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Gate Research: Analysis of the Stablecoin Sector – Current Status, Applications, Competition, and Outlook

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Abstract

This report thoroughly analyzes the stablecoin sector, examining key aspects such as market overview, current trends, application scenarios, competition, regulatory environment, and future growth opportunities. As a vital part of the cryptocurrency ecosystem, we discuss the categorization, evolution, and unique features of leading stablecoins. The report also highlights their broad applications in cryptocurrency trading, cross-border payments, and the DeFi space. We further evaluate the competitive strengths and weaknesses of various stablecoin types, as well as the challenges and potential for emerging stablecoin projects. Additionally, we explore how global regulatory policies impact the development of stablecoins. Finally, we offer predictions for the future of the stablecoin sector, focusing on technological trends and market growth, providing valuable insights into the stablecoin market’ s direction.

1 Overview of the Stablecoin Market

1.1 Definition and Classification

Stablecoins play a critical role in the cryptocurrency market by aiming to maintain stable value through pegging to fiat currencies or other assets. This unique feature makes them stand out in the highly volatile crypto market, positioning them as the preferred tool for investors looking for a safe-haven asset and stable value storage.

1.1.1 Main Classification Methods: Collateral Type and Issuance Model

Based on the type of collateral assets, stablecoins can be classified into fiat-collateralized, crypto-collateralized, and algorithmic stablecoins. Fiat-collateralized stablecoins, such as USDT, USDC, etc., maintain a 1:1 peg with fiat currencies like the US dollar and rely on ample fiat reserves to ensure price stability, dominating the market. Crypto-collateralized stablecoins, such as DAI, utilize over-collateralization of cryptocurrencies like Ethereum, and rely on smart contracts for decentralized issuance and management, offering users an alternative stablecoin option. Algorithmic stablecoins, such as FRAX, aim to maintain price stability by adjusting supply and demand through complex algorithms. Although still in the exploratory phase, they have already shown innovative potential. [1]

Figure 1: Stablecoin Classification Framework

Stablecoin Classification Framework		
Classification Method	Category	Example Coins
Collateral Type	Fiat-Collateralized	USDT/USDC/FDUSD
	Crypto-Collateralized	DAI/USDe
	Algorithmic Stablecoins	FRAX
Issuance Model	Centralized	USDT/USDC/FDUSD/PAXG
	Decentralized	DAI/FRAX

Gate Research, Data from: Laoli

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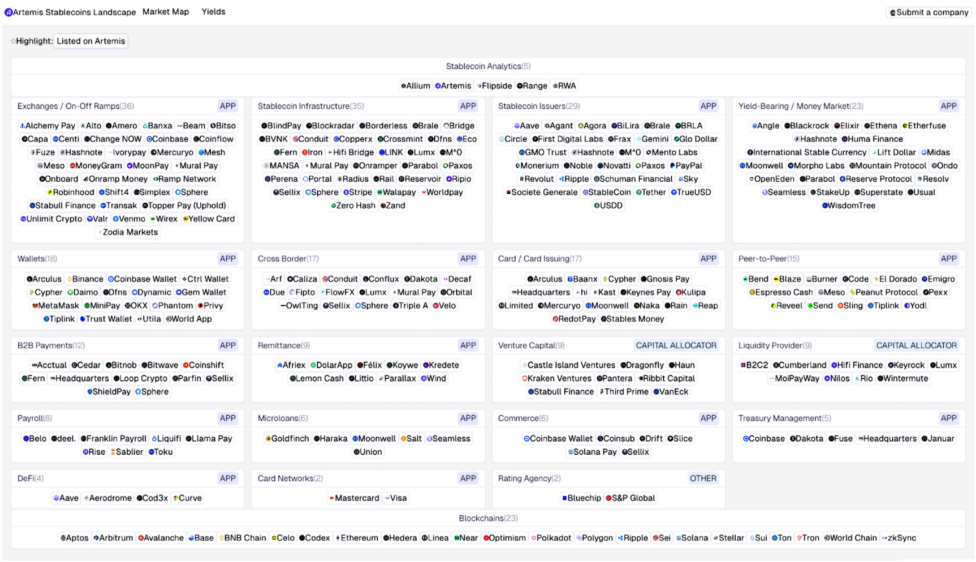
Regarding the issuance model, stablecoins can be divided into centralized and decentralized categories. Established organizations typically issue centralized stablecoins that ensure stability through strong resource backing and credit. On the other hand, decentralized stablecoins rely on smart contracts and blockchain technology to facilitate community-driven governance, offering greater transparency and user control.

1.1.2 Stablecoin Classification by ”Market Map Sections”

Figure 2: Stablecoin Market Map Sections



Gate Research, Data from: Artemis Stablecoins Landscape

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Stablecoins can be divided into 20 different sections based on the market map, each representing a distinct area within the stablecoin market. These sections include companies or projects relevant to each area, as shown in the map. The stablecoin market map provides a clear view of the ecosystem, encompassing all aspects from issuance, trading, infrastructure, applications, to investment. The classification’s logic is based on each project’s role within the stablecoin ecosystem. The sections are tightly interconnected and work together to form the full ecosystem. By referencing the stablecoin market map, you can quickly identify the key players and understand how each sector is organized.

This classification is based on data from Artemis, and the map shown here reflects the latest data as of February 8, 2025. It includes most of the relevant projects and companies, but if any are missing, you can submit new company or project information in the top-right corner. Below are the details of each section of the stablecoin market map: [2]

1. **Exchanges / Inflow and Outflow Channels**: 36 projects, such as Alchemy Pay and MoonPay, focus on cryptocurrency trading and capital inflows/ outflows, acting as essential links between stablecoins and traditional financial systems.

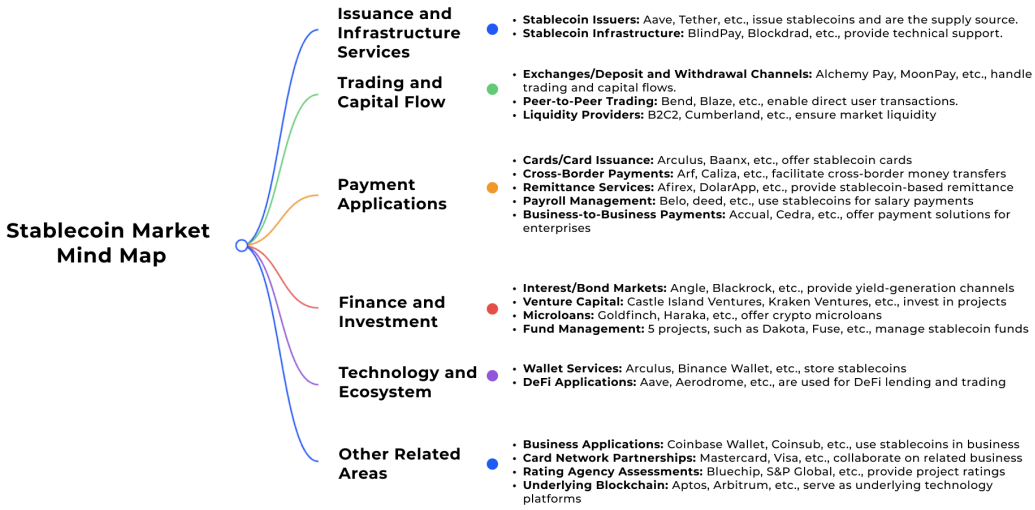
2. **Stablecoin Infrastructure**: 35 projects, like BlindPay and Blockradar, provide technical support for stablecoins, covering blockchain technologies and data services necessary for

their operation.

3. **Stablecoin Issuers**: 29 projects, such as Aave and Tether, are responsible for issuing stablecoins, determining their supply in the market.
4. **Interest / Money Market**: 23 projects, like Angle, Blackrock, etc., offering users the opportunity to earn returns through stablecoins, covering financial activities such as lending and investing, similar to traditional financial money markets.
5. **Wallets**: 18 projects, like Arculus, Binance Wallet, etc., used to store and manage stablecoins and other cryptocurrencies, acting as tools for users to hold and use stablecoins.
6. **Cross-Border Payments**: 17 projects, like Arf, Caliza, etc., focusing on using stablecoins for cross-border payments and capital flows, addressing issues such as high costs and slow speeds in traditional cross-border payments.
7. **Cards / Card Issuance**: 17 projects, like Arculus, Baanx, etc., involving the issuance and service of payment cards related to stablecoins, integrating stablecoins with traditional payment card systems to expand stablecoin use cases.
8. **P2P (Peer-to-Peer)**: 5 projects, such as Bend, Blaze, etc., enabling users to directly trade stablecoins or related services, with a decentralized nature.
9. **B2B (Business-to-Business) Payments**: 9 projects, such as Accual, Cedra, etc., providing stablecoin-based payment solutions for business transactions, improving efficiency and reducing costs.
10. **Remittance Services**: 9 projects, such as Afriex, DolarApp, etc., using stablecoins for remittance services, offering a more convenient and lower-cost option for cross-border remittances.
11. **Venture Capital**: 13 projects, such as Castle Island Ventures, Kraken Ventures, etc., investing in stablecoin-related projects and driving innovation and development in the stablecoin sector.
12. **Liquidity Providers**: 9 projects, such as B2C2, Cumberland, etc., providing liquidity to the stablecoin market, ensuring smooth transactions and preventing issues like insufficient market depth.
13. **Salary Payments and Management**: 8 projects, such as Belo, Deel, etc., involved in salary distribution and management using stablecoins, offering new payment options for businesses and employees.
14. **Micro Loans**: 6 projects, such as Goldfinch, Haraka, etc., operating micro-lending services in the cryptocurrency space, providing small loans to users.

15. **Commercial Applications**: 7 projects, such as Coinbase Wallet, Coinsub, etc., mainly involve the use of stablecoins in commercial activities such as shopping and payments.
16. **Capital Management**: 5 projects, such as Dakota, Fuse, etc., focused on managing stablecoin funds, ensuring proper allocation, risk control, and optimizing operations within the stablecoin ecosystem.
17. **Decentralized Finance**: 4 projects, such as Aave, Aerodrome, etc., apply stablecoins in decentralized finance (DeFi) to provide decentralized lending, trading, and liquidity mining services.
18. **Card Networks**: 2 projects, Mastercard and Visa, traditional card payment networks involved in stablecoin-related activities, promoting the integration of stablecoins with traditional payment systems.
19. **Rating Agencies**: 2 projects, Bluechip and S&P Global, rating stablecoin projects or related entities, providing market participants with reference information.
20. **Blockchain Underlying Technology**: Lists 23 blockchain projects, such as Aptos, Arbitrum, etc., which are the underlying technology platforms for stablecoin operations, with different stablecoins issued and run on different blockchains.

Figure 3: Stablecoin Market Mind Map



Gate Research, Data from: Google Trends

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The stablecoin market map made it easier to understand through a mind map summarizing the 20 sub-sectors of the stablecoin market, as shown above.

1.2 Development History Overview

1.2.1 Early Exploration (2014 - 2015)

Tether launched USDT in 2014, one of the first stablecoins pegged 1:1 to the US dollar through a fiat-backed model. This provided a relatively stable trading medium for the volatile cryptocurrency market and kicked off the development of stablecoins. By 2015, the concept of stablecoins began circulating in the crypto community. While the market was still small, it sparked significant interest and discussions around stabilizing crypto asset prices.

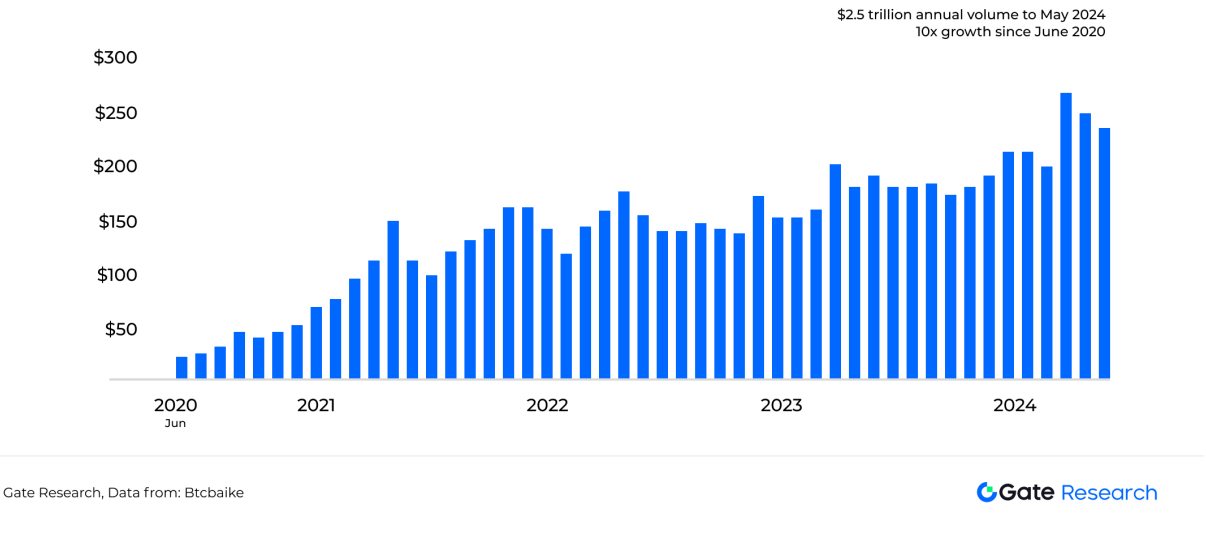
1.2.2 Initial Development (2016 - 2017)

In 2016, decentralized stablecoin projects began to emerge, aiming to leverage blockchain’s decentralized nature to create stablecoin systems. However, the technology was still developing and faced many challenges. The crypto bull market of 2017 drove a huge surge in stablecoin demand, with many new projects appearing, making competition in the market fiercer. Stablecoins started being used for more than just trading—they expanded into payment, investment, and other areas.

1.2.3 Market Turmoil and Adjustment (2018 - 2019)

The crypto market experienced a major crash in 2018, and some stablecoin projects revealed issues like insufficient reserves and regulatory compliance problems, shaking trust in stablecoins. Regulators started paying more attention to stablecoins, leading the industry to self-regulate and adjust. In 2019, stablecoin projects made greater efforts toward compliance, with some undergoing voluntary audits to increase transparency and innovating to improve stability and security.

Figure 4: Monthly Settlement Volume Trend of Stablecoins from 2020 to Present [3]



1.2.4 Rapid Expansion (2020 - 2021)

The rise of DeFi in 2020 led to explosive demand for stablecoins, which became a crucial component of the DeFi ecosystem. Various decentralized stablecoin projects optimized and integrated deeply with DeFi protocols, expanding use cases like lending and liquidity mining. According to the data shown, monthly stablecoin settlements began to rise significantly starting in June 2020. By 2021, stablecoin markets had expanded further, with traditional financial institutions and major corporations entering the space, driving compliance and mainstream adoption.

1.2.5 Challenges and Transformation (2022 - 2023)

In 2022, the crypto market faced another crisis with the collapse of the algorithmic stablecoin UST, exposing the risks of such models. This raised expectations for more stability and reliability in stablecoins. Regulatory measures tightened, with stricter oversight globally. By 2023, the stablecoin industry entered a transformation phase, with projects focusing on risk management and compliance while exploring new collateral models and stability mechanisms. Monthly stablecoin settlement volumes remained strong, between $150 billion and $200 billion, showing a continued market demand.

1.2.6 Ongoing Innovation and Integration (2024 - Present)

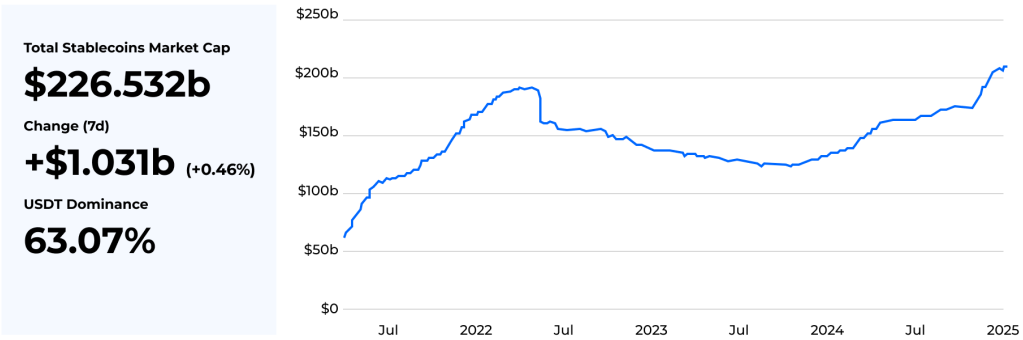
From 2024 onwards, stablecoins continued to evolve through technological innovations, expanded applications, and deeper integration with traditional finance. Many projects are now explo-

ring backing their stablecoins with real-world assets like gold and real estate. Use cases in cross-border payments, supply chain finance, and more are growing, and partnerships with traditional financial institutions are increasing. By May 2024, the annual stablecoin settlement volume had reached $2.5 trillion, a tenfold increase since June 2020. This growth shows not only the expansion of the stablecoin market but also the increasing importance of stablecoins in both crypto and broader financial systems. This surge is closely tied to the growth of the crypto market, the rise of DeFi, and increasing adoption by traditional finance.

2 Stablecoin Market Size and Current Landscape

2.1 Overall Growth Trend

Figure 5: Growth Trend of Stablecoin Market Cap



Gate Research, Data from: Defillama

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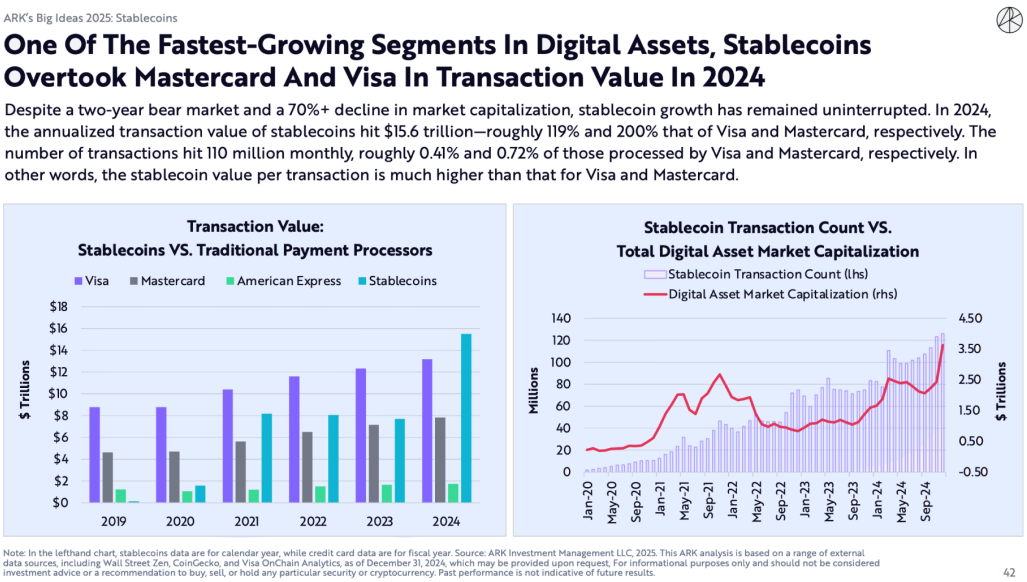
In 2017, the stablecoin market was still in its early stages, with a total market capitalization of just a few billion dollars. However, by 2023, the market experienced rapid growth, with market cap and trading volume continuously increasing, signaling strong growth potential. This growth can be attributed to the overall boom in the cryptocurrency market, the rising demand for safe-haven assets, and the increasing adoption of stablecoins across various use cases, triggering a period of high-speed growth. As per Defillama's data (shown above), by January 12, 2025, the total market cap of stablecoins reached $206.231 billion, marking a significant leap compared to previous years. [4]

Figure 6: 2024 Projected Annual Trading Volume of Stablecoins

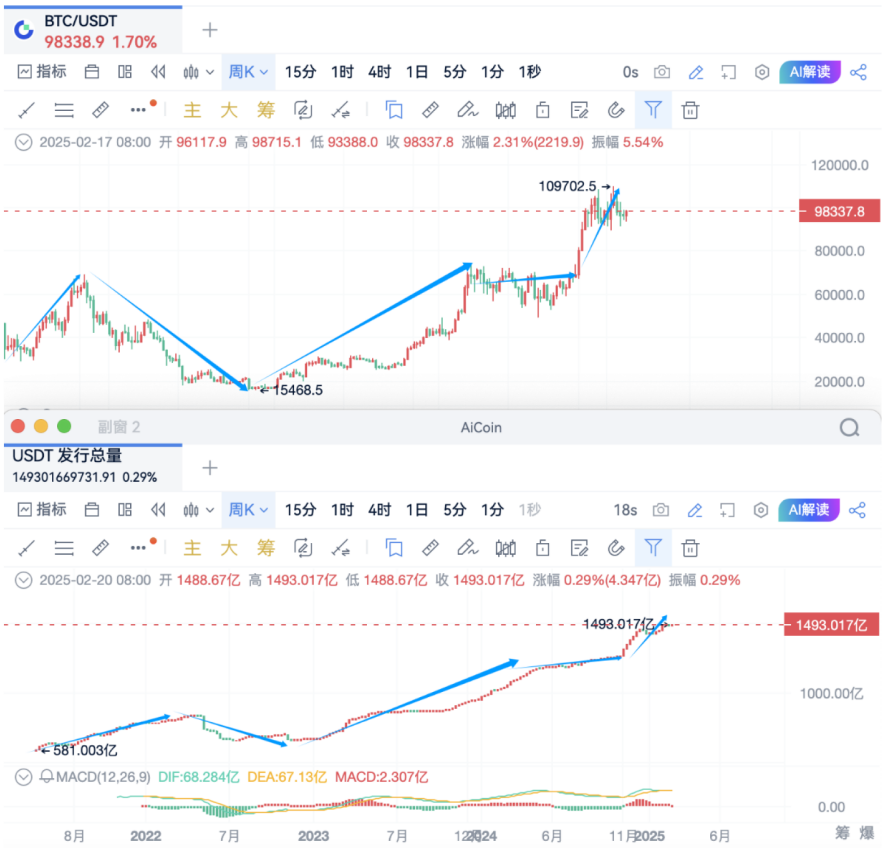


Gate Research, Data from: ARK's Big Ideas 2025: Stablecoins

Looking at trading volume, stablecoins have also seen explosive growth. According to ARK Invest's BIG IDEAS 2025 report from February 5, 2024's projected annual trading volume of stablecoins is expected to reach $15.6 trillion. [5] This demonstrates stablecoins' central role and their high-frequency liquidity within the crypto ecosystem. The strong growth is driven by the crypto community's increasing recognition of stablecoins as vital tools for trading and value storage. Their use across everyday trading, cross-border payments, and DeFi lending continues to drive this upward trend.

A deep dive into the factors driving the increase in stablecoin trading volume shows that one of the key reasons is the expansion of the cryptocurrency market. As the prices of major cryptocurrencies like Bitcoin, Ethereum, and Solana have fluctuated and risen sharply, investors have increasingly relied on stablecoins for transactions, which has spiked demand for them.

Figure 7: Weekly Issuance Comparison of Bitcoin and USDT



Gate Research, Data from: AiCoin

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A trend comparison of Bitcoin (Gate.io BTC/USDT weekly K-line chart) and USDT, a major stablecoin, is shown in the figure above. [6] The trends of both assets are similar, meaning that as Bitcoin’s price rises, USDT issuance increases while it decreases or stabilizes during price corrections. The overall growth in the cryptocurrency market, alongside growing demand for crypto purchases, has naturally pushed up the overall market cap of stablecoins.

In addition to the secondary market, the primary market has also been significantly influenced. Since late 2020, the DeFi boom has injected significant energy into the stablecoin market. Stablecoins, as essential assets in DeFi lending, trading, and liquidity mining, have seen their importance grow. For example, MakerDAO’s DAI stablecoin is widely used within DeFi lending protocols, where users mint DAI by pledging crypto assets and then lend them out for profit. This process has accelerated DAI’s circulation and demand, driving the mutual growth of both the stablecoin and DeFi ecosystems.

Furthermore, the increasing demand for safe-haven assets from investors outside the cryptocurrency market is another important factor. With rising global economic uncertainty and geopolitical risks, stablecoins, which are pegged to fiat currencies or other stable assets, provide a relatively safe refuge for investors. In emerging markets, where exchange rates fluctuate often, the demand for stablecoins from local residents and businesses has surged, further fueling the expansion of the stablecoin market.

2.2 Overview of Leading Stablecoins

Figure 8: Top 15 Stablecoins by Market Capitalization

Name	Chains	% Off Peg	1m % Off Peg	Price	1d Change	7d Change
1 Tether (USDT)	+77	0%	+0.10%	$1	-0.05% (-$77m)	+0.32% (+$462.04m)
2 USD Coin (USDC)	+95	-0.00%	-0.02%	$1	+0.20% (+$112.23m)	+1.29% (+$726.18m)
3 Ethena USDe (USDe)	+11	-0.01%	-0.38%	$1	-0.11% (-$6.74m)	-1.14% (-$67.8m)
4 Dai (DAI)	+41	-0.07%	-0.08%	$1	+0.61% (+$28.31m)	+1.71% (+$79.08m)
5 Sky Dollar (USDS)		-0.04%	+0.90%	$1	+3.67% (+$146.36m)	-7.54% (-$337.14m)
6 First Digital USD (FDU...		-0.04%	-0.76%	$1	-0.34% (-$6.03m)	-2.12% (-$38.62m)
7 Usual USD (USD0)		-0.25%	-0.64%	$1	-0.00% (-$6,396)	-1.59% (-$18.08m)
8 PayPal USD (PYUSD)		-0.02%	-0.32%	$1	+0.86% (+$6.64m)	+21.58% (+$137.56m)
9 USDD (USDD)		0%	+0.80%	$1	-0.00% (-$19,447)	-0.00% (-$33,694)
10 USDX Money USDX (...		-0.18%	-1.75%	$1	-0.08% (-$497,681)	-0.05% (-$333,182)
11 BlackRock USD (BUIDL)		0%	-	$1	< 0.0001% (-$0.23)	-1.45% (-$8.36m)
12 Resolv USD (USR)		-0.06%	+1.19%	$1	-1.12% (-$6.31m)	-3.40% (-$19.64m)
13 Honey (HONEY)		-0.12%	-0.65%	$1	+0.97% (+$4.77m)	+66.80% (+$199.63m)
14 TrueUSD (TUSD)	+4	-0.21%	-0.70%	$1	-0.03% (-$145,646)	+0.06% (+$291,291)
15 Ondo US Dollar Yield (...	+5	+7.90%	+8.70%	$1.08	< 0.0001% (+$0.05)	+13.19% (+$50.67m)

Gate Research, Data from: DefiLlama

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According to data from Defillama, the top 15 stablecoins by market capitalization are shown above. [7] Among the major stablecoins in circulation, centralized stablecoins backed by the US dollar include USDT, USDC, FDUSD, and others, generally with collateralization ratios exceeding 100%. DAI is a decentralized stablecoin backed by crypto assets, while USDe is a synthetic USD stablecoin, collateralized by crypto assets. FRAX is an algorithmic stablecoin, and PAXG is a stablecoin backed by gold.

With 209 stablecoins recorded by Defillama, it’s not feasible to cover all of them in this article. Based on the three types of collateral —fiat currency, crypto assets, and algorithmic rules — along with the centralized and decentralized issuance models, we have selected six major sta-

blecoins with larger market caps and representative characteristics: USDT, USDC, DAI, USDe, FRAX, and PAXG. These will be introduced briefly below.

2.2.1 USDT: The Pioneer and Dominant Stablecoin

USDT, issued by Tether, is both the pioneer and leader in the stablecoin space. Since its launch in 2014, it has played a vital role in the cryptocurrency market. Its mechanism works by users depositing USD into Tether’ s account. In return, Tether mints an equivalent amount of USDT on the blockchain at a 1:1 ratio. These minted USDT enter circulation and are freely traded on major cryptocurrency exchanges. During the redemption phase, users simply return their USDT to Tether, which then destroys the equivalent amount of USDT and returns the same amount of USD to the user. This process is straightforward and efficient, ensuring a stable supply-demand balance and maintaining the price stability of USDT.

Figure 9: USDT Issuance Data for Tether in 2024 and 2023

FINANCIAL FIGURES	31 December 2024			31 December 2023		
In USD Millions	**Total Assets**	**Total Liabilities**	**Equity**	**Total Assets**	**Total Liabilities**	**Equity**
Tether International Limited & Tether Limited (Combined) (Reserves)[3]	143,705	(136,618)	7,087	96,778	(91,575)	5,203
Tether Investments Ltd.[4]	12,442	-	12,442	321	(19)	302
Other reported Group entities[5]	1,446	(945)	501	1,522	(22)	1,500
TOTAL	**157,593**	**(137,563)**	**20,030**	**98,621**	**(91,616)**	**7,005**

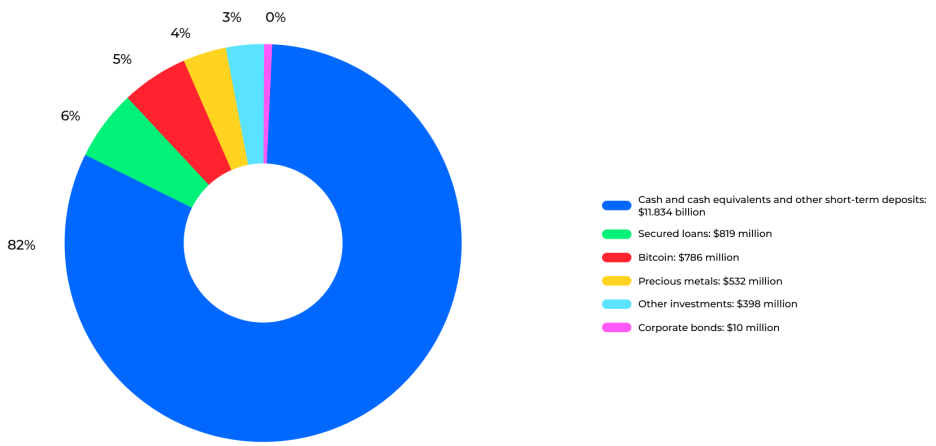
Gate Research, Data from: Tether

Gate Research

2.2.1.1 Market Data

On February 1, 2025, Tether released its Q4 2024 report, revealing some changes in the structure of its asset reserves. [8] According to the data, as of December 31, 2024, Tether’ s total assets amounted to $143.7 billion, while its total liabilities stood at $136.6 billion. This means that Tether’ s assets exceeded its liabilities by roughly $7.09 billion. The increase in its excess reserves compared to previous reports strengthens the stability of USDT.

Figure 10: Tether Q4 2024 USDT Asset Reserve Breakdown



Gate Research, Data from: Laoli

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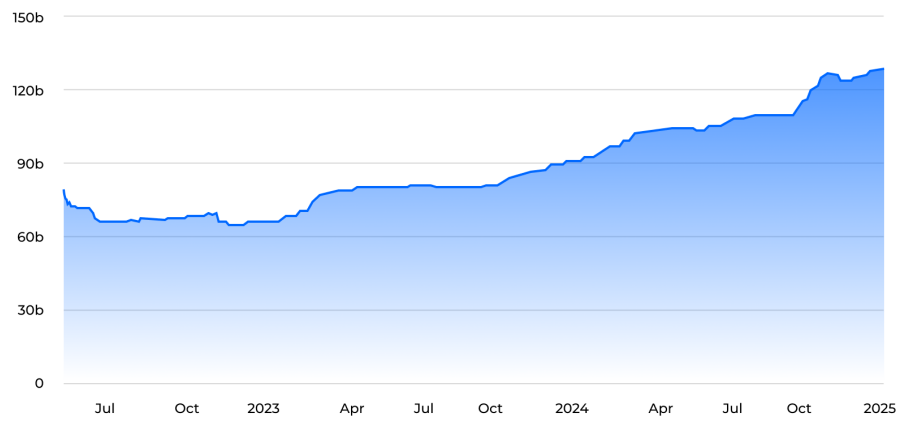
2.2.1.2 Asset Reserve Breakdown

Looking at the composition of Tether's reserves [9], cash, cash equivalents, and other short-term deposits made up 82.35%, totaling $118.34 billion. A significant portion of this —$113 billion — is held in U.S. Treasury bonds, making Tether one of the largest holders of U.S. government debt. This high proportion of U.S. Treasuries provides stable backing for USDT and boosts its liquidity. In terms of Bitcoin, Tether further increased its holdings in Q4 2024, reaching nearly 84,000 BTC by the end of the year, worth around $7.86 billion. Diversifying its reserves provides additional stability and offers potential upside through Bitcoin price fluctuations. Additionally, Tether holds $5.32 billion in precious metals, mainly gold, which is a traditional hedge asset. Along with U.S. Treasuries and Bitcoin, these assets form a diversified reserve mix that helps stabilize USDT' s value.

2.2.1.3 Profit Model

Tether' s profit model is similar to that of traditional banks, relying on low-cost funds from customers for investment returns. As the leading stablecoin, USDT' s widespread market acceptance attracts numerous users, which keeps acquisition costs low. Tether uses these funds for investments, primarily in U.S. Treasuries. By July 2024, Tether held over $97.6 billion in U.S. government bonds, generating substantial interest income. In addition, Tether engages in lending activities to earn interest and invests in equity projects, such as in neuro-implant technology startups, aiming for capital appreciation. While redemption and account verification fees also contribute to profits, investment income is the largest and most important source.

Figure 11: USDT Market Share



Gate Research, Data from: Defillama

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2.2.1.4 Market Share

USDT has consistently held the top position in terms of market share. As of January 12, 2025, its market capitalization reached $137.67 billion [10], accounting for 66.76% of the total stablecoin market. USDT has become a standard trading pair on most cryptocurrency exchanges, facilitating the trading of major cryptocurrencies like Bitcoin and Ethereum, and providing deep liquidity to the market.

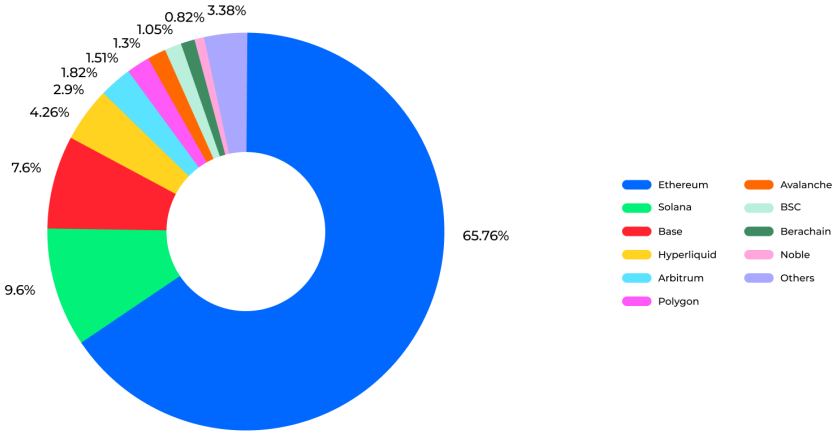
2.2.1.5 Controversies and Compliance

Despite its success, USDT is not without controversy. Its centralized nature, both in terms of issuance and operation, has raised questions about transparency. In the past, some participants have questioned whether Tether holds sufficient USD reserves, though recent audit reports have helped address these concerns. However, regulatory scrutiny remains a constant issue. Some governments have launched investigations into USDT’ s compliance and have pushed for increased transparency to ensure market stability and protect investors.

2.2.2 USDC: Fiat-Collateralized Stablecoin

Launched in 2018 by Coinbase and Circle, USDC quickly emerged as the second-largest stablecoin after USDT, owing to its rigorous operational model and compliance advantages. [11]

Figure 12: USDC



Gate Research, Data from: Defillama

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2.2.2.1 Operational Model

In terms of operational details, USDC differs significantly from USDT. Its asset reserves are primarily composed of short-term U.S. Treasury bonds and cash, with shorter maturities, which provide significant liquidity advantages. Circle periodically discloses the maturity dates of its key Treasury assets. As of March 2024, the disclosed data showed that the maturity of its Treasury assets is all within 3 months, with the latest short-term debt maturing in June, totaling $11.4 billion. Additionally, repo agreements and cash reserves amounted to $28.2 billion, and there was another $4.2 billion in cash. Almost all assets are held in the Circle Reserve Fund (CRF), registered with the SEC and managed by BlackRock, with about 95% of these assets being under SEC supervision. This high degree of regulatory compliance has earned USDC significant market trust.

2.2.2.2 Regulation and Transparency

USDC excels in regulatory transparency. Circle regularly publishes independent audit reports, providing detailed disclosures on the matching of USD reserves with circulating USDC. This lets investors clearly understand its asset status, making them confident in holding and using USDC.

2.2.2.3 Market Competitiveness

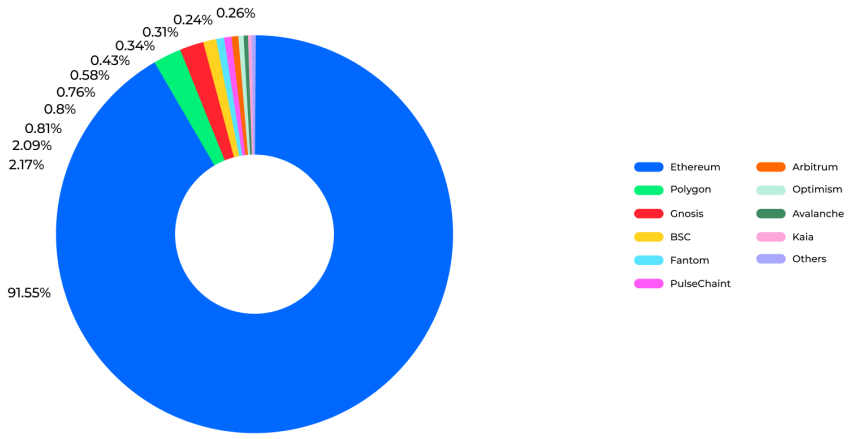
In terms of market competitiveness, USDC has gained rapid recognition from many cryptocurrency exchanges and financial institutions, thanks to the extensive resources and broad influen-

ce of Coinbase and Circle within the crypto industry. It is widely used across various use cases, including cross-border payments, DeFi lending, and corporate fund management. For instance, in Visa's cross-border settlement pilot project, Crypto.com chose USDC for global settlements, highlighting its efficiency and stability in large-scale payments.

2.2.3 DAI: Decentralized/Crypto-Collateralized Stablecoin

Issued and managed by the decentralized autonomous organization (DAO) MakerDAO, DAI stands as the benchmark for decentralized stablecoins, bringing a new paradigm to the crypto market.

Figure 13: DAI



Gate Research, Data from: Defillama

Gate Research

The creation of DAI stems from users pledging crypto assets on the MakerDAO platform, primarily ETH, which currently accounts for 91.55% of the collateral. [12] Through the automation of smart contracts, DAI is minted according to a specified collateralization ratio. For example, a user who locks up $150 worth of ETH may receive $100 worth of DAI. This over-collateralization mechanism forms the foundation for DAI's price stability.

2.2.3.1 Stability Mechanism

Price stability and liquidation mechanisms are the core highlights of DAI. To address the volatile nature of the crypto market, MakerDAO has designed an intricate system of interest rate adjustments and liquidation procedures. When the market price of DAI deviates from $1, the system automatically adjusts the stability fee (similar to a loan interest rate) and the DAI savings rate

(DSR), using economic incentives to encourage market participants to either buy or sell DAI, thereby stabilizing its price. Furthermore, suppose the value of the collateral drops significantly and hits the liquidation threshold. In that case, the system triggers a Dutch auction to sell off the collateral at a reasonable price, recovering DAI and ensuring the overall system's stability, while preventing bad debt.

2.2.3.2 Role in the DeFi Ecosystem

In the DeFi ecosystem, DAI plays an indispensable role. It is widely used for collateralized lending, margin trading, international remittances, and supply chain finance, providing decentralized and permissionless financial services to users. For instance, in the decentralized lending platform Compound, users can pledge idle crypto assets to receive DAI and then lend out their DAI to earn interest, optimizing asset usage. This mechanism also allows DAI to achieve deep value circulation within the DeFi ecosystem.

With the continued expansion of the DeFi market, DAI is expected to leverage its unique decentralized advantages to attract more users and capital, further extending its use cases and becoming a key driving force in the maturation of the DeFi ecosystem.

2.2.4 USDe: Semi-Centralized Stablecoin / Synthetic Dollar

Figure 14: USDe

Gate Research, Data from: Ethena

Gate Research

USDe, launched by Ethena, is a distinctive semi-centralized stablecoin and a prime example of a synthetic dollar. Since its debut in 2024, it has gained significant traction in the stablecoin

market, rising to become the third-largest stablecoin by market capitalization, as shown in previous data. USDe is built on the Ethereum blockchain and aims to offer a crypto-native currency solution that doesn’t rely on traditional banking systems. This innovative concept has helped it stand out among other stablecoins.

2.2.4.1 Attribute Composition

Regarding core attributes, USDe is classified as a fully-collateralized semi-centralized stablecoin. Stablecoins are often categorized by three primary metrics: whether they are fully collateralized, whether they are permissionless to issue, and whether they are non-custodial. When comparing these attributes, USDe differs from other common stablecoins in all three aspects. If ”decentralized” is defined as meeting both ”permissionless issuance” and ”non-custodial” criteria, then USDe would not meet this standard. Therefore, it is more accurate to classify USDe as a ”fully-collateralized semi-centralized stablecoin.”

2.2.4.2 Collateral Asset Value

Regarding collateral value, USDe’s collateral consists of a synthetic asset formed by crypto assets and corresponding short futures positions. The value of this synthetic asset is determined by both the spot price and the value of the short futures position. Initially, if the spot price is X and the futures position has no value (0), and assuming the basis is Y, the total collateral value would be X + 0. As time progresses, both the spot price and futures position value change. For example, if after some time the spot price rises by a dollars and the futures position rises by b dollars (a and b can be negative), the new position value would be X + a - b = X + (a - b), and the basis would change to Y + ΔY (where ΔY = a - b). If ΔY stays the same, the intrinsic value of the position remains unchanged. If ΔY is positive, the intrinsic value increases; if ΔY is negative, the intrinsic value decreases. This combination of holding the spot and shorting the futures position is known as ”cash-and-carry arbitrage.” Based on current data, creating such a portfolio can yield an annualized return of about 18% with low risk. At present, USDe’s core collateral ratio is 101.62%. When considering ENA’s circulating market cap of $1.57 billion, the broader collateral ratio can reach approximately 178%, which means USDe is well-collateralized, and concerns about insufficient assets to cover liabilities are not justified.

2.2.4.3 Risks and Challenges

Despite its innovations, USDe is not without risks. One of the primary concerns is market capacity risk. Currently, USDe has an issuance volume of around $2.04 billion, of which ETH and

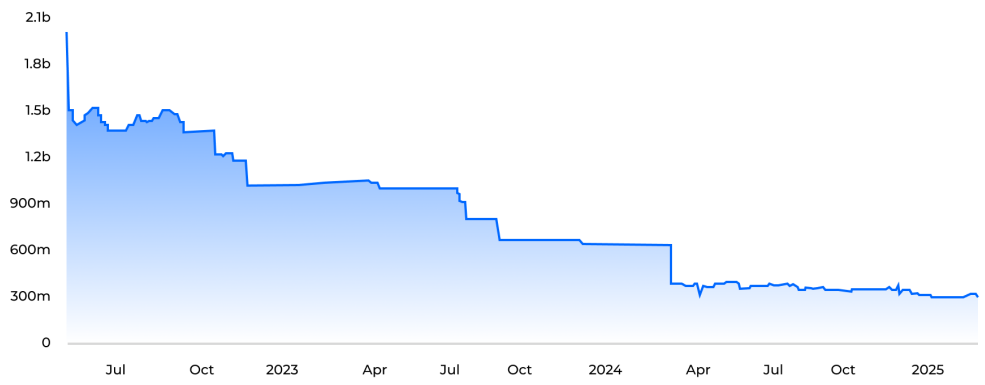
LST (Liquid Staking Tokens) account for about $1.24 billion. This means that to fully hedge its issuance, $1.24 billion in short positions would need to be established. The scale of these positions is directly proportional to USDe's issuance size. As an example, Binance's ETH perpetual contract positions currently stand at about $3 billion. A large portion of Ethena's reserves is held on Binance, and opening short positions at this exchange could lead to trading friction, difficulties in handling large redemption requests, and pressure on short supply, which would cause fee rates to decrease and impact returns. While mechanisms such as time-based minting/burning limits and dynamic rates, or the introduction of multi-currency and multi-exchange strategies, could help alleviate these risks, overcoming USDC to become the second-largest stablecoin still presents a significant challenge. Additionally, custodial risk remains a concern. While USDe has solved certain issues that traditional stablecoins face, these potential risks must be carefully addressed as the platform develops.

In summary, USDe, with its unique mechanism and innovative approach, has carved out a space in the stablecoin market. While its future prospects are promising, it will need to tackle various potential risks effectively to ensure its sustained growth and stability in the market.

2.2.5 FRAX: An Algorithmically Issued Stablecoin

FRAX currently ranks 15th by market cap among stablecoins. While its algorithmic mechanism is notable, the collapse of UST (Terra LUNA's USD stablecoin, which had been the third-largest stablecoin by market cap) in 2022 significantly impacted the reputation of algorithmic stablecoins. As a result, the overall market capitalization of algorithmic stablecoins has declined [13]. FRAX stands out as a pioneering project in this space, being the first stablecoin to use a fractional algorithm, giving it a unique position in the market.

Figure 15: FRAX



Gate Research, Data from: Defillama

Gate Research

FRAX's main goal is to replace fixed-supply digital assets with a highly scalable, decentralized algorithmic currency pegged to the US dollar. The system aims to keep the price stable through two key mechanisms: collateral backing and algorithmic control.

2.2.5.1 Dynamic Adjustment of Collateral Ratio

FRAX uses a flexible collateral system. Unlike fully collateralized or uncollateralized stablecoins, its collateral ratio adjusts dynamically based on market conditions. If the price of FRAX rises above $1, the system reduces the collateral ratio and relies more on the algorithm. On the other hand, if the price drops below $1, the system increases the collateral to push the price back toward $1. This dynamic mechanism helps maintain price stability in varying market conditions.

2.2.5.2 Algorithm Design

The algorithm behind FRAX is complex and sophisticated. It uses a series of smart contracts and economic incentives to manage the supply of FRAX. For instance, when the price of FRAX rises above $1, users can mint new FRAX by locking in collateral, increasing its supply and driving the price back down. If the price falls below $1, the system incentivizes users to burn FRAX in exchange for collateral, thus reducing the supply and pushing the price back up. This mechanism allows FRAX to automatically adjust the supply and demand in a decentralized manner, keeping the price stable.

2.2.5.3 Market Applications

FRAX is gradually gaining traction in cryptocurrency trading and the DeFi ecosystem. In trading, it is paired with other cryptocurrencies to offer a more stable transaction medium, reducing risks and slippage. In DeFi, FRAX is widely used in lending, liquidity mining, and other decentralized financial applications. Thanks to its unique mechanism and peg to the US dollar, it has gained popularity among DeFi projects and users.

2.2.5.4 Challenges and Risks

FRAX does face some challenges and risks. One major concern is the complexity of its algorithm, which could lead to instability during extreme market conditions. For example, during a market panic or massive sell-offs, the algorithm could fail to maintain stability. A previous example is UST, another algorithmic stablecoin, which suffered a catastrophic de-pegging event in May 2022 due to design flaws, causing a dramatic loss in market value and undermining trust

in algorithmic stablecoins. This highlighted the vulnerability of such algorithms under extreme conditions, where a loss of market confidence could render the system ineffective. Another challenge is the evolving regulatory landscape. As a decentralized stablecoin, FRAX must adapt to new compliance standards to ensure long-term stability in the market. Despite these challenges, FRAX remains a key player in the stablecoin market with its innovative fractional algorithm, offering new perspectives and practical examples for the future of stablecoins.

2.2.6 PAXG: A Physical Gold-Backed Stablecoin

PAXG is a unique stablecoin that stands out because it is backed by physical gold. Each PAXG token is supported by one troy ounce of gold, stored in a Brink's vault, and certified by the London Bullion Market Association (LBMA). This sets PAXG apart from traditional stablecoins, which are typically backed by fiat currencies or cryptocurrencies. It allows investors to digitize gold and trade it securely on the blockchain [14].

Figure 16: PAXG

Gate Research, Data from: Hinvest

Gate Research

2.2.6.1 Issuance and Redemption Process

The process of issuing and redeeming PAXG is straightforward. Paxos, the issuer, mints PAXG tokens based on the USD deposited by users, according to the current gold price. The corresponding amount of gold is then stored in a vault. When users want to redeem their PAXG tokens, they can return them, and Paxos will provide the equivalent amount in USD, based on

the current gold price, while withdrawing the appropriate amount of gold from the vault. This mechanism ensures that PAXG remains closely tied to the value of gold, ensuring its price stability.

2.2.6.2 Benefits and Convenience

PAXG offers some distinct advantages. First, it allows investors to gain exposure to gold without physically owning or storing the metal, reducing storage costs and security risks. The use of blockchain technology enables 24/7 trading, which enhances the liquidity of gold assets. Additionally, PAXG is an ideal solution for cryptocurrency investors who prefer having a tangible asset backing their investment. It combines the stability of gold with the convenience of digital currency.

2.2.6.3 Current Status and Challenges

However, PAXG is not without its challenges. Its value is closely tied to the price of gold, and while gold is often seen as a safe-haven asset, its price can still experience significant fluctuations in certain market conditions, which could affect the price stability of PAXG. Additionally, compared to other stablecoins, PAXG has lower market recognition and adoption, particularly in cryptocurrency trading and applications. Nevertheless, as the demand for diversified asset portfolios grows and more people embrace the digitization of gold, PAXG is likely to gain traction and secure its place in the stablecoin market as a unique asset for value storage and trading.

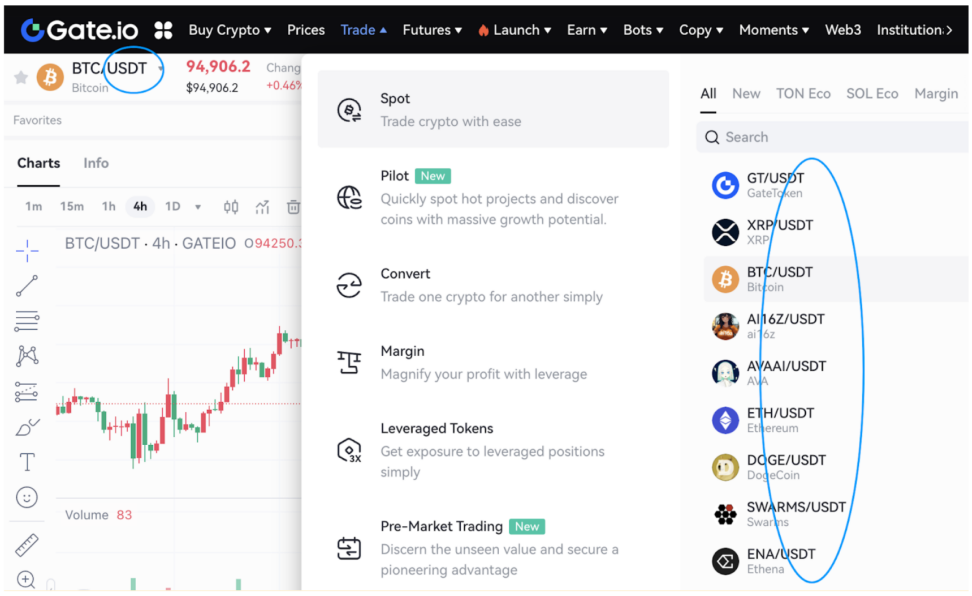
3 Stablecoin Use Cases

3.1 Applications in Cryptocurrency Market Trading

3.1.1 Cryptocurrency Trading Pairs

Stablecoins play a crucial role in cryptocurrency trading by forming trading pairs with various cryptocurrencies, providing liquidity to the market, and greatly improving trading efficiency. For example, popular cryptocurrencies like Bitcoin (BTC) and Ethereum (ETH) are paired with stablecoins such as USDT and USDC on nearly every major exchange. This allows users to easily buy and sell Bitcoin and Ethereum using stablecoins, without the concern of excessive price volatility. Additionally, the instant settlement feature of stablecoins significantly reduces trade confirmation times, making the trading process smooth and seamless. The image below illustrates the different use cases of stablecoin USDT trading pairs on the Gate.io platform [15].

Figure 17: Use Cases of Stablecoin USDT Trading Pairs



Gate Research, Data from: Gate.io

Gate Research

3.1.2 Providing Market Liquidity

In cases of sudden market fluctuations, such as a sharp decline in Bitcoin's price, investors can quickly exchange Bitcoin for stablecoins, effectively locking in the value of their assets. Once the market stabilizes, they can resume trading. The liquidity buffering function of stablecoins helps smooth out large price movements, giving investors more time to make decisions and take action.

3.1.3 Arbitrage and Risk Hedging

Stablecoins also provide new opportunities for arbitrage and risk hedging. Investors, by tracking price differences between cryptocurrency markets and exchanges, can use stablecoins to take advantage of short-lived arbitrage opportunities. For instance, if Bitcoin' s price against USDT is slightly lower on Exchange A compared to Exchange B, investors can buy Bitcoin on Exchange A, convert it into stablecoins, and then transfer it to Exchange B to sell for a profit. This arbitrage relies on accurate market judgment and the ease of transferring stablecoins between platforms.

From a risk hedging perspective, stablecoins offer a clear advantage. If the overall cryptocurrency market is declining, or if a particular cryptocurrency faces negative news, investors can convert their assets into stablecoins to avoid the risk of price crashes. Once the market recovers,

they can reallocate their assets. In this sense, stablecoins act as a safe haven, safeguarding investors' assets during periods of uncertainty.

3.2 Cross-Border Payments and Remittances

3.2.1 Comparison with Traditional Cross-Border Remittances

Stablecoins offer significant advantages over traditional bank cross-border remittances in the areas of cost and speed. Traditional methods often suffer from high fees, with average international transfer costs around 7%, and long wait times—usually between 2-5 business days—for funds to be received. This can be frustrating for users facing high costs and long delays.

In contrast, stablecoins leverage blockchain technology to break free from many of the limitations of traditional finance. Transaction fees with stablecoins can be as low as 1% or even less of the cost of traditional remittance methods, with funds often being transferred almost instantly. Regardless of where a user is in the world, sending money across borders is as easy as a few clicks. This low cost and high efficiency are especially useful for migrant workers sending remittances home or cross-border e-commerce businesses making payments, significantly improving cash flow and reducing operational costs [16].

Figure 18: Comparison of Stablecoin and Non-Bank Payment Models

Performance Characteristics	Stablecoins	Non-bank Payment (China)
Use Cases	Serve as a currency function in crypto asset trading; real-world applications are beginning to diversify.	Start with e-commerce transaction payments, gradually expanding to various online and offline payment scenarios.
Technology Used	Distributed ledger, strong anonymity, good openness, naturally cross-border.	Centralized ledger, real-name system, and account-by-account verification, primarily for domestic payments.
Prepaid Handling	Held in commercial banks and invested in deposits, and national, corporate, and municipal bonds.	Before 2018, funds were held in commercial banks as protocol deposits, then centralized to the People's Bank of China.
Prepaid Security	Users may not be able to redeem at face value.	Fully protected.
Business Model	Transaction fees for minting, redemption, and circulation; investment returns on reserve assets.	Interest on reserves held at the central bank; payment services are not highly profitable, relying on financial services derived from payments.

Gate Research, Data from: mpaypass.com.cn

3.2.2 Case Studies of Practical Applications

In remittance scenarios in emerging markets, Filipino workers in the U.S. and Europe faced high fees and significant exchange rate losses when sending money through traditional banks. Today, thanks to stablecoins, they can send their wages home at a fraction of the cost and with much faster transfers. Families receiving the funds can instantly convert them through local exchange points or wallets supporting stablecoins, providing real convenience and savings.

In the cross-border e-commerce sector, small businesses often struggle with long payment cycles and high fees using traditional payment channels. After switching to stablecoin settlements, funds are received much faster, enabling sellers to restock and expand their businesses more efficiently. For instance, a fashion e-commerce startup saw its funds turnaround time drop from a week to under a day after adopting stablecoin payments, reducing operating costs by around 30%, which helped the company scale faster.

Stablecoins are proving valuable in cross-border payments, offering a faster, cheaper way for businesses and individuals to transfer funds. Two prominent examples include:

BitPay Cryptocurrency Payment Platform: BitPay is widely used in cross-border payments and allows businesses to make payments using stablecoins. For example, a European electronics company with Asian suppliers faced high bank transfer fees (several dozen dollars per payment) and long processing times (3-5 business days), which hindered cash flow and supply chain efficiency. By using BitPay's stablecoin payments, they eliminated the need for intermediary banks, reducing fees to less than one-tenth of the traditional method, and sped up transaction times to just minutes. This has allowed the company to manage production and procurement better.

Abra Cross-Border Remittance Platform: Abra is reshaping the cross-border remittance landscape using stablecoins. In some African countries, workers sending money home have long dealt with high fees and unclear exchange rates when using traditional remittance services. With Abra' s platform, remitters convert their local currency into stablecoins, send them via the blockchain to the recipient's account, and then convert the stablecoins into the local currency. This reduces fees by over 50% compared to traditional services, while the stable value of stablecoins prevents exchange rate fluctuations, ensuring that remittances arrive in full and improving the user experience.

Despite these advantages, stablecoins face regulatory challenges. Some countries have strict regulations regarding their legality, anti-money laundering, and anti-terrorism financing rules, as

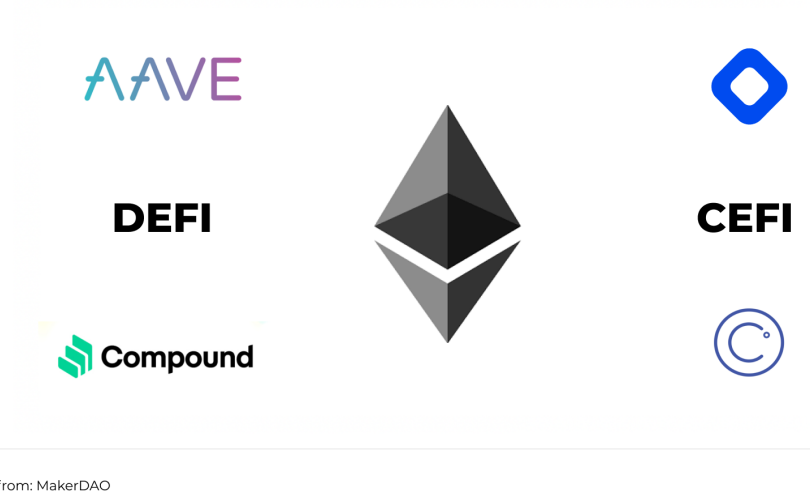
there are concerns that stablecoins could be used for illegal financial activities. To address this, stablecoin projects work closely with compliance service providers to ensure all transactions are legal and traceable. They also engage with regulators to help shape clearer, more robust policies, creating a better regulatory environment for the long-term use of stablecoins in cross-border payments.

3.3 Applications in the DeFi Ecosystem

3.3.1 Lending and Wealth Management

In the rapidly growing DeFi ecosystem, stablecoins have become a core pillar, especially playing a crucial role in lending and wealth management sectors. Take well-known DeFi lending platforms like MakerDAO, Compound, and AAVE as examples. Stablecoins are favored collateral and popular lending assets [17].

Figure 19: Well-Known DeFi Lending Platforms



Gate Research, Data from: MakerDAO

Gate Research

On the MakerDAO platform, users can mint DAI stablecoins by pledging crypto assets like ETH. This process revitalizes the user's crypto assets and injects substantial liquidity into the market. In terms of lending rates, they are dynamically adjusted based on market supply and demand. When funds are scarce, borrowing rates rise, attracting capital supply; when funds are abundant, borrowing rates decrease, stimulating lending demand. This market-driven rate adjustment mechanism ensures the efficient allocation of capital.

Interest-bearing stablecoins have opened up new avenues for passive income for users. Some projects offer interest-bearing stablecoins, such as Compound's cUSDC. When users deposit

USDC, they receive the corresponding cUSDC in return, and the earnings come from the platform's lending interest revenue distribution. The annualized return fluctuates based on market conditions. During periods of high demand for funds, returns can reach up to 10% or more, providing users with attractive passive income opportunities.

3.3.2 Decentralized Exchange (DEX) Trading Medium

Stablecoins are also indispensable in decentralized exchanges (DEXs). Take mainstream DEXs like Uniswap and SushiSwap as examples. Stablecoins, as trading mediums, greatly facilitate the exchange of various crypto assets. When users trade on Uniswap, they don't need to go through complex fiat-to-crypto conversions like on traditional exchanges; they can trade directly with stablecoins, making transactions fast and efficient.

The deep liquidity of stablecoins helps reduce slippage on DEXs, significantly cutting down trading costs. Large orders can be filled with minimal slippage even during peak market trading times, greatly improving the user trading experience. For high-frequency traders, the immediate settlement feature of stablecoins allows them to quickly seize market opportunities and adjust trading strategies, staying ahead of the curve in the fast-moving crypto market.

4 Competitive Landscape of the Stablecoin Sector

4.1 Comparison of Different Types of Stablecoins: Advantages and Disadvantages

Figure 20: Comparison of the Advantages and Disadvantages of Different Types of Stablecoins

Type	Stablecoin Representative	Advantages	Disadvantages	Development Key
Fiat-Collateralized Stablecoin	USDT/USDC/ FDUSD	Stable prices, strong reserve solvency	1) Audits, transparency, and security face scrutiny 2) Average capital efficiency 3) Centralization and custodial risks	Regulated, Proof of reserves, exchange support, diverse use cases
Crypto-Collateralized Stablecoin	DAI/USDe	Decentralized, transparent, non-custodial,accounts fully controlled by users	1) Insufficient price stability 2) Collateral volatility and liquidation risks 3) Average capital efficiency	Wealth effect, DeFi use cases
Algorithmic Stablecoin	Frax	No collateral, decentralized, transparent	1) Complex algorithm understanding/trust barriers 2) Ponzi-like mechanisms are unsustainable 3) High exposure to market volatility	Wealth effect and use case expansion

Gate Research, Data from: AiYing

Gate Research

The chart provided by AiYing, a one-stop compliance service provider for crypto organizations, compares the advantages and disadvantages of fiat-collateralized stablecoins, crypto-collateralized stablecoins, and algorithmic stablecoins [18]. It helps us better understand the competitive landscape of the stablecoin market. Different types of stablecoins differ significantly in their strengths, weaknesses, and key development factors: Fiat-collateralized stablecoins are stable in price but face transparency and custody risks. Crypto-collateralized stablecoins have the advantage of decentralization but are susceptible to price fluctuations and liquidation risks. Algorithmic stablecoins are highly innovative, but algorithm trust and sustainability issues hinder their development.

These characteristics affect the performance of various stablecoins in the market and shape the competitive landscape of the entire stablecoin sector. As the stablecoin market continues to grow, different stablecoins compete with each other based on their respective strengths and weaknesses. Below, we will dive deeper into several key dimensions, such as stability, decentralization, economic model innovation, compliance, and application scenarios to further explore

their positions and future directions in the competitive landscape.

4.1.1 Stability

Fiat-Collateralized Stablecoins (e.g., USDT, USDC): These stablecoins are backed by the strong credit of fiat currencies and are pegged 1:1 to major fiat currencies like the USD. Their value is maintained through sufficient fiat reserves, ensuring stability. As long as the issuer adheres to the 1:1 collateralization ratio, the value remains closely tied to the fiat currency, making them less affected by fluctuations in the crypto market.

Crypto-Collateralized Stablecoins (e.g., DAI): These stablecoins are minted by pledging crypto assets, such as ETH, using an over-collateralization mechanism. While this method ensures some degree of stability, the price volatility of crypto assets means that large price drops could trigger liquidation mechanisms, thus affecting the stability of the stablecoin. However, compared to algorithmic stablecoins, they still maintain relatively high stability because they are backed by tangible collateral.

Algorithmic Stablecoins (e.g., FRAX): Algorithmic stablecoins attempt to maintain price stability by adjusting supply and demand through algorithms. Past events, such as the collapse of UST, exposed the vulnerability of algorithmic models under extreme market conditions. If market confidence is lost, the algorithmic mechanism may fail, leading to a price collapse.

Therefore, algorithmic stablecoins tend to have lower stability than the other two types.

Stability Ranking: Fiat-Collateralized Stablecoins > Crypto-Collateralized Stablecoins > Algorithmic Stablecoins

4.1.2 Decentralization

Crypto-Collateralized Stablecoins (e.g., DAI): Issued and managed by decentralized autonomous organizations (DAOs), these stablecoins allow users to mint new tokens by collateralizing crypto assets. The process is automated through smart contracts, offering users greater control over their assets and embedding deep into the DeFi ecosystem. The governance model allows for a high level of decentralization.

Algorithmic Stablecoins (e.g., FRAX): While these stablecoins also rely on smart contracts and blockchain technology for decentralized supply and demand adjustment, their reliance on

algorithmic mechanisms and market signals makes them vulnerable to certain centralizing forces. They do have a high level of decentralization, but the algorithm's complexity may reduce their overall stability.

Fiat-Collateralized Stablecoins (e.g., USDT, USDC): These are managed and issued by centralized entities, such as companies or organizations. While they increase transparency through audits, the decision-making processes related to issuance and reserve management remain centralized, making them less decentralized than crypto-collateralized and algorithmic stablecoins.

Decentralization Ranking: Crypto-Collateralized Stablecoins ≥ Algorithmic Stablecoins > Fiat-Collateralized Stablecoins

4.1.3 Economic Model Innovation

Algorithmic Stablecoins (e.g., FRAX, Basis Cash): These stablecoins stand out for their economic model innovations. Some projects introduce dual or multi-token models to dynamically adjust the supply of stablecoins using different token incentives, which helps maintain price stability. These innovations provide valuable lessons for the crypto economy and open up new development directions.

Crypto-Collateralized Stablecoins (e.g., DAI): These stablecoins offer interest-bearing functionality. For example, users can deposit DAI into DeFi lending platforms like Compound and AAVE to earn annual yields ranging from 3%-10%, making them attractive in the context of traditional finance's low-interest environment. While they show some economic model innovation, they are less innovative regarding token mechanisms than algorithmic stablecoins.

Fiat-Collateralized Stablecoins (e.g., USDT, USDC): These stablecoins maintain value by being pegged to fiat currencies, and their economic models are relatively conservative, primarily relying on minting and redemption fees for profit. There is limited innovation in their economic models, and most of their focus is on compliance and expanding use cases.

Economic Model Innovation Ranking: Algorithmic Stablecoins > Crypto-Collateralized Stablecoins > Fiat-Collateralized Stablecoins

4.1.4 Compliance

Fiat-Collateralized Stablecoins (e.g., USDT, USDC): Issuers such as Circle and Tether work closely with regulators and comply with anti-money laundering (AML) and know-your-customer (KYC) regulations to ensure legal and transparent transactions. For example, Circle regularly publishes independent audit reports, disclosing the alignment between USD reserves and circulating USDC. They have strong compliance foundations and are well-positioned to bridge the gap between traditional finance and the crypto market.

Crypto-Collateralized Stablecoins (e.g., DAI): While operating in a decentralized manner, these stablecoins still face increasing regulatory pressure, especially as regulators focus more on the crypto space. However, their operations are largely confined to the DeFi ecosystem, which operates somewhat independently from traditional financial systems, making compliance more challenging. Yet, they can adapt their operational models in certain regulatory environments to meet compliance requirements.

Algorithmic Stablecoins (e.g., FRAX): Due to the complexity of their algorithms and mechanisms, these stablecoins face significant regulatory challenges. Regulators may question the reliability of the algorithms and their risk control mechanisms. As regulatory frameworks remain unclear, algorithmic stablecoin projects must invest more resources to explore compliant paths.

Compliance Ranking: Fiat-Collateralized Stablecoins > Crypto-Collateralized Stablecoins > Algorithmic Stablecoins

4.1.5 Application Scenarios

Fiat-Collateralized Stablecoins: Thanks to their stability and wide market recognition, fiat-collateralized stablecoins are widely used in crypto trading as the primary trading pair asset. They inject liquidity into the market, significantly enhancing trading efficiency. They are also extensively used in cross-border payments, institutional fund custody, and other areas closely related to traditional finance, covering many applications.

Crypto-Collateralized Stablecoins: These stablecoins play a key role within the DeFi ecosystem, deeply embedded in lending, trading, and liquidity mining. For example, in the MakerDAO platform, users mint DAI by collateralizing ETH, which helps unlock the value of crypto assets. DAI is also an important trading medium on decentralized exchanges like Uniswap, improving the trading experience by reducing slippage. However, their application in traditional finance is

relatively limited, with use cases mainly concentrated within the DeFi ecosystem.

Algorithmic Stablecoins: Algorithmic stablecoins are gradually emerging in the cryptocurrency trading and DeFi ecosystems. For example, FRAX provides a relatively stable trading medium for crypto traders, and is also used in lending and liquidity mining within the DeFi space. However, their expansion into new application scenarios is still limited due to concerns over their stability and market trust.

Application Scenarios Ranking: Fiat-Collateralized Stablecoins > Crypto-Collateralized Stablecoins > Algorithmic Stablecoins

4.1.6 Summary Comparison

Comparison Dimension / Category	Fiat-Collateralized Stablecoins (e.g., USDT, USDC)	Crypto-Collateralized Stablecoins (e.g., DAI)	Algorithmic Stablecoins (e.g., FRAX)
Stability	Pegged to fiat currency, supported by reserves, high stability	Collateralized by crypto assets, subject to asset volatility, moderate stability	Price adjusted algorithmically, unstable in extreme markets, low stability
Decentralization	Centralized issuance and management, low decentralization	Decentralized issuance, high community governance	Dependent on algorithms and smart contracts, high dependency
Economic Model Innovation	Relies on transaction fees, limited innovation	Earn interest feature, innovations within DeFi	Multi-token model, highly innovative
Compliance	Actively compliant, reserves disclosed, strong compliance	DeFi faces compliance pressure and challenges	Complex mechanisms, significant compliance challenges
Application Scenarios	Widely used in crypto trading, cross-border payments, and more	Primarily used in DeFi, limited traditional finance applications	Limited use in crypto trading and DeFi, narrower use cases

Gate Research, Data from: Laoli

Gate Research

This summary compares the main types of stablecoins across five key dimensions: stability, decentralization, economic model innovation, compliance, and application scenarios.

4.2 Emerging Stablecoin Projects: Challenges and Opportunities

4.2.1 Case Study on Innovative Mechanisms (BenFen as an Example)

BenFen, a new stablecoin project, stands out with its innovative global collateral mechanism, breaking from traditional models. The platform is built on the Move programming language, and its underlying blockchain supports complex smart contracts. It features stablecoins pegged to major currencies like the US dollar, Japanese yen, and euro, allowing it to cater to cross-border applications. The project ensures the stable exchange value between its stablecoins and BFC (its native token) by collateralizing over 50% of BFC. Additionally, its on-chain automatic staking and market-making mechanisms reduce reliance on centralized pricing and liquidity, improving the overall stability and decentralization of the system. The chart below, released by BenFen on Phoenix Finance, highlights key project details. [19]

Figure 21: Public Blockchains Suitable for Stablecoin Applications

Category	BenFen	Ethereum	Tron	Solana
Application Dev. Language	Move	Solidity	Solidity	Rust
Primary Token	Stablecoin BUSD	Governance Token ETH	Governance Token TRON	Governance Token SOL
Performance	High	Low	Higher	High
Security	High	Average	Average	Average
Gas Fees	Low	High	Low	Low
Chain-Level Native Stablecoins	BUSD, BJPY, etc.	None	None	None
Governance Token Mining Mechanism	SFT Mining Staking	PoS	PoS	PoH

Gate Research, Data from: BenFen

Gate Research

BenFen's growth is rooted in user-friendliness and community-driven development. Early in its launch, the project didn't rely on venture capital but allocated 5% of tokens to the foundation. This move aimed to reward regular users and community members, fostering a fair and inclusive ecosystem. This approach has attracted a wide variety of users and provided long-term sustainable growth for the project.

One of the standout innovations of BenFen is its SFT (Token-NFT Hybrid) mining mechanism. By linking LONG SFT mining machines with LONG tokens at a 1:1 exchange ratio, BenFen combines the liquidity advantages of fungible tokens (FT) with the unique features of NFTs, such as authentication, staking, and earning mining rewards. This reduces both the cost of issuing and trading mining machines while offering a holistic financial solution that strengthens user engagement.

4.2.2 Market Competition Pressure and Breakthrough Pathways

New stablecoin projects face significant challenges in a market dominated by established players. In the fiat-collateralized stablecoin sector, USDT and USDC are dominant due to their first-mover advantage, strong market recognition, and liquidity, making it difficult for newcomers to earn user trust and gain market share. In the crypto-asset-collateralized stablecoin sector, projects like DAI have already solidified their position within the DeFi ecosystem, with a well-established user base and application scenarios. For new entrants, standing out requires a focus on differentiation.

Building user trust is the primary hurdle for emerging projects. In the crypto space, once trust is broken, rebuilding it is costly and time-consuming. Therefore, new projects must focus on rigorous audits, transparency in operations, and regular information disclosures to prove their stability and reliability, helping to build credibility over time.

Compliance is another major challenge. As global regulations on stablecoins tighten, these projects face increasingly complex legal requirements. Emerging projects will need to invest heavily in forming legal teams, engaging with regulators, and ensuring their projects are fully compliant with evolving laws to avoid facing the same fate as other projects delisted due to regulatory issues.

Nonetheless, challenges often bring opportunities. Emerging stablecoin projects can capitalize on technological innovations—such as BenFen’s global collateral and SFT mining mechanism—to target specific market niches and user groups. By collaborating with other emerging DeFi projects, NFT platforms, and ecosystems, these projects can share resources and complement each other’s strengths, expanding their use cases and gradually establishing their brand in the competitive stablecoin market.

5 Stablecoin Regulatory Environment

5.1 Global Regulatory Policy Overview

Figure 22: Global Overview of Cryptocurrency Regulation

Regions	Countries and Regions	Legality	Regulators	Latest Regulation/Policy/ Statement	Adoption/Implementation Date	Key Detailsv
Americas	United States	Legal	SEC, CFTC, Fed, FinCEN	Financial Innovation and Technology for the 21st Century Act (FIT21)	May 22, 2024	Revises existing securities and commodities laws, establishes a regulatory framework for digital assets.
	Canada	Legal	CSA (Canadian Securities Administrators), CRA	Crypto Trading Platform Compliance	Extended to end of 2024	Platforms must comply by the end of 2024 or face penalties; only compliant platforms can continue operations.
	Mexico	Legal	Central Bank, Ministry of Finance, Securities Commission	Statement banning use in the financial system, taxed but not legislated	June 2021, extended in June 2024	Prohibits crypto in the financial system, continues prior policies, imposes tax and requires exchange compliance registration.
	Brazil	Legal	Central Bank of Brazil, House of Representatives, CVM	Virtual Asset Service Provider (VASP) License, PL 4401/2021	November 15, 2024	Allows traditional financial institutions to enter the crypto market; enables crypto for payments in Brazil.
	Argentina	Legal	CNV Investment Framework, Draft Crypto Asset Regulation	CNV Investment Framework, Draft Crypto Asset Regulation	November 17, 2024; October 22, 2024	Includes Bitcoin and Ethereum in investment funds, enhances user protections, and sets new compliance requirements.
Europe	EU - Germany	Legal	European Commission, Basel Committee on Banking Supervision	Markets in Crypto-Assets Regulation (MiCA), Disclosure Framework and Prudential Standards for Crypto-Asset Risks	Effective in phases on June 30, 2024, and December 30, 2024; Planned implementation on January 1, 2026	Establishes a comprehensive regulatory framework covering crypto-asset issuance, trading, custody, and wallet services. Aims to ensure transparency, security, and stability in the crypto market.
	EU - France	Legal				
	EU - Italy	Legal				
	United Kingdom	Legal	Financial Conduct Authority (FCA), UK Treasury	Digital Assets (Personal Property, etc.) Bill, Crypto Industry Regulation Plan	Submitted on September 11, 2024; Finalized by late November 2024	Officially recognizes cryptocurrencies, NFTs, and RWAs as personal property.
	Russia	Legal	State Duma of Russia	Experimental Legal Regime (ЭПР), Legalization of Cryptocurrency Mining	Effective on September 1, 2024; Implemented in November 2024	Allows the use of digital currencies in cross-border transactions and trading on exchanges. Legalizes cryptocurrency mining.
Asia	China	Restricted	People's Bank of China and 10 Ministries	Notice on Further Preventing and Addressing Risks of Virtual Currency Trading Speculation, Interpretation of Legal Issues in Criminal Cases Involving Money Laundering	Issued on September 15, 2021; Implemented on August 20, 2024	Strengthens regulation of crypto mining and trading, banning financial institutions from providing related services.
	Japan	Legal	Japan Financial Services Agency (FSA)	Amendments to the Payment Services Act; Enhancing Investor Protection for Domestic Crypto Investors	April 2017; November 8, 2024	Strengthening protection measures for domestic cryptocurrency investors, enhancing market transparency and security.
	South Korea	Legal	Ministry of Finance &Financial Services Commission (FSC)	New Regulations on Cross-border Cryptocurrency Transactions; Virtual Asset User Protection Law	Second half of 2025; July 18, 2024	1. Businesses involved in cross-border cryptocurrency transactions must register with authorities and report monthly transactions. 2. Stricter requirements for exchanges, covering reserve funds, cold wallets, and custodial banks.
	India	Legal	Indian Supreme Court & Income Tax Department (ITD)	Amendments to Cryptocurrency Act; Section 2(47A) of the Income Tax Act	July 2024	1. Paving the way for Central Bank Digital Currency (CBDC) oversight and measures focusing on taxation and anti-money laundering (AML). 2. Including Virtual Digital Assets (VDAs) under the Income Tax Act, encompassing all types of crypto assets.
	Indonesia	Legal	Commodity Futures Regulator & Financial Services Authority (OJK)	Extension of Crypto Asset Trader (PFAK) Licenses; New OJK Regulations	October 22, 2024; Effective January 2025	1. Allowing corporate entities and businesses to trade crypto assets, ensuring operational and compliance oversight. 2. Introducing technological innovations in finance, with regulations effective for cryptocurrencies starting January 2025.
	Saudi Arabia	Legal	Saudi Central Bank	No Regulatory Framework Established; Focus on Crypto Investments and CBDC Bridge Projects	Early June 2024	A comprehensive regulatory framework for Virtual Asset Service Providers (VASPs) is not yet in place. Focus is on CBDC initiatives. Crypto investments are gaining traction, including sovereign-level Bitcoin purchases. Empowering SPK to regulate crypto exchanges with enforcement capabilities.
	Turkey	Legal	Capital Markets Board (SPK) &Banking Regulation and Supervision Agency (BDDK)	Amendments to Capital Markets Law	Passed on June 27, 2024	Introducing regulations related to cryptocurrencies to enhance market transparency and investor protection.
Africa and Oceania	South Africa	Legal	Financial Sector Conduct Authority (FSCA) & Financial Intelligence Centre (FIC)	Crypto Asset Service Provider (CASP) Licensing; Amendment to Financial Intelligence Centre Act	February 2024	1. Issuance of licenses to CASPs. 2. Tightened rules for transferring crypto assets, requiring institutions to report transactions exceeding $2,650.
	Australia	Legal	Australian Securities and Investments Commission (ASIC)	New Corporate Law Regulations	September 2024	Crypto companies are required to obtain financial services licenses under the Corporate Law, categorizing crypto assets as financial products. ASIC plans to update guidelines by November 2024, clarifying classifications and handling of crypto tokens.
Major Countries Worldwide	G20 Member States		International Monetary Fund (IMF) & Financial Stability Board (FSB)	G20 Cryptocurrency Regulatory Roadmap; G20 Crypto Asset Policy Implementation Progress Report	October 13, 2024; October 22, 2024	Enhancing global financial stability and ensuring effective management of cryptocurrencies within the international economic framework. Addressing existing data gaps in the crypto market and fostering the flexible and effective implementation of a comprehensive crypto asset policy framework.

Gate Research, Data from: Gate.io

Gate Research

The chart above was created as part of research on the regulatory policies for cryptocurrencies, including stablecoins, in major countries and regions. The research focused particularly on the G20 nations, which account for a significant portion of the global population, trade volume, and GDP. Their regulatory policies are of key importance on the global stage. The full report was published on the Gate Research website [20]. Below is a breakdown of the specific stablecoin regulatory policies in various major regions.

5.1.1 United States

In the United States, stablecoin regulation involves coordination among multiple agencies. The Securities and Exchange Commission (SEC) tends to classify some stablecoins as “securities” under securities laws, especially those linked to specific investment returns and relying on the efforts of the issuer to operate. The SEC requires these stablecoin projects to comply with strict securities registration, information disclosure, and anti-fraud regulations to protect investor interests. For example, in reviewing certain stablecoin projects with yield-promising features, the SEC requires issuers to disclose the use of funds and operational models in detail, ensuring investors are fully informed of potential risks. The TrueUSD (TUSD) project, for instance, complies with SEC requirements by regularly publishing audit reports and detailing its USD reserves, also providing independent audit results on its website to prove the stablecoin’s issuance is fully backed by USD reserves, thus enhancing investor trust.

The Commodity Futures Trading Commission (CFTC) treats major cryptocurrencies like Bitcoin and Ethereum, as well as some stablecoins, as “commodities” and primarily regulates their derivative trading, aiming to prevent market manipulation and fraud while maintaining market fairness and order. For stablecoin futures contracts, the CFTC closely monitors the compliance of trading platforms, including margin systems and risk alert mechanisms. For example, with BitMEX exchange, the CFTC strictly oversees its futures trading involving stablecoins, ensuring the platform improves margin management and risk alert systems to safeguard investors when trading stablecoin futures.

The Financial Crimes Enforcement Network (FinCEN) requires stablecoin issuers, trading platforms, and other related entities to register as ”money services businesses” (MSBs) under Anti-Money Laundering (AML) and Know Your Customer (KYC) regulations. They must conduct due diligence, transaction monitoring, and suspicious activity reporting to prevent illegal fund flows. In practice, stablecoin-related companies must verify customer identities, track the flow of funds, and report any suspicious transactions to FinCEN. Circle, as one of the issuers of USDC, strictly adheres to FinCEN’s regulations, implementing KYC and AML processes during user registration and transactions, and using multiple channels to verify user identity to ensure compliance with legal standards.

In recent years, the U.S. Congress has been actively advancing cryptocurrency legislation. The “2022 Stablecoin Transparency Act” aims to strengthen reserve disclosures, ensuring that issuers hold sufficient and compliant assets to support the stability of the stablecoin’s value. The “Responsible Financial Innovation Act” seeks to clarify the roles of various regulatory agencies, creating a comprehensive regulatory framework for stablecoins and other crypto assets to pro-

mote healthy market development.

5.1.2 Europe

The European Union (EU) has implemented the groundbreaking "Markets in Crypto-Assets Regulation" (MiCA), which officially came into effect on December 30, 2024, introducing a classification-based regulatory approach for stablecoins (the implementation across EU member states may vary). Based on their pegged asset types and risk profiles, asset-referenced stablecoins are required to maintain sufficient, highly liquid reserves, with these reserves subject to regular audits and public disclosure to ensure that investors can redeem at face value at any time, enhancing market confidence. For example, the Euro-pegged stablecoin Stasis EURS allocates most of its reserves to low-risk assets such as Euro cash and short-term government bonds, and conducts regular audits by reputable institutions, disclosing reserve status to ensure currency stability and protect investors.

Electronic money-based stablecoins must adhere to stricter regulatory standards, similar to traditional banking regulations, including maintaining adequate capital reserves and robust risk management systems to ensure payment system stability. Issuers must undergo regular prudential regulatory assessments to ensure they can handle liquidity crises and credit risks. For example, Paxos Europe's stablecoin issuance adheres to these standards, establishing a comprehensive risk management system to monitor and evaluate market and credit risks in real-time, and regularly reporting to regulatory authorities.

MiCA also strongly emphasizes consumer protection, requiring stablecoin issuers to provide clear, easily understandable product information, including risk disclosures and fee structures, ensuring that consumers fully understand the risks before using stablecoin products and preventing fraud and misrepresentation. Additionally, it calls for establishing effective complaint handling mechanisms to protect consumer rights.

5.1.3 Asia (Singapore, Japan, Hong Kong, etc.)

The Monetary Authority of Singapore (MAS) adopts an open yet prudent approach to stablecoin regulation. On one hand, it allows stablecoins pegged to the Singapore dollar and G10 currencies to expand cross-border application scenarios. On the other hand, it implements differentiated regulation based on the issuance scale and nature of the issuer. For non-bank issuers, stablecoins with a circulation exceeding 5 million Singapore dollars must apply for a Major Payment Institution (MPI) license, meeting requirements for capital adequacy, reserve

compliance, and business restrictions. While bank-issued stablecoins do not require additional licenses, they must follow rules such as 100% asset-backed collateral. For example, Xfers, the issuer of TrueUSD (TUSD) in Singapore, complies with MAS regulations by applying for an MPI license, ensuring reserve compliance, and conducting regular audits, which enhances market confidence in its stablecoin.

Regarding reserve management, MAS stipulates that reserve assets must be limited to low-risk, highly liquid assets such as cash and high-rated bonds, and must be custodial at either local or compliant foreign institutions, ensuring fund security and traceability. Issuers must also regularly release audit reports to improve transparency.

Japan’ s Financial Services Agency (FSA) includes stablecoins under the regulation of crypto assets. The amended ”Funds Settlement Law” stipulates that only licensed banks, registered transfer agents, and trust companies are allowed to issue stablecoins, and they must be pegged to the Japanese yen or other fiat currencies to ensure holders can redeem them at face value. Large financial groups such as Mitsubishi UFJ Financial Group (MUFG) are actively exploring stablecoin applications, collaborating with blockchain companies on pilot projects aimed at improving cross-border payment efficiency and expanding financial services. The J-Coin, a stablecoin pegged to the yen and developed by MUFG in collaboration with SBI Holdings, has successfully reduced fees and settlement times in cross-border payment trials, improving payment efficiency.

The Hong Kong Monetary Authority (HKMA) has launched a stablecoin issuer ”sandbox” mechanism, providing a testing environment for compliant projects. Participants must demonstrate a viable business model and application scenarios, proving their ability to effectively manage risks, including reserve management and anti-money laundering measures. Recently, the HKMA released a list of sandbox participants, which includes companies like JD Coinchain Technology and Yuan Coin Innovation Technology, aiming to promote the steady and compliant development of the stablecoin ecosystem. JD Coinchain Technology, for instance, uses the sandbox to test its stablecoin project, optimize reserve management, and improve anti-money laundering monitoring systems in preparation for launching its stablecoin product.

5.2 The Impact of Regulatory Policies on Stablecoin Development

Increasingly stringent regulatory policies have had a significant impact on the stablecoin industry. On the one hand, compliance costs have risen considerably, with stablecoin projects

needing to allocate more resources to build robust compliance frameworks that span legal, auditing, and risk management areas. This includes hiring professional legal advisors to navigate complex regulations, contracting well-established auditing firms to verify reserve status, and implementing advanced anti-money laundering and anti-fraud systems. All of these compliance steps come at a high cost, putting a financial strain on smaller projects and accelerating industry consolidation. As a result, some non-compliant or financially weaker projects are being forced out of the market.

The market entry threshold has risen sharply, and new entrants must overcome significant regulatory obstacles, including obtaining licenses, meeting capital requirements, and adhering to strict operational standards. This has effectively curbed market chaos, reduced the influx of low-quality projects, and directed funds toward high-quality projects with compliance capabilities and innovation, promoting healthy competition within the industry.

On the positive side, regulation has pushed stablecoin projects to optimize their operations, improve transparency, and enhance risk management. Project teams are proactively disclosing reserve compositions, audit reports, and strengthening communication with regulators. They are also adjusting business strategies in a timely manner to meet regulatory requirements, offering users safer and more reliable stablecoin products. This helps to build a stronger foundation of trust in the market and lays a solid foundation for the widespread use of stablecoins in cross-border payments, digital finance, and other fields, potentially opening a new chapter of compliant and stable development for the stablecoin industry.

6 Stablecoin Sector Development Direction Prediction

Figure 23: Model Differences Among Different Types of Stablecoins

Type	Fiat-Collateralized Stablecoins	Crypto-Asset Collateralized Stablecoins	Other Asset-Collateralized Stablecoins	Uncollateralized Stablecoins
Centralization Level	High	Low	High	Low
Credit Basis/ Collateral	Fiat reserves + non-cash government bonds and other assets (e.g., USD, EUR)	1) Crypto asset collateral (e.g., ETH, stETH, BTC) 2) Crypto synthetic assets (e.g., spot + derivative positions)	Gold, silver, etc.	1) Partial collateral + algorithmic stabilization mechanism 2) Pure algorithmic stabilization mechanism
Collateralization Ratio	100% collateralization; equivalent collateral	100%-200% collateralization; over-collateralized	100%-150% collateralization; equivalent/over-collateralized	None
Representative Stablecoins	USDT、USDC、FDUSD	DAI、USDe、CrvUSD	PAXG	AMPL、FRAX
Core Risks	Collateral misappropriation and liquidity risks	Asset decoupling and liquidation risks	Collateral misappropriation and liquidity risks	Decoupling and downward death spiral

Gate Research, Data from: AiYing

Gate Research

In the multi-faceted development pattern of the stablecoin market, we can clearly observe the model differences between various types of stablecoins from the chart. The content is sourced from AiYing Research Report, a one-stop compliance service provider for crypto institutions. [21] Fiat-collateralized stablecoins, dominated by centralized institutions and backed by fiat reserves, still occupy a significant market share despite risks of collateral runs and liquidity issues. Crypto-asset-collateralized stablecoins are characterized by decentralization and crypto asset backing, yet they are troubled by asset decoupling and liquidation risks. Other collateral-backed stablecoins rely on assets like gold, also carrying collateral-related risks. Unbacked stablecoins completely depend on algorithmic mechanisms and face severe challenges such as decoupling. However, the stablecoin sector will not stop at its current state. Technological innovation, changes in market demand, and adjustments in regulatory policies will profoundly influence its direction. Next, we will focus on these mainstream categories and delve into their potential future development directions, exploring opportunities and challenges in the stablecoin sector to

grasp the development trajectory better. Different categories of stablecoins will likely follow distinct development paths.

6.1 Development Direction Prediction of Mainstream Categories of Stablecoins

Over the past few years, the stablecoin market has undergone considerable fluctuations, from the bull market in 2021 to the bear market in 2023, with the total cryptocurrency market cap experiencing significant swings. Nevertheless, stablecoins have demonstrated remarkable resilience. Data reveals that global stablecoin transfer volumes have surged 17-fold in the past four years, reaching $4 trillion in Q2 2024. On July 17, 2024, stablecoin trading volume hit $87 billion, with Tether (USDT) leading the pack, making up 83.3% of the total market. Amid high government bond yields (>5%), Tether reported a net profit of $1.48 billion in Q1 2023, and its quarterly cash and cash-equivalent investment returns neared $1 billion in Q3 2023, underscoring the profitability of the stablecoin sector. Given these trends, we anticipate the following key development directions for the stablecoin space, focusing on market competition, integration with traditional finance, potential growth areas, regulatory and compliance dynamics, and technological innovation.

6.1.1 Oligopolistic Dominance to Continue in the Short Term, with Gradual Market Diversification

Currently, the stablecoin market is dominated by a few players, with Tether and Circle accounting for around 90% of the market share, with USDT and USDC dominating at 70% and 20%, respectively. However, as the market matures, this dominance is poised for change. New projects such as FDUSD and USDe are emerging, bringing innovative features and mechanisms to challenge the dominance of the incumbents. These newcomers are breathing new life into the industry and opening up new possibilities. Startups are also leveraging government bond interest to challenge Tether and Circle’ s market share. Although their market share is small, technological progress and a maturing market may enable these newcomers to break the existing oligopoly. Over the next 3-5 years, while oligopolistic dominance may continue, market competition will intensify, and a more diversified landscape will emerge. Stablecoin projects excelling in compliance, innovation, and user experience will have the best chance of gaining market share. For example, stablecoin projects that can solve regulatory compliance issues and launch innovative financial products or services will attract greater attention from investors and users.

6.1.2 Deeper Integration with Traditional Financial Institutions

In recent years, stablecoins have been increasingly collaborating with traditional financial institutions, showing an accelerated integration trend. In the payments sector, U.S. online payment company PayPal has supported consumers in trading cryptocurrencies via PayPal and Venmo accounts and has launched the PayPal USD stablecoin, pegged to the U.S. dollar. In September 2024, PayPal also announced that it would allow merchants to buy, hold, and sell cryptocurrencies through their business accounts. Stripe acquired the stablecoin platform Bridge for $1.1 billion and resumed its service for U.S. enterprises to conduct cryptocurrency payments using USDC on Ethereum, Solana, and Polygon. In the financial institution sector, Japan's three major banks jointly launched a cross-border payment system called "Project Pax," using stablecoins to replace intermediary banks in traditional cross-border payments, improving efficiency and lowering costs. In asset allocation, more and more institutional investors are optimistic about the investment prospects of cryptocurrencies and related products, expecting to increase their investment allocation in 2024-2025. The author firmly believes that the integration of stablecoins with traditional financial institutions will deepen further in the future. Traditional financial institutions possess a large customer base, a robust risk control system, and abundant financial resources. By collaborating with stablecoins, these institutions can help realize broader application and more stable development. For example, stablecoins could be more widely used in traditional financial sectors like cross-border trade settlement and supply chain finance, serving as an important bridge between traditional finance and cryptocurrencies. Furthermore, traditional financial institutions may also participate in the issuance and management of stablecoins, further enhancing the compliance and credibility of stablecoins. As financial technology continues to develop, integrating stablecoins with traditional financial institutions will bring more innovation and transformation to financial markets, providing users with more convenient and efficient financial services.

6.1.3 Decentralized Stablecoins Have Huge Development Potential but Face Numerous Challenges

To address the issues of centralized stablecoins, decentralized stablecoins have emerged, such as Curve's crvusd, Aave's gho, and Dopex's dpx usd sd. Decentralized stablecoins can be divided into over-collateralized stablecoins and algorithmic stablecoins. Over-collateralized stablecoins usually use other cryptocurrencies as collateral, such as MakerDAO's DAI, which uses Ethereum as collateral. The latest trend is to expand collateral from traditional centralized stablecoins and major traditional digital currencies to a broader range of digital currencies or

multi-layered systems to increase liquidity and provide more application scenarios. Algorithmic stablecoins use market supply and demand relationships, and algorithms and smart contracts automatically manage supply to maintain price stability, such as Ampleforth and Frax.

Decentralized stablecoins have higher transparency and autonomy, and have the potential to break free from dependency on centralized institutions. They have enormous potential for future development. However, they also face numerous challenges. For over-collateralized stablecoins, excessive collateralization may lead to lower asset utilization rates. Particularly, when collateral asset prices fluctuate significantly, forced liquidations could occur, affecting the stability of the stablecoin. Algorithmic stablecoins face the risk of algorithm failures in extreme market conditions, as exemplified by the collapse of UST.

However, the author believes that these issues will likely be solved with continuous technological progress and a maturing market. In the future, decentralized stablecoins may play a more significant role in the DeFi ecosystem, becoming an important force driving the development of the cryptocurrency industry. As blockchain technology continues to evolve, the technological security and stability of decentralized stablecoins will be enhanced, and their application scenarios will continue to expand, allowing them to occupy a more important position in the market.

6.1.4 Regulatory Environment Will Become Tighter, Compliance Will Be Key to Stablecoin Development

Although many countries and regions have begun formulating regulatory frameworks for stablecoins, the global regulatory environment remains fragmented, with differing policies across countries and regions that could impact the cross-border flow and use of stablecoins. Data shows a previous UN report indicated that stablecoins like USDT have become common payment methods for money laundering and fraud in Southeast Asia. A report jointly published by OKLink Research Institute and the Third Research Institute of the Ministry of Public Security also pointed out that over 50% of virtual asset-related risk events are related to stablecoins. The issuance and operation of stablecoins require high transparency and trust. Any issues related to insufficient reserves or opaque operations can undermine market confidence in stablecoins. The author expects that regulations on stablecoins will become stricter in the future, and compliance will be the key factor determining the sustainable development of stablecoin projects. Those that actively collaborate with regulators, comply with anti-money laundering (AML) and Know Your Customer (KYC) regulations, and have sound risk control systems are more likely to gain recognition and support from regulators, thus establishing a foothold in the market. In contrast, non-compliant projects will face the risk of being eliminated. Therefore, stablecoin is-

suers must closely monitor regulatory developments and prepare for compliance, adapting to the constantly changing regulatory environment. In the future, compliant stablecoin projects will attract more trust from investors, drawing more funds and resources, which will support sustainable growth.

6.1.5 Technological Innovation Will Become the Core Driving Force of Stablecoin Development

To create the next "super stablecoin" like USDC or USDT, at least four key conditions must be met: First, the stablecoin must be USD-based because the dollar is widely recognized globally, and its supporting assets have broad applicability; Second, it must obtain global regulatory recognition and relevant licenses, as a super stablecoin must have a global vision from the outset and be recognized by U.S. regulators with global licenses; Third, it must feature innovative financial attributes, such as profit-sharing mechanisms, to build community support and achieve sustainable growth; Fourth, it must seamlessly integrate into the DeFi ecosystem, becoming an indispensable part of it. The author believes innovation will be the core driving force behind stablecoin development. Whether in terms of technological innovation, mechanism innovation, or application innovation, stablecoin projects that continuously introduce new ideas will have a better chance of meeting market demand, attracting more users and investors. For example, by introducing new collateral mechanisms, algorithmic models, or application scenarios, stablecoins can enhance their competitiveness and stand out in the intense market competition. As the market evolves and user demand changes, only those stablecoin projects that continuously innovate will be able to adapt to market changes, maintain a competitive edge, and achieve long-term stability.

In summary, the stablecoin sector will face numerous opportunities and challenges in the future. Only those stablecoin projects that can adapt to market changes, actively respond to challenges, innovate continuously, and develop in compliance will succeed in this promising sector, driving the healthy development of the entire stablecoin market.

6.2 Development Direction of Synthetic Stablecoins, Represented by USDe

Synthetic stablecoins, represented by USDe, show significant potential in the future stablecoin market due to their unique mechanisms and innovative characteristics. However, they also face several challenges.

From the opportunity perspective, first, as the cryptocurrency market continues to develop and the demand for diversified assets grows, the innovative model of synthetic stablecoins is expected to attract more attention. USDe, built on the Ethereum blockchain, provides a solution for crypto-native currency that does not rely on traditional banking systems. This decentralized feature aligns with some investors' desires to break free from the constraints of traditional finance. Second, synthetic stablecoins have great potential for application in the DeFi ecosystem. USDe has already partnered with centralized exchanges and DeFi platforms such as Lido Finance, Curve, MakerDAO, and Injective Protocol, creating an ecosystem with yield opportunities and a strong user experience. As DeFi applications continue to expand, the scope of use for synthetic stablecoins will likely grow, with increasing participation in activities like lending and liquidity mining. Additionally, USDe's introduction of the "internet bond" concept, combining Ethereum staking yields with perpetual and futures market funding and basis, provides users with a globally accessible, dollar-denominated savings tool. This innovative financial product could attract more investors, driving the growth of synthetic stablecoins in savings and investment sectors.

However, synthetic stablecoins also face several challenges. Firstly, market capacity risks remain. The issuance of USDe is closely tied to the size of short positions in the collateral pool, and currently, the size of short positions on certain trading platforms has taken up a significant portion. This could lead to issues like increased trading friction, difficulty managing large-scale redemptions, and declining yields. Although mechanisms such as minting/burning limits, dynamic fee rates, and the introduction of multi-asset and multi-exchange systems could alleviate these issues, overcoming market capacity constraints to achieve larger-scale development remains a problem that needs to be addressed. Secondly, regulatory uncertainty poses a potential threat to the development of synthetic stablecoins. Due to their innovative mechanisms and crypto-native nature, regulatory bodies may need time to establish appropriate policies, and during this period, synthetic stablecoin projects may face compliance challenges. If they fail to meet regulatory requirements promptly, their growth potential could be limited. Thirdly, building user trust will take time and effort. The operating mechanisms of synthetic stablecoins are relatively complex, and ordinary users may find it difficult to understand. Clearly explaining their principles and security to users and enhancing their trust is a critical issue that needs to be addressed in their development.

Overall, synthetic stablecoins like USDe have substantial growth potential in the future stablecoin market. However, to achieve long-term stability, these projects must effectively address the aforementioned challenges, balancing innovation with risk control and regulatory compliance.

6.3 Development Direction of Key Segments in the Stablecoin Market

In the 20 sub-segments of the stablecoin market mentioned earlier, several stand out for their immense growth potential and are expected to play key roles in the future stablecoin ecosystem.

6.3.1 Settlement Channels

Settlement rails are a typical area dominated by network effects, with core competitiveness deriving from deep liquidity, low fee structures, fast settlement speeds, stable system availability, and native compliance and privacy protection. In the future, this field is likely to see a winner-takes-all scenario. As the global stablecoin market is expected to exceed $500 billion by 2025, transaction volumes and frequencies will grow significantly, raising the demands on settlement efficiency and cost control. General-purpose blockchains struggle to meet the scalability needs of mainstream payment networks, and Layer 2 or specialized solutions are likely to have greater potential for development. Efficient settlement rails will greatly reduce transaction costs and improve speed, which is crucial for cross-border B2B payments and remittance scenarios. These areas currently face high fees and long processing times within the traditional financial system, but stablecoin-based settlement rails will offer an efficient solution. Therefore, high-quality settlement rail projects focused on stablecoins and payments will have substantial value in the future market.

6.3.2 Stablecoin Issuers

Currently, issuers like Circle and Tether have achieved significant success due to their strong network effects and the high-interest-rate environment. However, future development will require more efficient and reliable infrastructure, improved compliance standards, optimized minting/redeeming processes, and stronger integration with central banks and core banking systems to enhance overall liquidity. Non-bank, neutral financial institutions, and fintech companies may have an advantage here, as transactions between closed systems require a trusted third party. The growing market size, projected to expand significantly by 2025, will provide issuers with a broader market space. However, as competition intensifies, issuers will need to develop more comprehensive businesses—not just focused on issuance but also on compliance operations, user services, and more to adapt to market changes. For example, emerging issuers may differentiate themselves by partnering with traditional financial institutions to introduce high-quality assets as reserves, thereby enhancing the stability and credibility of their stablecoins.

6.3.3 Value Transfer / Currency Services (Stablecoin ”PSPs”)

Platforms specializing in stablecoin ”orchestration” (such as Bridge and Conduit) derive their competitive advantage from direct banking relationships, global coverage, ample liquidity, and high levels of compliance. Although few platforms have proprietary infrastructure, the successful ones will likely dominate regional markets and supplement traditional PSPs, becoming very large enterprises. As stablecoin applications expand beyond the cryptocurrency industry, especially in the areas of global cross-border B2B payments and remittance solutions, the demand for value transfer/currency services platforms will continue to grow. These platforms can leverage their strengths to integrate stablecoin payment functions, providing businesses and users with efficient, low-cost cross-border payment services, addressing the pain points of traditional cross-border payments. For example, in cross-border e-commerce or multinational corporate fund settlements, these platforms can achieve fast, low-cost fund transfers, offering vast market potential.

6.3.4 Stablecoin-Driven Fintech and Applications

Creating ”digital banks” or ”fintech” products based on stablecoins is easier than ever before, making this sector highly competitive. In developed markets, traditional fintech giants can easily integrate stablecoin functionalities, while startups need to find unique value propositions. In emerging markets, there are still opportunities for unique products. As the stablecoin market develops, its application scenarios in fintech and beyond will expand. For example, in the field of financial inclusion, stablecoins can provide accessible payment, savings, and lending services to those without access to traditional financial systems. In supply chain finance, stablecoins can optimize fund flow management and improve the efficiency and transparency of the supply chain. By precisely targeting market needs and offering differentiated products and services, stablecoin-driven fintech and application projects will find their growth space in the future market.

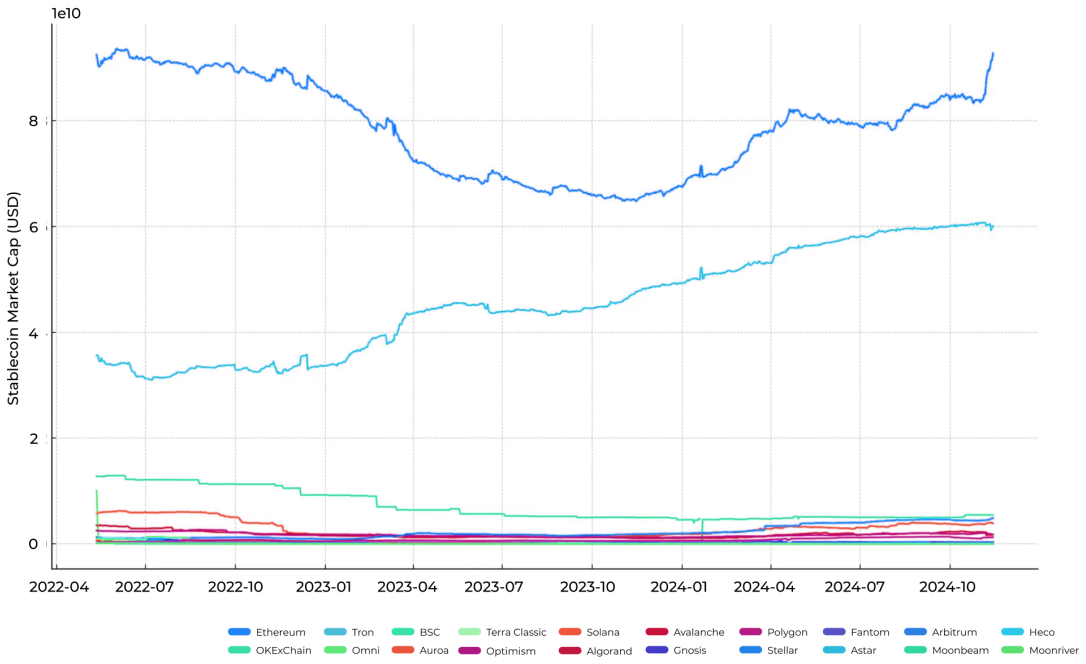
The settlement rails, stablecoin issuers, value transfer/currency services, and stablecoin-driven fintech and applications are some of the segments in the stablecoin market with immense development potential. The growth of these segments will be influenced by factors such as market expansion, technological innovation, and regulatory policies. Participants in these areas need to closely monitor market trends, actively address challenges, and seize development opportunities to play a key role in the future of the stablecoin ecosystem.

7 Stablecoin Sector Future Technology and Market Outlook

7.1 Technological Innovation Trends

7.1.1 Stablecoin Blockchain Technology Upgrades

Figure 24: Trend of Stablecoin Market Cap on the Top 20 Blockchain



Gate Research, Data from: X

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The above chart shows the trend of stablecoin market capitalization across the top 20 blockchains. [22] The development of stablecoins is closely linked to the evolution of blockchain technology. From the trend chart of stablecoin market capitalization, it is evident that technological upgrades have a significant impact on a blockchain's competitiveness in the stablecoin market. Blockchains that actively innovate and upgrade their technology often have a competitive advantage, driving the stablecoin market to develop more efficiently, securely, and scalable.

Ethereum has long led in stablecoin market capitalization. As the hosting platform for major stablecoins such as USDT, USDC, and DAI, its large-scale market capitalization support demand primarily comes from DeFi applications and institutional users seeking compliant stablecoins.

However, Ethereum's stablecoin market cap is not static. From April 2022 to mid-2023, Ethereum's stablecoin market cap saw a decline. This was mainly due to the Ethereum 1.0 Proof of Work (PoW) consensus mechanism, which gradually exposed issues such as network congestion and high transaction fees as the stablecoin market developed. For example, in the second half of 2022, during peak interactions in some popular DeFi projects, Ethereum network fees surged, drastically reducing stablecoin transaction efficiency and negatively affecting the user experience. This led some users and projects to lose confidence in Ethereum, impacting Ethereum's stablecoin market cap. Meanwhile, during the same period, Tron gained a competitive advantage with its low fees, and its stablecoin market cap rapidly and steadily increased, capturing a portion of the market.

To address these issues, Ethereum began its technological upgrade journey. The Ethereum 2.0 upgrade process gradually began in late 2020, with one of its core features was introducing the Proof of Stake (PoS) consensus mechanism to replace PoW. Starting in 2021, the Ethereum 2.0 Beacon Chain went live, laying the foundation for subsequent upgrades. This shift significantly improved the network's energy efficiency and scalability. By the second half of 2023, some of Ethereum 2.0's upgrades began to show results, such as reduced energy consumption for stablecoin transactions and faster transaction speeds. Compared to Ethereum 1.0, the transactions per second (TPS) were notably increased, greatly optimizing the user experience. This allowed Ethereum to regain an advantage, with stablecoin market cap on Ethereum gradually increasing starting in late 2023.

Ethereum 2.0's sharding technology is also an important innovation. Starting in 2024, sharding technology began to be implemented in the Ethereum network. It divides the blockchain network into multiple parallel-processing shards, each capable of processing transactions independently, which effectively alleviates network congestion. For instance, during a large-scale DeFi lending activity in May 2024, sharding technology ensured that stablecoin transactions were quickly confirmed even under high concurrency, allowing related transactions to be completed promptly and accurately, meeting the demand for efficient financial services. This provides solid support for stablecoin use in large-scale applications like cross-border payments and DeFi lending, further driving the growth of Ethereum's stablecoin market cap.

The enhancement of smart contract functionality is also crucial. With Ethereum's technological upgrades, the new generation of blockchain platforms allows for developing more complex and secure smart contracts. Starting in 2023, decentralized stablecoin projects based on Ethereum began leveraging upgraded smart contracts to achieve more precise collateral management, automated liquidation mechanisms, and dynamic interest rate adjustments. For example, a decentralized stablecoin project in early 2024 used upgraded smart contracts to quickly adjust

collateral ratios and interest rates during volatile market conditions, enhancing the stability and risk resistance of the stablecoin and reducing the risk of human intervention, ensuring the system runs smoothly under various market conditions.

While Ethereum undergoes technological upgrades, Tron has also actively explored technological innovation. Since 2021, Tron has continuously optimized blockchain performance through improvements to its consensus algorithms and other technologies, significantly increasing transaction speed and lowering transaction fees. In 2022, the average transaction confirmation time on the Tron network was reduced to a few seconds, and transaction fees were reduced to a fraction of their previous cost. These technical improvements attracted several stablecoin projects to the Tron network, with the authorization amount for USDT on Tron increasing significantly starting in early 2022. These technological improvements met the needs of high-frequency trading, enhanced trading activity, and user experience, and drove the steady increase of Tron’s stablecoin market cap. From the trend chart of stablecoin market caps, it is clear that since 2022, Tron’ s stablecoin market cap has consistently ranked second, with a trend toward surpassing Ethereum.

Other blockchains are also striving for progress. Blockchains like BSC, Terra Classic, and Solana have smaller stablecoin market caps, but they play a key role in the diverse stablecoin ecosystem. Smaller public chains like Algorand and Stellar are positioned as niche platforms for stablecoins, with technical optimizations aimed at specific use cases such as cross-border payments and small transactions.

Looking ahead, blockchain technology for stablecoins will see breakthroughs in several areas. In performance enhancement, further optimization of consensus mechanisms will significantly increase transaction processing speeds while maintaining decentralization; in security, more advanced cryptography will strengthen protection to safeguard user assets; in cross-chain interoperability, more efficient cross-chain interactions will break down barriers between blockchains, allowing stablecoins to circulate in a broader ecosystem. Additionally, cutting-edge technologies such as quantum resistance and privacy protection will gradually be integrated into the stablecoin field. Quantum resistance technology will ensure that stablecoins remain secure despite quantum computing threats, ensuring the reliability of encryption algorithms and protecting user assets. Privacy protection technology will provide users with more anonymous and secure transaction environments under compliance, meeting the privacy needs of different users and driving the expansion of stablecoin applications in more sensitive areas.

7.1.2 Stablecoin Cross-Chain Technology Integration

From the previous section, different blockchains have unique characteristics in the stablecoin sector: Ethereum consolidates its position through technological upgrades, while Tron pushes market capitalization growth with its low fees and high speed. However, as the stablecoin market evolves, the relative independence of blockchains has become a bottleneck restricting the expansion of stablecoin scenarios and improving liquidity. Currently, stablecoin projects are spread across blockchains, and the differences in technical standards make cross-chain circulation of stablecoins difficult. This is especially evident in the DeFi sector, where users face challenges when interacting with DeFi applications on different blockchains. Due to the difficulty of cross-chain deposit and withdrawal of stablecoins, users must go through complicated exchanges, which increases costs and risks.

Blockchain cross-chain technology development offers a potential solution to this problem. Cross-chain technology can interconnect between blockchains, enabling stablecoins to move freely, breaking down barriers, and expanding their circulation and applications. Therefore, the integration of stablecoin cross-chain technology is an inevitable trend that will enhance liquidity and expand the scope of stablecoin applications, promoting the collaborative development of blockchain ecosystems.

As a bridge connecting different blockchain ecosystems, cross-chain technology is gradually overcoming the barriers to stablecoin circulation across diversified blockchain networks, enabling seamless cross-chain transfer of assets and opening up broader applications for stablecoins. Currently, mainstream cross-chain technology solutions, such as Polkadot's relay chain technology, Cosmos' s cross-chain hub model, and cross-chain protocols based on hash locking and atomic swaps, have begun to show promise in the stablecoin field.

For example, Polkadot' s unique relay chain architecture allows multiple parallel chains to interact through the relay chain, enabling stablecoins on different parallel chains to communicate efficiently using this architecture. Users can easily exchange DAI stablecoins from Ethereum to other stablecoins on Polkadot' s parallel chains via decentralized exchanges based on the Polkadot ecosystem, without complex intermediate steps, greatly improving transaction efficiency and reducing exchange costs.

Cosmos, on the other hand, has created a cross-chain hub model that connects independent "zones" (blockchains) via a central hub. Stablecoin projects can develop their own custom blockchains based on their needs and connect to the Cosmos ecosystem for cross-chain communication with other compatible blockchains. This gives stablecoin issuers greater autonomy,

allowing them to choose blockchain infrastructures that suit their target market and application scenarios, optimizing stablecoin performance.

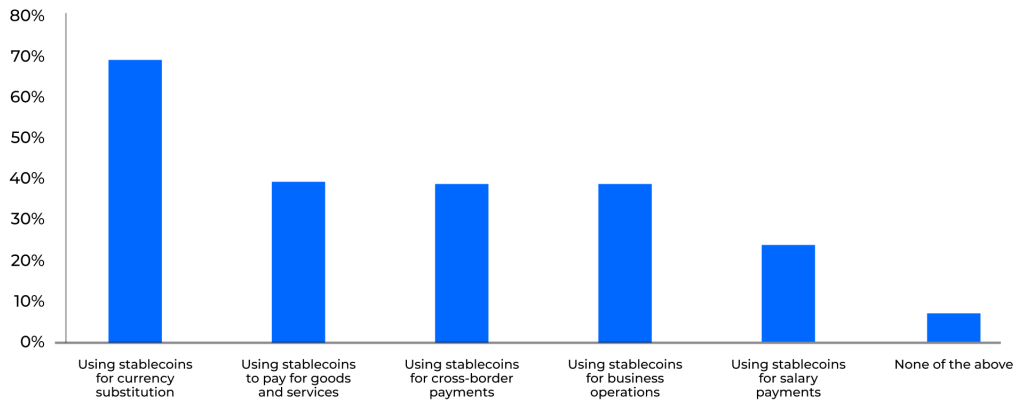
Cross-chain protocols based on hash locking and atomic swaps have shown unique advantages in small-scale stablecoin transactions. Through smart contracts, the stablecoins of both parties are locked until preset conditions (such as both parties confirming receipt) are met, at which point the transaction is automatically unlocked and completed, ensuring atomicity and security without the need for a trusted third-party intermediary. These protocols have been widely used in cross-border small remittances and decentralized e-commerce payments, offering users convenient and low-cost stablecoin cross-chain payment solutions.

As cross-chain technology continues to mature, stablecoins are expected to achieve seamless transfer across multiple blockchain ecosystems in the future. Users will be able to freely move stablecoin assets between different public chains, consortium chains, and private chains. Whether participating in DeFi mining on mainstream public chains or joining enterprise-level consortium chain supply chain finance projects, stablecoins will serve as a unified medium of exchange, breaking down barriers between blockchains and promoting the circulation and collaborative development of digital assets, thereby building an interconnected and prosperous blockchain financial ecosystem.

7.2 Stablecoin Market Future Development Forecast

7.2.1 Stablecoin Usage and Future Outlook in Emerging Markets [23]

Figure 25: The Range of Stablecoin Usage in Five Key Emerging Markets



Gate Research, Data from: Castle Island Ventures and Brevan Howard Digital (2024)

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Currency Substitution Market: In emerging markets like Venezuela, due to high local inflation and significant exchange rate fluctuations, some citizens and businesses have adopted stablecoins as a substitute currency. Future economic instability is likely to increase demand, but governments may strengthen regulation. If a balance between compliance and stability can be achieved, there is potential for cooperation with local governments, offering room for development.

Payment for Goods and Services Market: In emerging markets like Southeast Asia, where e-commerce is well-developed, some e-commerce platforms already support stablecoin payments, reducing the cost and risk of cross-border transactions. With technological advancements, stablecoin payments will become more convenient and secure, and the application scenarios will continue to expand. These payments may even integrate with existing payment methods, and issuers may launch promotional activities to encourage adoption.

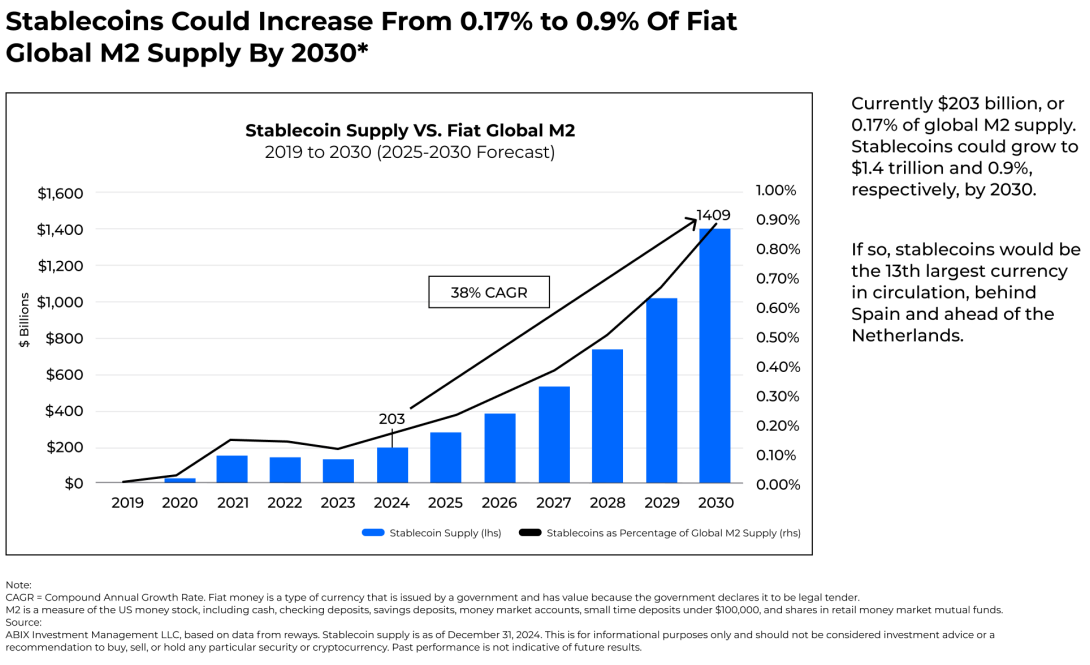
Cross-Border Payment Market: In emerging markets like Africa, stablecoins have been integrated into cross-border remittance platforms due to their low cost and fast transfer advantages. As global trade grows, more cross-border payment solutions using stablecoins are expected to emerge. Governments may also establish regulatory frameworks to promote their standardization and widespread use.

Business Operations Market: Startups and small and micro enterprises in emerging markets have begun using stablecoins to settle payments and receive investments, broadening their financing and settlement channels. As their integration with the real economy deepens, more innovative applications are expected, and large enterprises may gradually accept stablecoins. However, stablecoins must improve their compliance to meet the requirements of enterprises and regulators.

Salary Payment Market: In specific fields and regions, such as remote work platforms, stablecoins have been tested as a method of salary payment. With the digitalization of the flexible labor market, opportunities for stablecoin salary payments will arise. Enterprises may increase adoption, and issuers might launch supporting services, but compliance issues need to be addressed.

7.2.2 Future Outlook for the Stablecoin Market

Figure 26: Projected Stablecoin Supply by 2030



The stablecoin market is expected to continue increasing its influence in the global financial landscape. Its development prospects are filled with opportunities but face numerous challenges. From a market size perspective, the industry authority ARK Investment Management LLC's latest prediction in February 2025 shows that in the next five years, the total market value of stablecoins is expected to rise. By 2030, the supply of stablecoins is expected to exceed $1.4 trillion, accounting for 0.9% of the global M2 supply. If this forecast holds, stablecoins will become the 13th largest currency in global circulation, ranking behind the Spanish M2 supply but ahead of the Dutch M2 supply, thus becoming a key pillar of the global financial system [24].

Regarding application scenarios, stablecoins will play a more significant role in several key areas. In the cross-border payment field, the acceleration of the global trade digitalization process has made the shortcomings of traditional cross-border payment systems more apparent. Traditional cross-border remittance fees are high, averaging around 7%, and the transaction time is long, usually taking 2-5 business days. Stablecoins, powered by blockchain technology, can enable low-fee, near-real-time cross-border fund transfers. It is expected that the usage rate of stablecoins in cross-border payments will increase from the current less than 10% to over 30%, with the annual transaction volume reaching several trillion dollars. For example, in Southeast

Asia, as the e-commerce industry continues to grow, stablecoins have already begun to play a prominent role in cross-border e-commerce payments, with some e-commerce platforms supporting stablecoin payments. This effectively reduces cross-border transaction costs and risks, enhancing transaction efficiency.

In the DeFi ecosystem, stablecoins, as core infrastructure, will be deeply integrated into lending, trading, derivatives, insurance, and other areas. As the number of DeFi users continues to grow, the circulation of stablecoins in DeFi is expected to increase by more than 50% annually. In lending, popular DeFi platforms such as MakerDAO, Compound, and AAVE use stablecoins as both popular collateral and primary lending assets. Users can mint stablecoins by pledging crypto assets and then lend them out to earn returns, thereby achieving efficient asset utilization. In the trading field, stablecoins provide deep liquidity for decentralized exchanges (DEX), reducing slippage and improving the trading experience. For example, with mainstream DEX platforms like Uniswap and SushiSwap, users can directly trade stablecoins with other tokens quickly. Even during market peaks, large orders can be executed with lower slippage.

Based on the market share trend of different types of stablecoins, in the short term, fiat-collateralized stablecoins will still dominate. USDT and USDC, with their first-mover advantage, widespread market recognition, and strong compliance capabilities, hold a significant share in the stablecoin market. However, with the gradual maturity of the crypto market and the further improvement of regulatory policies, crypto-collateralized stablecoins and algorithmic stablecoins are expected to see new development opportunities.

Crypto-collateralized stablecoins, such as DAI, play a key role in the DeFi ecosystem through decentralized autonomous organizations (DAO). They provide decentralized, permissionless financial services by minting stablecoins through the pledge of crypto assets. As the DeFi ecosystem continues to thrive, the application scenarios of crypto-collateralized stablecoins will keep expanding, with market share expected to gradually increase from around 10% to 20%-30%.

Algorithmic stablecoins, such as FRAX, aim to maintain price stability through algorithmic supply-demand adjustments. Although algorithmic stablecoins were questioned after the collapse of UST, with ongoing technological improvements and innovations, they may find space for development in specific areas if breakthroughs are achieved in mechanism design and stability assurance. For example, in emerging markets, where small payments and internal crypto asset settlements are more common, the innovative mechanisms of algorithmic stablecoins may offer advantages, and their market share may grow to 5%-10%.

Despite the broad prospects of the stablecoin market, its development has several challenges.

Differences and dynamic adjustments in global regulatory policies impose higher requirements for stablecoin compliance. Some countries have strict regulations on the issuance and trading of stablecoins, while others may lack regulation or have uncertainties, which could limit the cross-border movement and application of stablecoins. The high volatility of the crypto market can also affect the stability of stablecoins, especially crypto-collateralized and algorithmic stablecoins, which may face risks such as plummeting collateral prices or algorithm failures. Additionally, technological security risks, such as smart contract vulnerabilities and hacking attacks, could result in the loss of user assets and undermine market confidence.

Therefore, to promote the healthy and sustainable development of the stablecoin market, industry participants need to closely monitor market dynamics, strengthen risk management, actively communicate and cooperate with regulatory agencies, and ensure compliant operations. At the same time, more investment in technological research and development should be made to enhance the stability, security, and scalability of stablecoins, enabling them to respond to market changes and challenges, seizing opportunities in the digital financial space, and achieving long-term development.

8 Conclusion

Stablecoins play a crucial role in the crypto market and the broader financial sector, acting as both a stabilizing anchor for the market and an engine for innovation. With continuous technological advancements and the gradual maturation of the market, stablecoins are expected to play an even greater role in cross-border payments and the DeFi ecosystem, driving the expansion of cryptocurrency within the realm of digital finance. However, the development of the stablecoin market also faces multiple challenges, including regulatory policies, market volatility, and technological security concerns. Industry participants must stay vigilant about market dynamics and actively address these challenges. The future of the stablecoin market will continue to move forward, navigating the balance between innovation and compliance, bringing more possibilities and opportunities to the global financial system.

Author: Laoli

9 References

[1] www.cdstm.cn/gallery/media/mkjx/qcyjswx_6431/202106/t20210622_1050048

[2] https://www.stablecoinsmap.com/

[3] https://m.btcbaike.com/zixun/172xhn.html

[4] https://defillama.com/stablecoins

[5] https://research.ark-invest.com/hubfs/1_Download_Files_ARK-Invest/Big_Ideas/ARK%20Invest%20Big%20Ideas%202025.pdf

[6] www.aicoin.com

[7] https://defillama.com/stablecoins

[8] https://tether.io/news/tether-hits-13-billion-profits-for-2024-and-all-time-highs-in-u-s-treasury-holdings-usdt-circulation-and-reserve-buffer-in-q4-2024-attestation/

[9] https://assets.ctfassets.net/vyse88cgwfbl/6L2yLNnLltcCP6ZcTxJrll/aea0ec279fea08637445c8be57f63d87/ISAE_3000R_-_Opinion_on_Tether_Consolidated_Financials_Figures_31.12.2024.pdf

[10] https://defillama.com/stablecoin/tether

[11] https://defillama.com/stablecoin/usd-coin

[12] https://defillama.com/stablecoin/dai

[13] https://defillama.com/stablecoin/frax

[14] https://hinvest.ai/what-is-pax-gold/

[15] https://www.gateex.cc/trade/BTC_USDT

[16] www.mpaypass.com.cn/news/202412/25101806.html

[17] https://www.niaogebiji.com/article-91430-1.html

[18] https://mp.weixin.qq.com/s?__biz=MzkxMjI5ODA0OQ==&mid=2247485430&idx=1&sn=60c906952a18b4ec2774f54bea0a72bf&chksm=c10e5ed8f679d7ceb72409a6373f2a5d8d8436c8eed1c54bbaf0f47abcc4e153b8421f17c54crd

[19] https://finance.ifeng.com/c/8fUst4D8rYp

[20] https://www.gate.io/zh/learn/articles/gate-research-overview-on-regulatory-policies-for-cryptocurrencies-in-major-countries-and-regions/5567

[21] https://mp.weixin.qq.com/s?__biz=MzkxMjI5ODA0OQ==&mid=2247485430&idx=1&sn=60c906952a18b4ec2774f54bea0a72bf&chksm=c10e5ed8f679d7ceb72409a6373f2a5d8d8436c8eed1c54bbaf0f47abcc4e153b8421f17c54crd

[22] https://news.qq.com/rain/a/20241223A08Y3200

[23] mp.weixin.qq.com/s/v_43emSCfP_STA-gSbL5Sw

[24] https://research.ark-invest.com/hubfs/1_Download_Files_ARK-Invest/Big_Ideas/ARK%20Invest%20Big%20Ideas%202025.pdf

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