umbrella term for a range of businesses built on cryptocurrency transactions. Digital Asset Entities include Virtual Asset Service Providers (VASPs), such as cryptocurrency exchanges and ATMs, which are financial institutions, in addition to gambling sites, incubators, and other entities that use crypto but are not always classed as financial institutions. Alternative names include Virtual Asset Entity (VAE) and Crypto Asset Entity (CAE). What Exactly is a Virtual Asset Service Provider (VASP)? - CipherTrace
DApp	Decentralized Applications provide services like those offered by typical consumer applications, but they use blockchain technology (mostly Ethereum) to grant users more control over their data by eliminating the need for centralized intermediaries to manage the data, thus making the service "decentralized." What Is a Decentralized Application? - CoinDesk DApps are not limited to financial use cases as they can be used to develop gaming applications, gambling, education, web browsers with enhanced privacy etc. Cointutor

Glossary

DeFi	Decentralized Finance is an umbrella term used for lending, trading, and other financial activities carried out on a blockchain, without needing any third parties. What Is DeFi? Explainer on What Is Decentralized Finance (coindesk.com) Decentralized finance aims to provide financial services without intermediaries, using automated protocols on blockchains and stablecoins to facilitate fund transfers. DeFi risks and the decentralisation illusion (bis.org)
DEX	Decentralized Exchange involves no intermediaries in crypto transactions. Instead, money can be moved directly from one digital wallet to another. To facilitate the transaction, a DEX often relies on the use of smart contracts, stored on a blockchain that can automate the completion of a transaction if specific conditions, such as releasing funds, are met. A DEX is a VASP and should be regulated as such, according to FATF Guidance. A DEX, or any other decentralized (distributed) app (DApp), its owner/operator, or both, fall under the definition of VASP if they "facilitate or conduct the exchange or transfer of value (whether in virtual assets or traditional fiat currency)." Likewise, a person that develops a DEX may be a VASP when they engage as a business in facilitating or conducting the previously listed activities on behalf of another natural or legal person. What Exactly is a Virtual Asset Service Provider (VASP)? - CipherTrace
Digital Currency	Digital currency includes sovereign cryptocurrency, virtual currency (non-fiat), and the digital representation of fiat currency. (ACAMS)
Ether	Ether (ETH) is used to pay for on-chain Ethereum transactions but can be used as an investment, payment method, or for trading on exchanges. What Is Ether (ETH), the Cryptocurrency of Ethereum Apps? (investopedia.com)
Ethereum	Ethereum is a blockchain and distributed platform that allows anyone to create anything that can use a blockchain. What Is Ether (ETH), the Cryptocurrency of Ethereum Apps? (investopedia.com)
Fiat Currency	Fiat currency is a national currency whose value is derived from a country's promise to back it, not from physical commodities like gold or silver. Fiat money is backed by the general public's faith in a country's central bank and the national government issuing that money. If a country were to become insolvent, its fiat currency would drastically lose value. What is a fiat currency? Everything you need to know about the classic monetary asset (forex.com)

Glossary

Regulatory Arbitrage	Regulatory arbitrage is a practice whereby firms capitalize on regulatory systems loopholes to circumvent unfavorable regulations. Arbitrage opportunities may be accomplished by a variety of tactics, including restructuring transactions, financial engineering, and geographic relocation to amenable jurisdictions. Investopedia
Smart Contracts	A smart contract is a self-executing contract with the terms of the agreement between buyer and seller being directly written into lines of code. The code and the agreements contained therein exist across a distributed, decentralized blockchain network. The code controls the execution, and transactions are trackable and irreversible. Smart contracts permit trusted transactions and agreements to be carried out among disparate, anonymous parties without the need for a central authority, legal system, or external enforcement mechanism. Investopedia
Stablecoin	A cryptocurrency that is tied to an asset outside of cryptocurrency, e.g., USD, EUR, to stabilize the price. There is regulatory uncertainty whether stablecoins are securities, derivatives, or commodities. What Is DeFi? Explainer on What Is Decentralized Finance (coindesk.com) According to the EU's upcoming MiCA regulation, stablecoins are categorized as asset-referenced tokens (ART) or e-money tokens (EMT) depending on the type of asset pegged (e.g., government-issued currency, basket of currencies, gold, another crypto asset).
VASP	A Virtual Asset Services Provider is defined by the FATF as a business that conducts one or more of the following actions on behalf of its clients: exchange between virtual assets and fiat currencies, exchange between one or more forms of virtual assets, transfer of virtual assets, safekeeping, and/or administration of virtual assets or instruments enabling control over virtual assets, participating in and provision of financial services related to an issuer's offer, and/or sale of a virtual asset. VASPs by FATF standards are considered Money Servicing Businesses (MSB) by FinCEN standards and have specific AML obligations to fulfill under the BSA. What Exactly is a Virtual Asset Service Provider (VASP)? - CipherTrace Entities that are NOT VASPs include individual crypto miners, people being part of a cryptocurrency mining pool, individual traders, and central banks
Virtual Asset	Virtual assets are a new addition by FATF for governing the use of blockchain-based digital and virtual assets as well as a digital currency. The definition of a virtual asset points out that it is a digital representation of value, eligible for trading, or transferring digitally. Virtual Assets are NOT digitavl variants of fiat currencies, securities, or other financial assets covered already in other sections of the FATF Recommendations.
Virtual Currency	Virtual currency is a digital representation of value that functions as a medium of exchange, a unit of account and/or a store of value; and is neither issued nor guaranteed by any jurisdiction (ACAMS).

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Appendix

Travel Rule Standards and Protocols

- IVMS: InterVASP Messaging Standard IVMS101 is the industry standard for exchanging Travel Rule information.
- TRISA (CipherTrace): Travel Rule Information Sharing Architecture built upon security and cryptography technologies–applies trusted public key infrastructure PKI to mutually authenticate VASPs and securely transmit sensitive transaction data.
- TRP: Travel Rule Protocol is an API (Application Program Interface) compliance solution developed by ING Group–merged in late 2021 with OpenVASP association.
- OpenVASP: Open source, decentralized common protocol designed for varied implementations across blockchain environment. OpenVASP protocol uses a communication handshake protocol that relies on structured messages and session keys to ensure encryption of transferred information. Relying on Ethereum's decentralized public key infrastructure, VASPs initiate a standardized smart contract to identify themselves on the blockchain (the last 32 bits of the address denote the VASP code). This unique blockchain identity is used in the initial handshake to establish contact with another VASP and subsequent messaging sessions.
- PayString: Universal payment identifier that supports cross-platform communication by using a human-readable identifier for each user when transacting currency digitally. The free, open-source code bridges the gap between different users, institutions, and currencies (both fiat and crypto), allowing users to transact across a global payment network.
- TRUST (Coinbase): Travel Rule Universal Solution Technology launched in the US early 2022 now includes 67 entities and VASPs in US, Canada, Singapore, and throughout Europe. Features include:
  - No central storage of personal data–required information is only directly sent from one TRUST member to another through end-to-end encrypted channels
  - Proof of address ownership– RUST includes a mechanism for receiving VASPs to prove that it is the owner of the crypto address receiving before customer information is sent.
  - Core security & privacy standards–TRUST must meet core AML, sanctions, security, and privacy requirements before joining the solution.
- Technology for Travel Rule Compliance: X.509 certificates as global standard for security protocols and the basis for HTTPS.

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