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Europe's Looming Crypto-Banking Crisis

A CASE STUDY ON EURO STABLECOINS AND HOW FAMILIAR PLAYERS HINT AT A US-STYLE CRISIS VIA NEW FIAT OFF-RAMPS

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Contents.

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1. Introduction

To understand the looming crypto-banking crisis threatening the European Union, we first need to revisit how exposure to crypto-assets and the over-reliance on demand deposits from a single industry, played a key role in bringing down Silvergate Bank and Signature Bank in the US.

In this case study, we will,

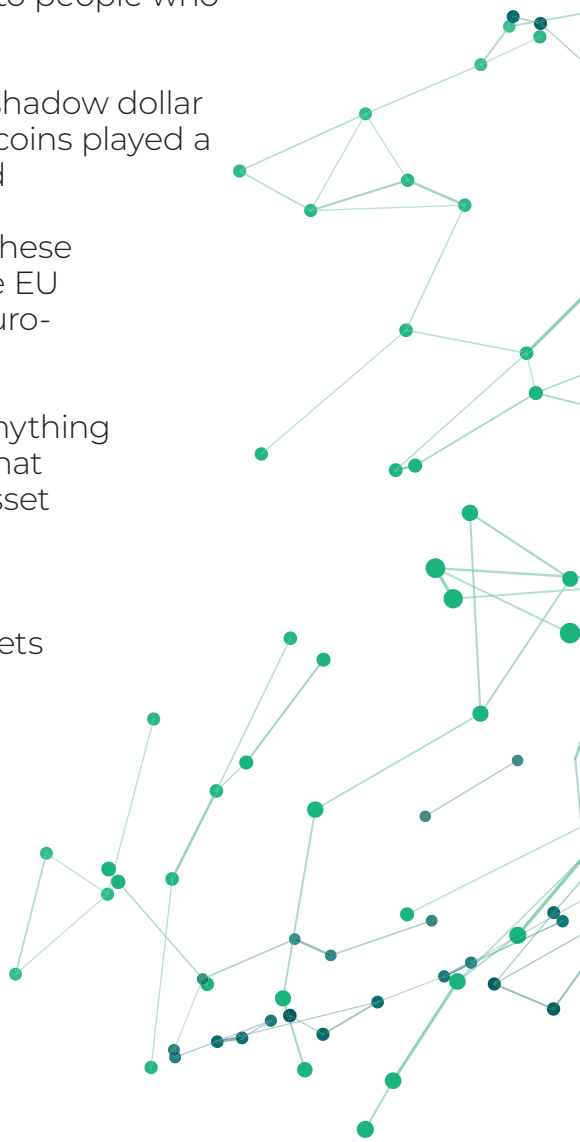
1. revisit how the two largest exchanges at the time, Binance and FTX, and their respective market makers, Cumberland and Alameda Research, operated as de facto reserve managers for a shadow dollar-based payment network for different geographies, catering to people who could not easily hold dollars or transfer them;

2. re-examine the role minor stablecoins played in that shadow dollar banking system, and explore how those minor stablecoins played a key role in lubricating fiat dollar on and off-ramps; and

3. analyze how the same banking problems caused by these activities in the US, now appear to be seeping into the EU through the recent proliferation of MiCA-compliant euro-backed stablecoins.

None of this analysis is intended in any way to suggest anything illegal is being perpetrated, but merely to demonstrate that many of the same practices undertaken by the crypto-asset industry in the American banking system are starting to make an appearance in the EU.

While the EU's flagship crypto-asset legislation, the Markets in Crypto-Assets Regulation ("MiCA") may have forced out stablecoins such as Tether's USDT, euro-equivalent stablecoins, issued by companies backed by stablecoin issuers like Tether, may create an exploitable blind spot that facilitates continued access to fiat off-ramps through the European banking system.



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2. The Shadow Dollar Banking System

We've previously written about how Tether's USDT stablecoin on Ethereum and on Tron were essentially different products, serving different use cases, and different groups of customers.[1]

At the time, the two largest exchanges and their market makers ran two parallel USDT networks on different blockchains. While FTX-Alameda Research were the primary recipients of USDT on Tron, Binance-Cumberland were the primary recipients of USDT on Ethereum.[2]

We've also documented how the amounts of USDT in circulation at the time, neatly matched the dollar deposits at Signature Bank and Silvergate Bank.[3] Given how Tether has long struggled with reliable banking facilities, it made sense that at the time these market makers were helping to fill in the gaps.

From that, we posited that FTX-Alameda Research and Binance-Cumberland, both of whom were close to Tether, had managed to carve the world up into two separate shadow dollar payment networks – one serving East Asia on Tron and the other serving the rest of the world on Ethereum.

Bahamas-based FTX-Alameda Research dominated the East Asia-focused Tron's USDT usage, and Binance appeared to have covered everything that was outside of East Asia, including Latin America, Africa, and India.

Finally, we concluded the massive pile of dollars backing this unregulated offshore payment system was sitting in a handful of US banks, probably as demand deposits that paid no interest, providing a nice earnings boost for those banks.

Now that we've provided some theories as to how Tether's USDT on different blockchains served different geographical regions, we examine how dollars were actually funneled into this shadow offshore dollar stablecoin system.

[1] https://medium.com/chainargos/usdt-on-tron-ftx-wtf-is-really-happening-ef0cb807019a
[2] https://protos.com/tether-papers-crypto-stablecoin-usdt-investigation-analysis/
[3] https://medium.com/chainargos/usdt-us-banks-more-coincidences-52a40dc90f2e

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3. The Role of Minor Stablecoins

To understand the role of minor stablecoins and how they fed into the shadow offshore dollar stablecoin system dominated by Tether, we need to go back to a time when HUSD, TUSD, USDP, and GUSD (collectively, the “Minor Stablecoins”), were plying the stablecoin trade.

At the time, GUSD issued by the crypto-asset exchange Gemini, and USDP issued by Paxos Trust LLC were generally considered to have been properly backed by dollars and had in place some measure of compliance with the necessary regulations.

HUSD, a stablecoin product of the Huobi crypto-asset exchange (now rebranded as HTX) was run by Paxos until July 2021. When HUSD ceased being a Paxos product, the means to send dollars to HUSD shifted from Paxos to Huobi Trust Company, as seen from these archival screenshots of dollar deposits.

Notice that even though the entities receiving the dollars were different, these dollars still fed into the Silvergate Exchange Network or SEN, operated by Silvergate Bank.

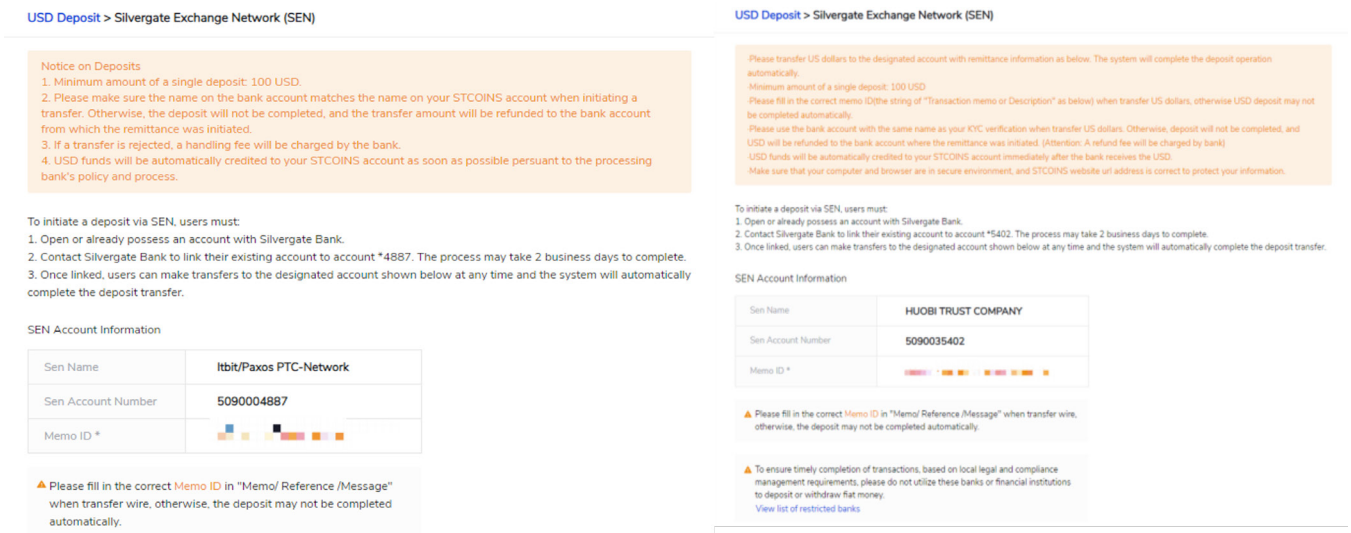

Figure 1. Screenshots for Paxos Trust LLC (left) and Huobi Trust Company (right) with wire instructions for USD using the Silvergate Exchange Network operated by Silvergate Bank.

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TUSD or TrueUSD provided somewhat more transparency as to where all the dollars they had were held and it used to run a website which showed which institutions held its backing assets.

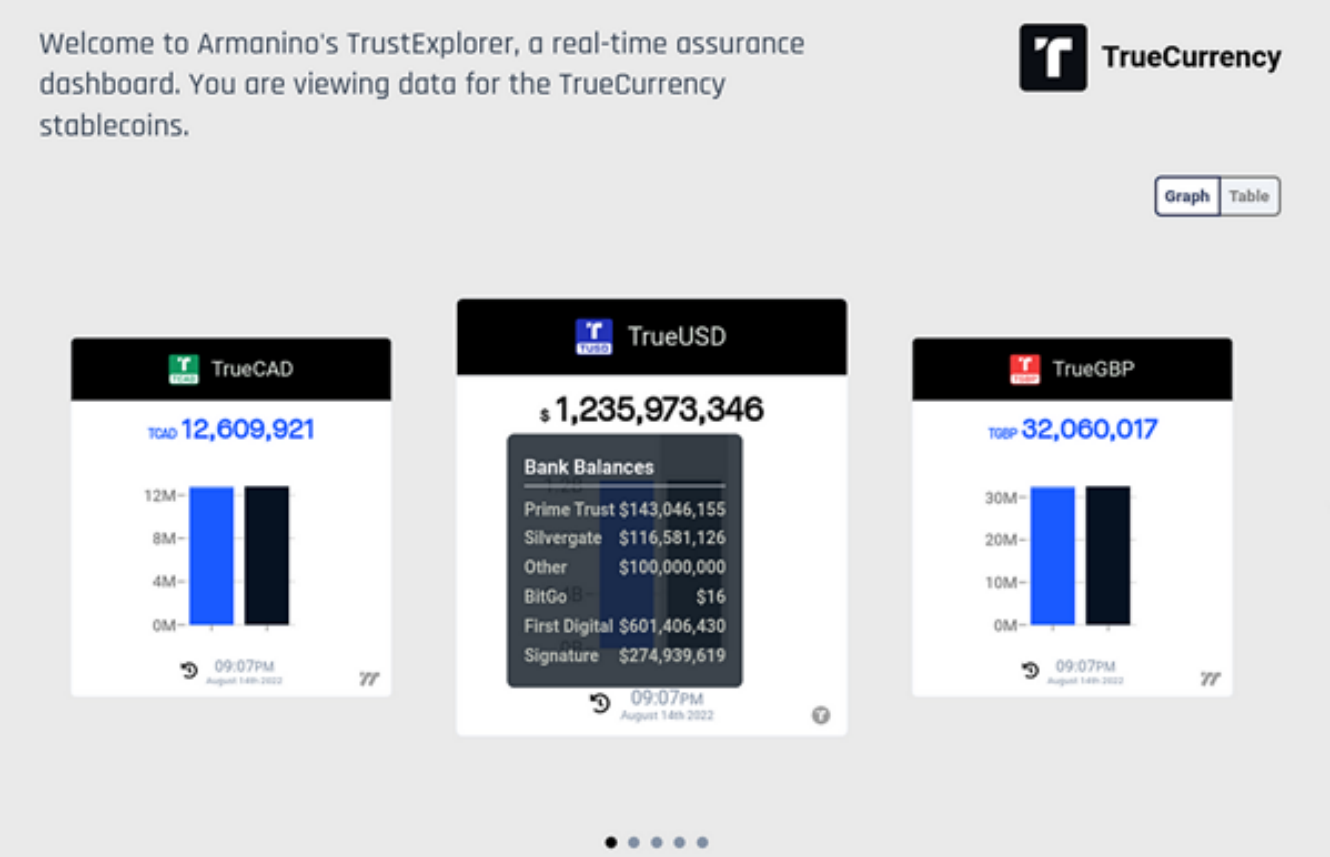

Figure 2. TrueUSD attestation page with information about where TUSD's backing asssets were held. Website is no longer available.

As you can see, both Silvergate Bank and Signature Bank held significant balances for TUSD, and we also know that Prime Trust was banking at Silvergate Bank.[4]

That all of these stablecoins banked at Silvergate Bank and Signature Bank was well-known then, as it is now.[5]

Now that we know where the Minor Stablecoins bank their bucks, how do we know they fed into Tether's USDT?

[4] https://www.sec.gov/Archives/edgar/data/1884321/000110465922035714/tm229760-1_partiiandiii.htm
[5] https://www.coindesk.com/business/2020/01/06/rivals-signature-bank-and-prime-trust-team-to-offer-instant-payments-for-institutions

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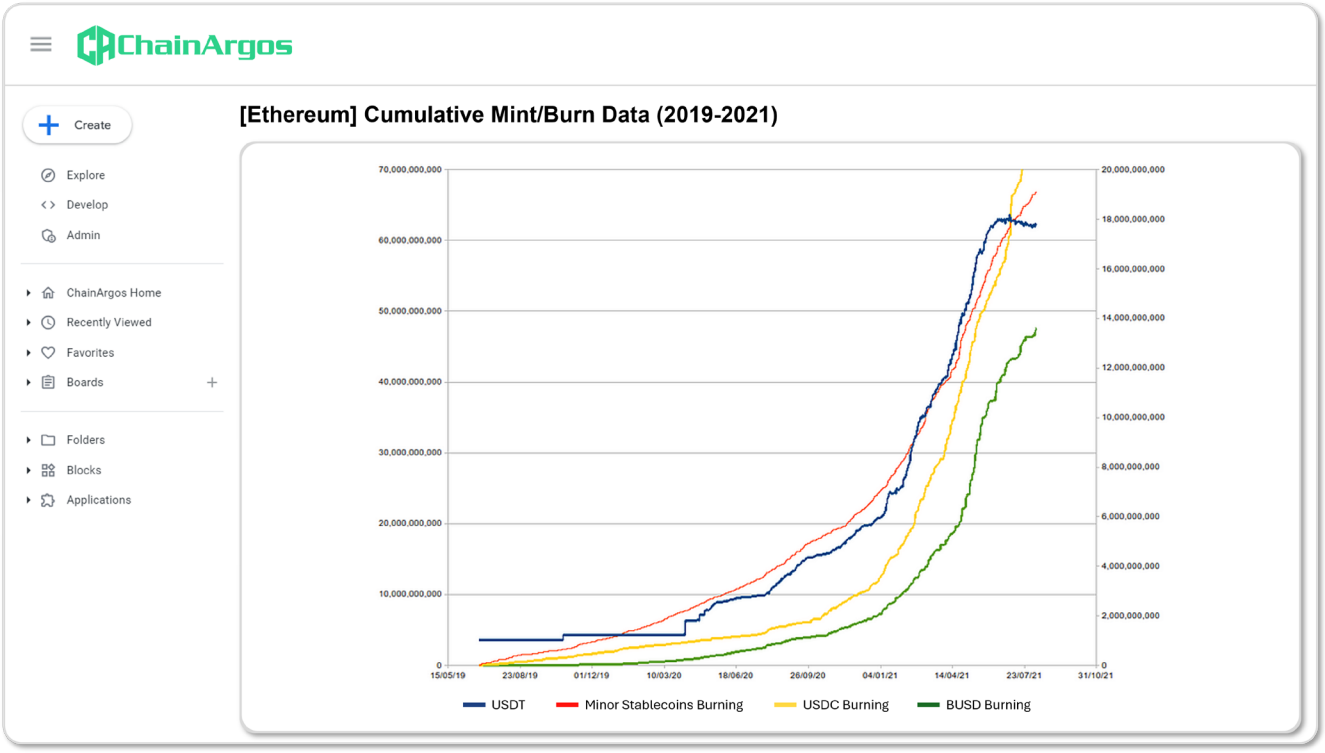

Figure 3. Cumulative USDT minting against cumulative stablecoin burning.

Between 2019 and 2021, it's clear that the cumulative amount of Minor Stablecoins burnt and the cumulative number of USDT minted bore an uncanny correspondence, as seen from the chart above.

The pink line is for the cumulative number of Minor Stablecoins burned and the blue line is for the cumulative growth of USDT.

The yellow USDC and green BUSD cumulative burning lines don't nearly map the USDT growth line as closely as the Minor Stablecoins.

At the time, we suggested one possibility was that the actual dollars flowing through the Minor Stablecoins ended up at Silvergate Bank and Signature Bank as possibly some kind of "outsourced" backing for USDT.

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This contention was supported by the fact that far more cash appeared to be churning through the Minor Stablecoins than other stablecoins like USDC and BUSD.

Stablecoin	Net Growth	Burn	Burn to Growth
HUSD	304,237,935	9,523,720,378	3,130%
GUSD	150,089,421	2,039,738,443	1,359%
TUSD	789,466,203	5,489,639,571	695%
USDP	1,102,879,340	,6,532,596,163	592%
BUSD	12,729,253,537	20,285,698,259	159%
USDC	33,164,649,125	44,839,229,891	135%
USDK	42,478,711	7,121,628	17%

From the table above, you can clearly see that from 2018 to 2021, HUSD, GUSD, TUSD, and USDP were burned far more than the other stablecoins BUSD, USDC, and USDK.

For instance, even though HUSD had only $250 million in market cap, it had $10.5 billion in minting, and $10.25 billion in burning.

Because most of the indicators at the time (and to some extent even now) only focused on market cap and not minting and burning statistics, nobody thought very much was going on with the Minor Stablecoins at all and therefore paid little (if any) attention to them.

Take USDP for instance, the stablecoin spends much of 2020 with what appears to be an unchanged market cap, but hundreds of millions of dollars' worth of USDP are minted and burned when its market cap was relatively stable.

Although some would cynically ascribe such transaction behavior to wash trading, that explanation doesn't deal with the fact that the actual money has to end up somewhere.

It is of course entirely possible the funds were washed and ended up somewhere else. For example, HUSD that had been burned might have been withdrawn as cash somehow, but a far simpler explanation is that HUSD that was burned ended up in the pile which we already know about that has a similar shape and size – USDT.

In the chart below, we see the burning of the Minor Stablecoins essentially mirroring the minting of USDT on the Ethereum and Tron blockchains between 2019 and 2020.

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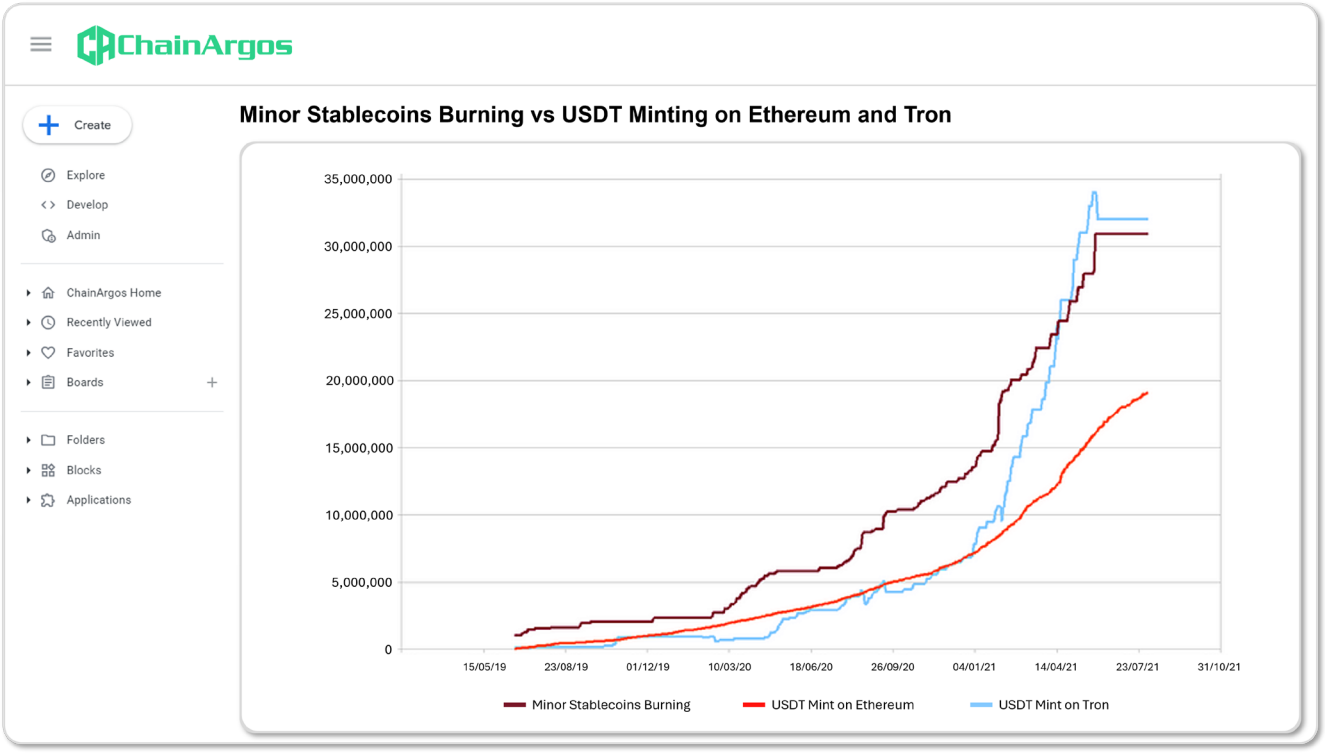

Figure 4. Minor Stablecoins burning (HUSD, GUSD, USDP, TUSD) vs USDT Minting on Ethereum and Tron blockchains.

Coincidentally, crypto-asset exchanges Huobi and Poloniex announced support for USDT on the Tron blockchain in March[6] and April[7] 2019 respectively, right after Tether commenced support for USDT on the Tron blockchain.[8]

None of this is to say anything untoward happened during that time.

But it does appear that a sizeable amount of actual dollars traveled through the Minor Stablecoins and ended up in the larger US-based banks that served crypto-asset firms as some form of backing asset for USDT.

And it is this massive pile of dollars that would eventually create problems for the US banks that were holding them.

[6] https://www.huobi.com/support/en-us/detail/360000225582/
[7] https://cointelegraph.com/news/crypto-exchange-poloniex-adds-support-for-usdt-on-tron-blockchain
[8] https://tether.to/en/usdt-introduced-to-tron-blockchain

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4. The Banks at the Center of It All

Signature Bank and Silvergate Bank were the lynchpins of the crypto-asset economy, serving as the primary dollar on and off-ramps for crypto-assets.

Signature Bank's startling increase in deposits started in 2019, when they shifted their focus to target digital assets.

> To further lay the necessary groundwork for future growth, we launched several new businesses and executed certain key initiatives since 2018, including the launch of a Fund Banking Division in October 2018, and our digital payments platform, Signet, in January 2019, which enables real-time payments between our commercial clients. In addition we announced our entry into venture banking in March 2019, and established our mortgage servicing banking initiative in July 2019 with the appointment of the Specialized Mortgage Banking Solutions team, specializing in providing treasury management product and services to residential and commercial mortgage servicers. After opening our flagship office in San Francisco in February 2019, which marked the commencement of our West Coast operations, the Bank has executed on our proven model by attracting new leadership for our West Coast initiative and onboarded a total of 18 teams in both San Francisco and the greater Los Angeles marketplace during 2020. Together with our San Francisco office, the Bank now has a total of 23 private banking teams, which consist of 76 banking professionals, on the West Coast as of December 31, 2020.

Figure 5. Taken from Signature Bank's Form 10-K. Signature Bank began focusing on digital assets in 2019. Original hyperlink may no longer be accessible.

From Signature Bank's Form 10-K filing from 2020,[9] we see that the business demand deposit accounts saw substantial growth around the time they started to support crypto-assets.

[9] https://s1.q4cdn.com/665033567/files/doc_downloads/sec/2021/03/SignatureBank-12.31.20-10K-Final-Copy-from-Wdesk.pdf

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(dollars in thousands)	December 31, 2020 Amount	2020 Percentage	2019 Amount	2019 Percentage
Personal demand deposit accounts (1)	$ 1,330,516	2.10 %	912,372	2.26 %
Business demand deposit accounts (1)	17,131,455	27.06 %	12,029,609	29.79 %
Brokered demand deposit accounts (1)	295,800	0.47 %	74,950	0.19 %
Personal NOW	39,939	0.06 %	39,964	0.10 %
Business NOW	11,785,174	18.61 %	5,068,290	12.55 %
Brokered NOW	769,676	1.22 %	35,522	0.09 %
Rent security	308,748	0.49 %	334,062	0.83 %
Personal money market accounts	4,026,622	6.36 %	3,699,199	9.16 %
Business money market accounts	24,854,533	39.25 %	15,339,660	37.98 %
Brokered money market accounts	928,815	1.47 %	480,245	1.19 %
Personal time deposits	443,897	0.70 %	476,360	1.18 %
Brokered time deposits	1,183,412	1.87 %	1,314,013	3.25 %
Business time deposits	216,736	0.34 %	578,961	1.43 %
Total	$ 63,315,323	100.00 %	40,383,207	100.00 %
Demand deposit accounts (1)	$ 18,461,971	29.16 %	12,941,981	32.05 %
NOW	11,825,113	18.68 %	5,108,254	12.65 %
Money market accounts	29,189,903	46.10 %	19,372,921	47.97 %
Time deposits	1,627,309	2.57 %	1,790,373	4.43 %
Brokered deposits (2)	2,211,027	3.49 %	1,169,678	2.90 %
Total	$ 63,315,323	100.00 %	40,383,207	100.00 %
Personal	$ 5,840,974	9.22 %	5,127,895	12.70 %
Business	55,263,322	87.28 %	34,085,634	84.40 %
Brokered deposits (2)	2,211,027	3.50 %	1,169,678	2.90 %
Total	$ 63,315,323	100.00 %	40,383,207	100.00 %

Figure 6. Taken from Signature Bank's 2020 annual report. Notice how "Business demand deposit accounts" rose by almost a third between 2019 and 2020. Document may no longer be available.

From the foregoing, it's clear that Signature Bank was very dependent on demand deposits, and to a far higher degree than most large banks in the US. To be sure, Signature Bank themselves recognized this dependence on demand deposits, noting:[10]

> Average non-interest-bearing demand deposits for the first quarter of 2022 were $44.90 billion, an increase of $24.25 billion, or 117.4%, when compared to the first quarter of 2021. Non-interest-bearing demand deposits continue to comprise a significant component of our deposit mix, 42.8% of all deposits at March 31, 2022. Additionally, average NOW and interest-bearing demand and money market accounts totaled $59.55 billion for the first quarter of 2022, an increase of $13.19 billion, or 28.4%, when compared to the first quarter of 2021. Core deposits have provided us with a source of stable and relatively low cost funding, which has positively affected our net interest margin and income. As a result of the decrease in the federal funds rate in 2021, our funding cost for money market accounts decreased to 0.27% for the quarter ended March 31, 2022 compared to 0.44% for the first quarter of 2021. Our funding cost for NOW and interest-bearing demand accounts was 0.37% for the first quarter of 2022 compared to 0.50% for the first quarter of 2021.

Figure 7. Extract taken from Signature Bank's Q1 2022 Form 10-Q. Original hyperlink may no longer be accessible.

[10] https://s1.q4cdn.com/665033567/files/doc_downloads/2022/05/1Q-2022-10Q-FINAL.pdf

But demand deposits in and of themselves aren't a big deal, it's who was providing these demand deposits that mattered, and Signature Bank made clear it was their digital asset customers who formed the bulk of their demand deposits.[11]

> Core deposits, which exclude time deposits and brokered deposits, increased $22.64 billion to $82.11 billion as of June 30, 2021, from $59.48 billion as of December 31, 2020. The increase is due to the addition of new private client banking teams, further traction of recent deposit growth initiatives, such as the expansion of our digital asset banking deposit base as discussed in more detail in *Recent Developments*, as well as additional deposits garnered by our existing private client banking teams.

Figure 8. Extract taken from Signature Bank's Q2 2021 Form 10-Q. Original hyperlink may no longer be accessible.

Silvergate Bank was also similarly active in the crypto-asset space as evidenced by their Q3 2019 Form 10-Q filing:[12]

Silvergate Capital Corporation is the holding company for our wholly-owned subsidiary, Silvergate Bank, which we believe is the leading provider of innovative financial infrastructure solutions and services to participants in the nascent and expanding digital currency industry. Instrumental to our leadership position and growth strategy is the Silvergate Exchange Network, or SEN, our proprietary, virtually instantaneous payment network for participants in the digital currency industry which serves as a platform for the development of additional products and services. The SEN has a powerful network effect that makes it more valuable as participants and utilization increase. The SEN has enabled us to focus on significantly growing our noninterest bearing deposit product for digital currency industry participants, which has provided the majority of our funding over the last two years. This unique source of funding is a distinctive advantage over most traditional financial institutions and allows us to generate revenue from a conservative portfolio of investments in cash, short term securities and certain types of loans that we believe generate attractive risk-adjusted returns. In addition, use of the SEN has resulted in an increase in noninterest income that we believe will become a valuable source of additional revenue as we develop and deploy fee-based solutions in connection with our digital currency initiative. We are also evaluating additional products or product enhancements specifically targeted at providing further financial infrastructure solutions to our customers and strengthening SEN network effects.

Figure 9. Extract taken from Silvergate Bank's Q3 2019 Form 10-Q. Original hyperlink may no longer be accessible.

We leverage the SEN and our management team's expertise in the digital currency industry to develop, implement and maintain critical financial infrastructure solutions and services for many of the largest U.S. digital currency exchanges and global investors, as well as other digital currency infrastructure providers that utilize the Company as a foundational layer for their products. The SEN is a central element of the operations of our digital currency related customers, which enables us to grow with our existing customers and to attract new customers who can benefit from our innovative solutions and services. We believe that our management team's vision and our advanced approach to compliance complement the SEN and empower us to extend our leadership position in the industry by developing additional infrastructure solutions and services that will facilitate growth in our business.

We began exploring the digital currency industry in 2013 based on market dynamics which we believed were highly attractive:

- **Significant and Growing Industry:** Digital currency presented a revolutionary model for executing financial transactions with substantial potential for growth.
- **Infrastructure Needs:** In order to become widely adopted, digital currency would need to rely on many traditional elements of financial services, including those services that support funds transfers, customer account controls and other security measures.
- **Regulatory Complexity as a Barrier to Entry:** Providing infrastructure solutions and services to the digital currency industry would require specialized compliance capabilities and a management team with a deep understanding of both the digital currency and the financial services industries.

These insights have been proven correct and we believe they remain true today. In fact, we believe that the market opportunity for digital currencies, the need for infrastructure solutions and services and the regulatory complexity have all expanded significantly since 2013. Our ability to address these market dynamics over the past six years has provided us with a first-mover advantage within the digital currency industry that is the cornerstone of our leadership position today.

Figure 10. Extract taken from Silvergate Bank's Q3 2019 Form 10-Q, describing the bank's Silvergate Exchange Network or SEN. Original hyperlink may no longer be accessible.

And who were Silvergate Bank's customers? The same customers served by Signature Bank – the digital asset industry.

[11] https://s1.q4cdn.com/665033567/files/doc_downloads/sec/2021/08/2Q-2021-10Q-FINAL.pdf
[12] https://www.sec.gov/ix?doc=%2FArchives%2Fedgar%2Fdata%2F1312109%2F000131210919000064%2Fsi10-q9302019.htm

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Digital Currency Customers

Our customer base has grown rapidly, as many customers proactively approach us due to our reputation as the leading provider of innovative financial infrastructure solutions and services to participants in the digital currency industry, which includes our unique technology solutions. As of September 30, 2019, we had 250 prospective digital currency customers in various stages of our customer onboarding process, which includes extensive regulatory compliance diligence and integrating of the customer's technology stack for those new digital currency customers interested in using our API.

The following chart sets forth summary information regarding the types of market participants who are our primary customers:

- **Digital Currency Exchanges:** Exchanges through which digital currencies are bought and sold; includes over-the-counter, or OTC, trading desks.
- **Institutional Investors:** Hedge funds, venture capital funds, private equity funds, family offices and traditional asset managers, which are investing in digital currencies as an asset class.
- **Other Customers:** Companies developing new protocols, platforms and applications; mining operations; and providers of other services.

Our customers include some of the largest U.S. exchanges and global investors in the digital currency industry. These market participants generally hold either or both of two distinct types of funds: (i) those funds that market participants use for digital currency investment activities, which we refer to as investor funds, and (ii) those funds that market participants use for business operations, which we refer to as operating funds.

Silvergate Bank also disclosed their deposit base, and it's obvious that they never had any meaningful interest-bearing accounts, it was almost entirely non-interest bearing demand deposits.[13]

Deposits:		
Noninterest bearing demand accounts	$	2,164,326
Interest bearing accounts		116,782
Total deposits		2,281,108

Figure 11. Extract taken from Silvergate Bank's Q3 2020 Form 10-Q.

Now that we've established that Signature Bank and Silvergate Bank were the primary bankers to the crypto-asset industry, let's see if we can find any correlations.

While Silvergate Bank was a tiny bank before their pivot to crypto-assets, Signature Bank was much larger.

Subtracting the $30 billion that Signature Bank started with and adding Signature Bank's demand deposit increases together with Silvergate Bank's we can create the following table.

Year	Period	Silvergate	Signature	Total	Q-on-Q Growth
2019	Q3	1.7	1.0	2.7	
2019	Q4	1.7	2.0	3.7	1.0
2020	Q1	2.0	4.0	6.0	2.3
2020	Q2	2.0	12.0	14.0	8.0
2020	Q3	2.2	16.0	18.2	4.2
2020	Q4	2.2	24.0	26.2	8.0
2021	Q1	7.0	34.0	41.0	14.8
2021	Q2	11.4	47.0	58.4	17.4
2021	Q3	11.7	56.0	67.7	9.3
2021	Q4	10.4	66.0	76.4	8.7
2022	Q1	13.4	69.5	82.9	6.5
2022	Q2	13.5	64.0	77.5	-5.4

[13] https://www.sec.gov/ix?doc=%2FArchives%2Fedgar%2Fdata%2F1312109%2F000131210920000150%2Fsi10-q9302020.htm

The totals are shockingly similar to another closely-watched total at the time – the amount of Tether outstanding:

Year	Period	Total	USDT Total
2019	Q3	2.7	4.1
2019	Q4	3.7	4.1
2020	Q1	6.0	6.2
2020	Q2	14.0	9.2
2020	Q3	18.2	15.1
2020	Q4	26.2	21.1
2021	Q1	41.0	40.7
2021	Q2	58.4	62.4
2021	Q3	67.7	68.0
2021	Q4	76.4	78.3
2022	Q1	82.9	81.4
2022	Q2	77.5	66.4

There is absolutely no reason these numbers should match up so neatly, especially given Tether was not officially holding their cash reserves at these banks. In fact, this was around the time that Tether declared it was primarily holding commercial paper.

But it does allow for a theory to be posited, that while Tether may not have been banking directly with Silvergate Bank and Signature Bank (for obvious reasons), it is possible Tether's commercial paper consisted of obligations of whoever held these demand deposits at the banks.

While it is a terrible abuse of language to equate promising someone else your bank deposit to commercial paper, it is analogous to a kind of certificate of deposit, or even an accounts receivable instrument.

In any event, we know that prior to the collapse of Silvergate Bank and Signature Bank, they were heavily reliant on demand deposits from crypto-asset customers, and therein lay the problem.

Demand deposits are funds that customers can withdraw at any time and this makes them inherently volatile, especially when they come from a sector as prone to swings as the crypto-asset markets.

In 2022, the collapse of Terra-LUNA, FTX, 3AC, Celsius, and Voyager, and the rapid decline in crypto-asset values, saw customers withdraw funds from Signature and Silvergate en masse, creating a liquidity crisis for these banks.

The sudden and large-scale withdrawals forced Silvergate and Signature Bank to sell off assets, often at a loss, to meet their obligations, further eroding their financial stability, creating a loss of confidence among the remaining non-crypto depositors, fueling a run on the banks.

5. Could a US-Style Crisis hit the EU?

We previously prepared a detailed case study[14] on the MiCA-compliant EURI stablecoin issued by the Luxembourg-based Banking Circle S.A. and noted how the only counterparty to have redeemed EURI for euros in the banking system, appeared linked to the crypto-asset exchange Binance and First Digital Trust Limited.

It appears that EURI is possibly being used as a euro off-ramp for FDUSD and other stablecoins, and such a use case would be consistent with what was seen in the American experience, where Minor Stablecoins were feeding into Tether's USDT.

Now StablR,[15] a recently launched service provider[16] backed by Tether,[17] and which holds a Maltese Electronic Money Institution (EMI) license,[18] has launched EURR, a new euro-backed stablecoin.

The largest receiver of EURR is an address linked to Cumberland DRW ("0x091d Address").

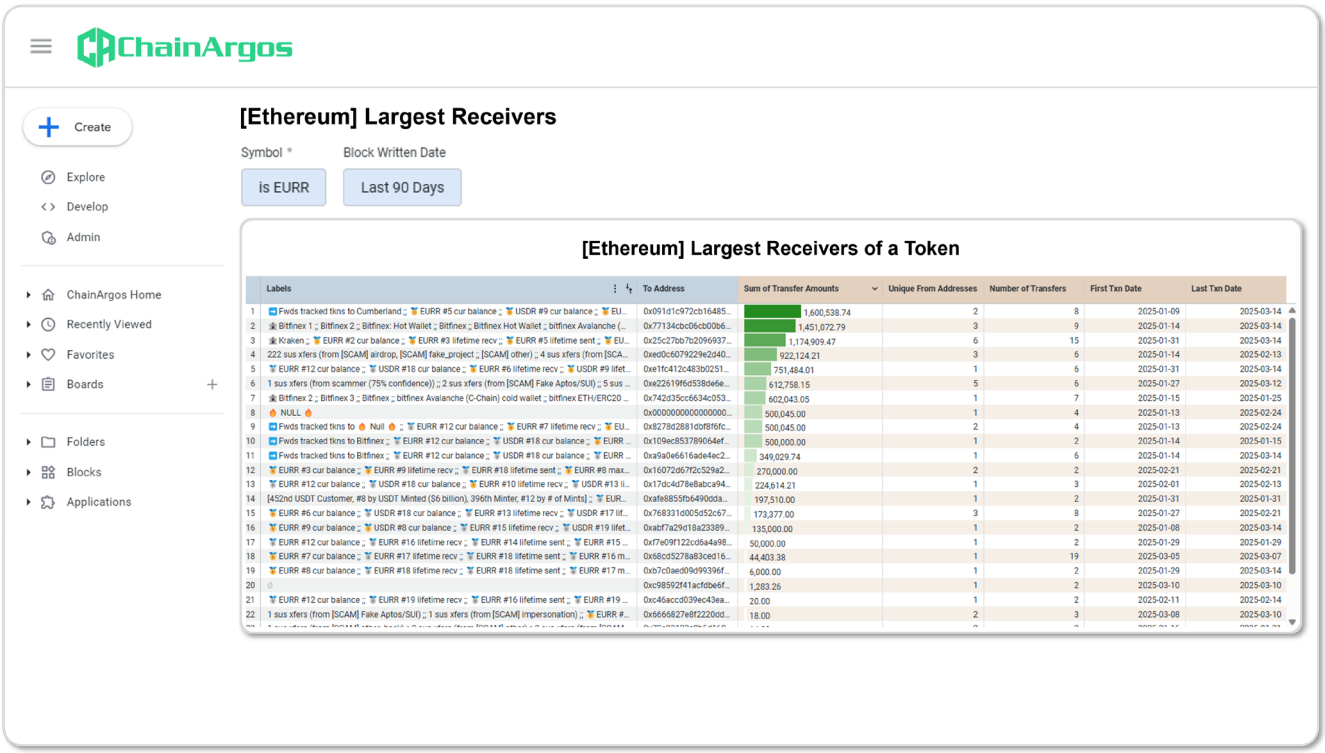

Figure 12. Largest Receivers of the EURR token over the preceding 90 days. Notice that an address linked to Cumberland (either a customer or Cumberland themselves), Bitfinex (associated with Tether) and Kraken are the largest recipients of EURR.

[14] https://www.chainargos.com/challenges-mica-stablecoins/
[15] https://www.stablr.com/
[16] https://euclid.eba.europa.eu/register/pir/search
[17] https://tether.io/news/tether-invests-in-stablr-to-promote-stablecoin-adoption-in-europe
[18] https://www.stablr.com/insights/stablr-secures-emi-license

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The 0x091d Address processes a significant volume of stablecoins, facilitating deposits of billions of dollars worth of USDC, USDT, FDUSD, and other tokens to a wide range of exchanges.

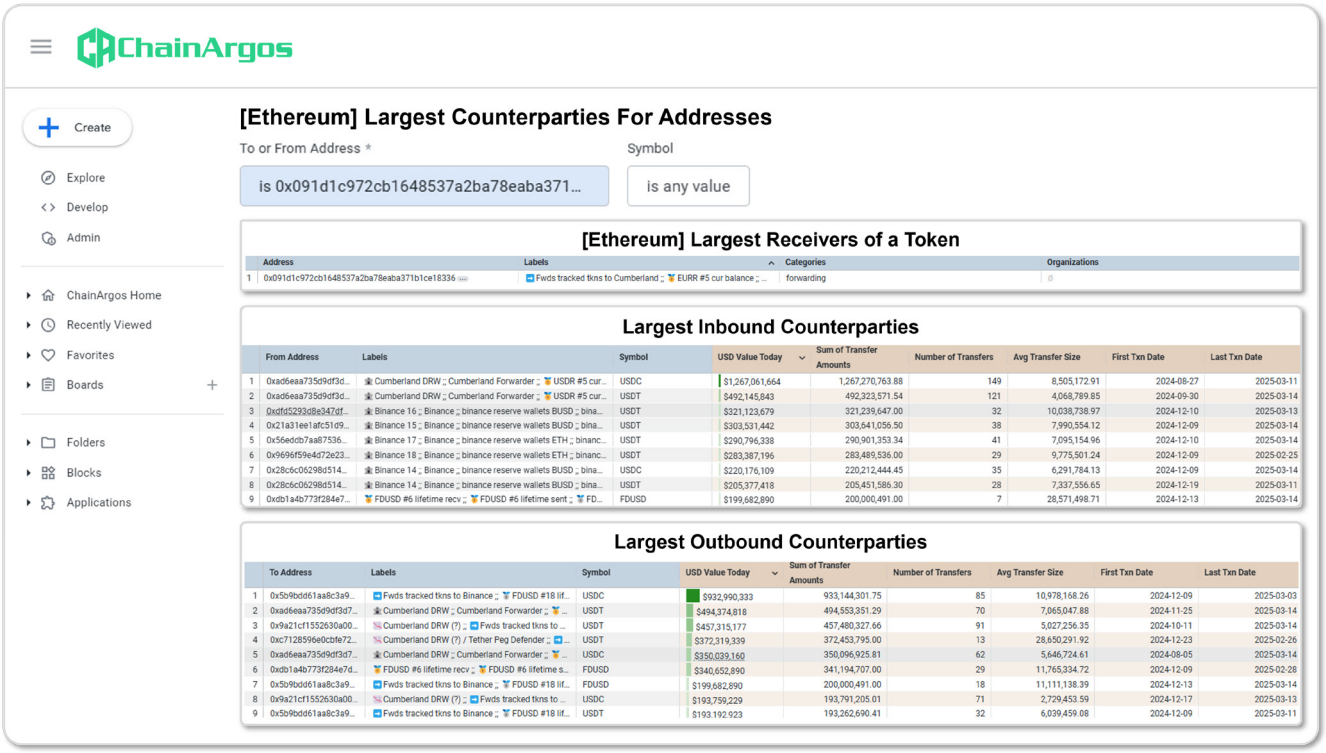

Figure 13. Largest Counterparties for the 0x091d Address associated with Cumberland and transacting billions of dollars worth of stablecoins primarily with Binance and Cumberland.

The 0x091d Address' largest deposits are to Binance and it is also one of the largest transactors of FDUSD, depositing almost $200 million worth of FDUSD to a Binance deposit address.

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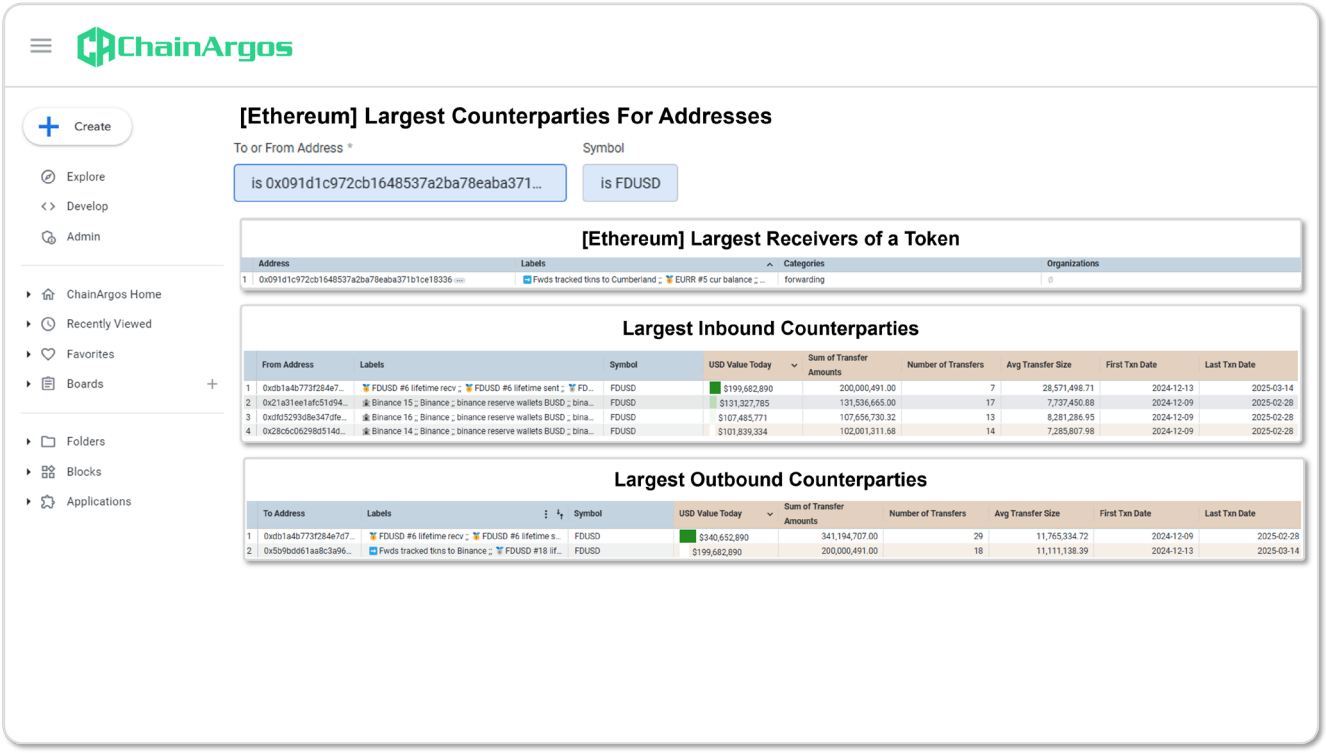
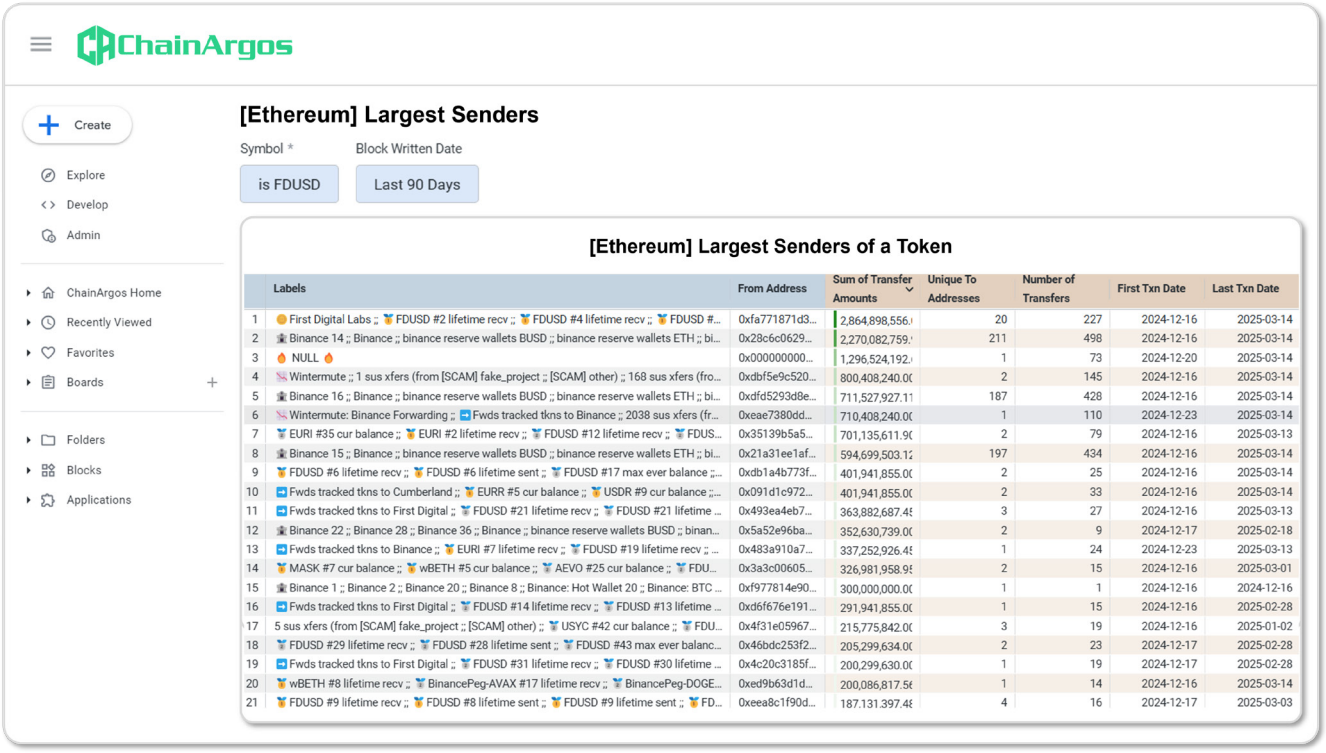


Figure 14. Largest Counterparties for the 0x091d Address associated with Cumberland, filtered for FDUSD only, and displaying how almost $200 million worth of FDUSD was sent by this address to Binance.

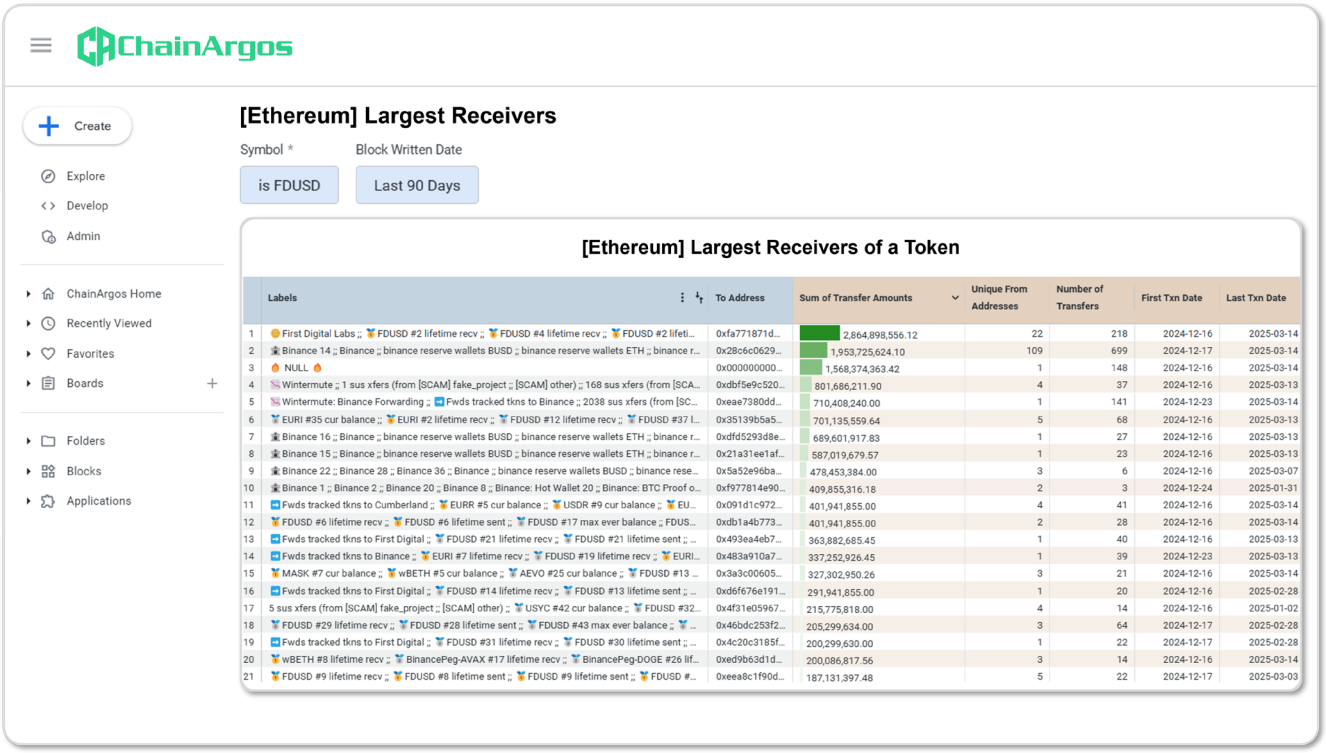
FDUSD is a stablecoin used almost exclusively on Binance and issued by a Hong Kong trust company associated with a stablecoin-related fraud settlement with the US Securities and Exchange Commission.

The largest senders and receivers of FDUSD are also either Binance or Wintermute.



	Labels	From Address	Sum of Transfer Amounts	Unique To Addresses	Number of Transfers	First Txn Date	Last Txn Date
1	First Digital Labs ;; FDUSD #2 lifetime recv ;; FDUSD #4 lifetime recv ;; FDUSD #...	0xfa771871d3...	2,864,898,556.(	20	227	2024-12-16	2025-03-14
2	Binance 14 ;; Binance ;; binance reserve wallets BUSD ;; binance reserve wallets ETH ;; bi...	0x28c6c0629...	2,270,082,759.(	211	498	2024-12-16	2025-03-14
3	NULL	0x000000000...	1,296,524,192.(	1	73	2024-12-20	2025-03-14
4	Wintermute ;; 1 sus xfers (from [SCAM] fake_project ;; [SCAM] other) ;; 168 sus xfers (fro...	0xdbf5e9c520...	800,408,240.0(	2	145	2024-12-16	2025-03-14
5	Binance 16 ;; Binance ;; binance reserve wallets BUSD ;; binance reserve wallets ETH ;; bi...	0xdfd5293d8e...	711,527,927.11	187	428	2024-12-16	2025-03-14
6	Wintermute: Binance Forwarding ;; Fwds tracked tkns to Binance ;; 2038 sus xfers (fr...	0xeae7380dd...	710,408,240.0(	1	110	2024-12-23	2025-03-14
7	EURI #35 cur balance ;; EURI #2 lifetime recv ;; FDUSD #12 lifetime recv ;; FDUS...	0x35139b5a5...	701,135,611.9(	2	79	2024-12-16	2025-03-13
8	Binance 15 ;; Binance ;; binance reserve wallets BUSD ;; binance reserve wallets ETH ;; bi...	0x21a31ee1af...	594,699,503.1(	197	434	2024-12-16	2025-03-14
9	FDUSD #6 lifetime recv ;; FDUSD #6 lifetime sent ;; FDUSD #17 max ever balance ;;...	0xdb1a4b773f...	401,941,855.0(	2	25	2024-12-16	2025-03-14
10	Fwds tracked tkns to Cumberland ;; EURR #5 cur balance ;; USDR #9 cur balance ;;...	0x091d1c972...	401,941,855.0(	2	33	2024-12-16	2025-03-14
11	Fwds tracked tkns to First Digital ;; FDUSD #21 lifetime recv ;; FDUSD #21 lifetime ...	0x493ea4eb7...	363,882,687.45	3	27	2024-12-16	2025-03-13
12	Binance 22 ;; Binance 28 ;; Binance 36 ;; Binance ;; binance reserve wallets BUSD ;; binan...	0x5a52e96ba...	352,630,739.0(	2	9	2024-12-17	2025-02-18
13	Fwds tracked tkns to Binance ;; EURI #7 lifetime recv ;; FDUSD #19 lifetime recv ;; ...	0x483a910a7...	337,252,926.45	1	24	2024-12-23	2025-03-13
14	MASK #7 cur balance ;; wBETH #5 cur balance ;; AEVO #25 cur balance ;; FDU...	0x3a3c00605...	326,981,958.9(	2	15	2024-12-16	2025-03-01
15	Binance 1 ;; Binance 2 ;; Binance 20 ;; Binance 8 ;; Binance: Hot Wallet 20 ;; Binance: BTC ...	0xf977814e90...	300,000,000.0(	1	1	2024-12-16	2024-12-16
16	Fwds tracked tkns to First Digital ;; FDUSD #14 lifetime recv ;; FDUSD #13 lifetime ...	0xd6f676e191...	291,941,855.0(	1	15	2024-12-16	2025-02-28
17	5 sus xfers (from [SCAM] fake_project ;; [SCAM] other) ;; USYC #42 cur balance ;; FDU...	0x4f31e05967...	215,775,842.0(	3	19	2024-12-16	2025-01-02
18	FDUSD #29 lifetime recv ;; FDUSD #28 lifetime sent ;; FDUSD #43 max ever balanc...	0x46bdc253f2...	205,299,634.0(	2	23	2024-12-17	2025-02-28
19	Fwds tracked tkns to First Digital ;; FDUSD #31 lifetime recv ;; FDUSD #30 lifetime ...	0x4c20c3185f...	200,299,630.0(	1	19	2024-12-17	2025-02-28
20	wBETH #8 lifetime recv ;; BinancePeg-AVAX #17 lifetime recv ;; BinancePeg-DOGE...	0xed9b63d1d...	200,086,817.5(	1	14	2024-12-16	2025-03-14
21	FDUSD #9 lifetime recv ;; FDUSD #8 lifetime sent ;; FDUSD #9 lifetime sent ;; FD...	0xeea8c1f90d...	187,131,397.48	4	16	2024-12-17	2025-03-03

Figure 15. Largest Senders of FDUSD. Besides First Digital Labs, which is associated with the issuance of FDUSD, the main sender of FDUSD is Binance, and the market maker Wintermute.



	Labels	To Address	Sum of Transfer Amounts	Unique From Addresses	Number of Transfers	First Txn Date	Last Txn Date
1	First Digital Labs ;; FDUSD #2 lifetime recv ;; FDUSD #4 lifetime recv ;; FDUSD #2 lifeti...	0xfa771871d...	2,864,898,556.12	22	218	2024-12-16	2025-03-14
2	Binance 14 ;; Binance ;; binance reserve wallets BUSD ;; binance reserve wallets ETH ;; binance r...	0x28c6c0629...	1,953,725,624.10	109	699	2024-12-17	2025-03-14
3	NULL	0x000000000...	1,568,374,363.42	1	148	2024-12-16	2025-03-14
4	Wintermute ;; 1 sus xfers (from [SCAM] fake_project ;; [SCAM] other) ;; 168 sus xfers (from [SCA...	0xdbf5e9c520...	801,686,211.90	4	37	2024-12-16	2025-03-13
5	Wintermute: Binance Forwarding ;; Fwds tracked tkns to Binance ;; 2038 sus xfers (from [SC...	0xeae7380dd...	710,408,240.00	1	141	2024-12-23	2025-03-14
6	EURI #35 cur balance ;; EURI #2 lifetime recv ;; FDUSD #12 lifetime recv ;; FDUSD #37 l...	0x35139b5a5...	701,135,559.64	5	68	2024-12-16	2025-03-13
7	Binance 16 ;; Binance ;; binance reserve wallets BUSD ;; binance reserve wallets ETH ;; binance r...	0xdfd5293d8e...	689,601,917.83	1	27	2024-12-16	2025-03-13
8	Binance 15 ;; Binance ;; binance reserve wallets BUSD ;; binance reserve wallets ETH ;; binance r...	0x21a31ee1af...	587,019,679.57	1	23	2024-12-16	2025-03-13
9	Binance 22 ;; Binance 28 ;; Binance 36 ;; Binance ;; binance reserve wallets BUSD ;; binance rese...	0x5a52e96ba...	478,453,384.00	3	6	2024-12-16	2025-03-07
10	Binance 1 ;; Binance 2 ;; Binance 20 ;; Binance 8 ;; Binance: Hot Wallet 20 ;; Binance: BTC Proof o...	0xf977814e90...	409,855,316.18	2	3	2024-12-24	2025-01-31
11	Fwds tracked tkns to Cumberland ;; EURR #5 cur balance ;; USDR #9 cur balance ;; EU...	0x091d1c972...	401,941,855.00	4	41	2024-12-16	2025-03-14
12	FDUSD #6 lifetime recv ;; FDUSD #6 lifetime sent ;; FDUSD #17 max ever balance ;; FDUS...	0xdb1a4b773...	401,941,855.00	2	28	2024-12-16	2025-03-14
13	Fwds tracked tkns to First Digital ;; FDUSD #21 lifetime recv ;; FDUSD #21 lifetime sent ;; ...	0x493ea4eb7...	363,882,685.45	1	40	2024-12-16	2025-03-13
14	Fwds tracked tkns to Binance ;; EURI #7 lifetime recv ;; FDUSD #19 lifetime recv ;; EURI...	0x483a910a7...	337,252,926.45	1	39	2024-12-23	2025-03-13
15	MASK #7 cur balance ;; wBETH #5 cur balance ;; AEVO #25 cur balance ;; FDUSD #13 ...	0x3a3c00605...	327,302,950.26	3	21	2024-12-16	2025-03-14
16	Fwds tracked tkns to First Digital ;; FDUSD #14 lifetime recv ;; FDUSD #13 lifetime sent ;; ...	0xd6f676e191...	291,941,855.00	1	20	2024-12-16	2025-02-28
17	5 sus xfers (from [SCAM] fake_project ;; [SCAM] other) ;; USYC #42 cur balance ;; FDUSD #32...	0x4f31e05967...	215,775,818.00	4	14	2024-12-16	2025-01-02
18	FDUSD #29 lifetime recv ;; FDUSD #28 lifetime sent ;; FDUSD #43 max ever balance ;; ...	0x46bdc253f2...	205,299,634.00	3	64	2024-12-17	2025-02-28
19	Fwds tracked tkns to First Digital ;; FDUSD #31 lifetime recv ;; FDUSD #30 lifetime sent ;; ...	0x4c20c3185f...	200,299,630.00	1	22	2024-12-17	2025-02-28
20	wBETH #8 lifetime recv ;; BinancePeg-AVAX #17 lifetime recv ;; BinancePeg-DOGE #26 lif...	0xed9b63d1d...	200,086,817.56	3	14	2024-12-16	2025-03-14
21	FDUSD #9 lifetime recv ;; FDUSD #8 lifetime sent ;; FDUSD #9 lifetime sent ;; FDUSD #...	0xeea8c1f90d...	187,131,397.48	5	22	2024-12-17	2025-03-03

Figure 16. Largest Receivers of FDUSD. Besides First Digital Labs, which is associated with the issuance of FDUSD, the main receiver of FDUSD is Binance, and the market maker Wintermute.

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That Binance is one of the major counterparties for EURR since its launch, using some of the same addresses used previously to transact FDUSD, suggests the exchange is setting up to do the same thing in Europe that it had done previously in the US.

There is insufficient volume in EURR at this point (fewer than 20 addresses have received more than one thousand EURR as of this writing and none has received more than 10 million) to establish what EURR is being used for.

But we can already see EURR reusing infrastructure and frameworks linked to many recent problems that for the most part had stopped following a wide range of legal and enforcement actions.

It's worth noting that exchanges operating in the EU, including Binance, are delisting Tether's USDT, but recall that EURR has a MiCA license and Tether backs EURR's issuer.

That the same cluster of counterparties is reusing the same frameworks and infrastructure they had in place previously, only in euros this time instead of dollars, and in the European banking system this time instead of the American one, strongly suggests an intention to engage in the same sort of conduct seen previously.

Again, none of this is to suggest that anything illegal or nefarious is happening, but rather to highlight that some of the very same risks that were crystalized in the US banking system are starting to appear in the EU banking system.

Insofar as regulators are aware of such risks and exercising adequate oversight of the relevant financial institutions within their regulatory ambit, then there isn't a whole lot to be concerned about.

[19] https://www.binance.com/en/support/announcement/detail/bcaa1f68d6a6450099056ff694ad6c46

Who are we?

ChainArgos is the blockchain intelligence firm best known for uncovering crypto-asset exchange Binance's $1.4bn BUSD stablecoin undercollateralization, forcing the New York Department of Financial Services to take action.

We provide unparalleled blockchain intelligence by focusing on the financial drivers of transactions, facilitate investigations and analysis centered on the economic value of transfers, and provide insight into the motivation behind specific flows.

ChainArgos is recognized globally as a leader in blockchain intelligence.

We've tracked illicit flows funding terrorism and sanctions evasion, analyzed transaction patterns connecting global scams, and uncovered crypto-asset trading opportunities before the market.

Where else have you seen us?

ChainArgos works with the United Nations, governments, central banks, financial institutions, hedge funds, proprietary trading firms, regulators, law enforcement and intelligence agencies, research institutes, universities, and crypto-asset service providers globally.

We're trusted by top news outlets including the Wall Street Journal, Bloomberg, Forbes, Fortune, Thomson Reuters, and the South China Morning Post, for unimpeachable blockchain intelligence.

Here's just a selection of our blockchain intelligence that created news:

Bloomberg

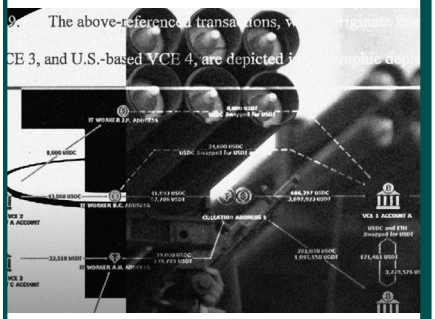
Binance Acknowledges Past Flaws in Maintaining Stablecoin Backing

- Blockchain analyst Reiter had flagged gaps in Binance-peg BUSD
- Binance says earlier 'operational delays' have now been fixed

Forbes

Did Digital Currency Group Profit From $60 million In North Korea Crypto Money Laundering?

THE WALL STREET JOURNAL.



From Hamas to North Korean Nukes, Cryptocurrency Tether Keeps Showing Up

Tether has allegedly been used by Hamas, drug dealers, North Korea and sanctioned Russians

THE WALL STREET JOURNAL.

The Shadow Dollar That's Fueling the Financial Underworld

Cryptocurrency Tether enables a parallel economy that operates beyond the reach of U.S. law enforcement

Bloomberg

Stablecoin Operator Moves $1 Billion in Reserves to Bahamas

- Move reflects worsening US banking conditions for crypto firms
- TrueUSD's circulation has more than doubled in the last month

South China Morning Post

How crypto investigators uncover scammers' blockchain billions, scale of money laundering in Asia

info@chainargos.com

Who uses blockchain intelligence?

Finance and Banking

Compliance

Law Enforcement

Regulators and Policymakers

Finance and Banking

Assess the risks and opportunities in crypto-assets, stablecoins, and decentralized finance. Develop innovative products, explore tokenization opportunities, and generate new revenue streams.

Compliance

Fight money laundering, expand know-your-customer tools, and combat the financing of terrorism while expanding your customer base. Manage risk from customer crypto-assets and confidently verify sources of crypto-asset wealth.

Law Enforcement

Terrorists and criminals are using blockchain technology to avoid the banking system, launder money, and fund operations. Blockchain wallet analysis and transaction tracing fights crime, prosecutes criminals, and tracks illicit fund flows.

Regulators and Policymakers

Develop and implement effective crypto-asset and stablecoin supervisory, licensing tax, compliance, and regulatory frameworks to foster innovation, while managing threats to national security and the financial system.

How are we different?

We deliver actionable blockchain intelligence.

Say “no” to pseudo-science and “yes” to blockchain intelligence you can count on for commerce, compliance, and crime-fighting.

ChainArgos is built by finance, legal, and technology professionals to deliver actionable blockchain intelligence focused on financially-relevant analysis.

Whether you’re looking to on-board a customer, determine source of wealth, or ensure your evidence isn’t rejected on appeal, our blockchain intelligence is based on established principles of statistics, math, and forensic science.

Extreme Versatility

Create compliance and commercially-driven analysis in a single place and arrive at better business decisions faster.

No-Code Customization

Build any query or analysis without programming skills or coding.

Financially-Relevant

Standard financial measures combined with blockchain intelligence for actionable insight.

Data Integrity

ChainArgos runs its own blockchain nodes, and we never enrich our data with yours, so you can be sure of data integrity.

API Ready

Robust and resilient APIs with 99.99% uptime. Minimal code required for easy integration.

Automated Alerts

Schedule automated alerts and reports via Email, Webhook, Amazon S3 and SFTP so you’re always in the know when something happens.

info@chainargos.com

How do we do it?

Blockchain intelligence is a relatively new industry, and it's not uncommon to hear of methods which have little basis in finance, let alone forensic science.

Let's look at one example to understand the limitations of blockchain tracing.

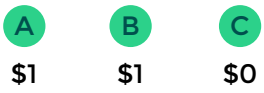


Fig. 1

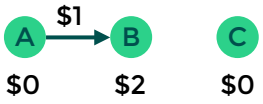


Fig. 2

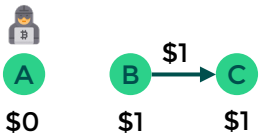


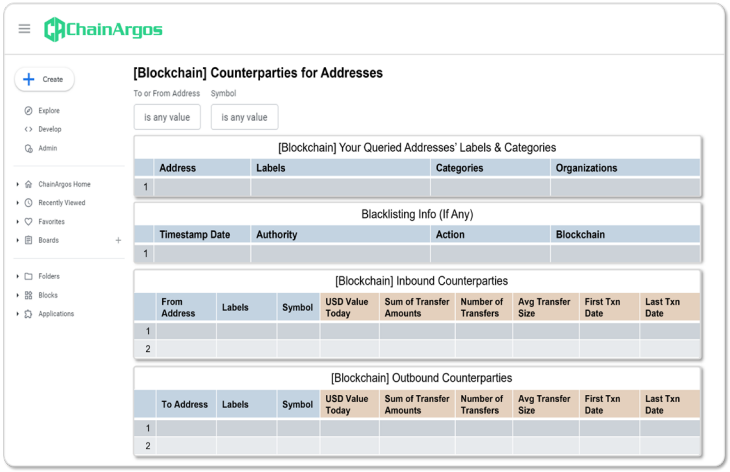
Fig. 3

In Fig. 1, A and B start with $1, while C starts with $0. In Fig. 2, A transfers their $1 to B who now has $2. Finally, in Fig. 3, B transfers $1 to C, who now has $1.

If it turns out A is an illicit actor, with what degree of confidence can we say that C has received $1 from illicit sources? 50-50?

Would you accept a "risk score" of 50%?

Follow the money.



Instead of passing off "risk scores" as "risk management" ChainArgos helps you follow the money.

Most blockchain transactions don't derive from a single source, and believing they do is what leads to poor outcomes.

Make better decisions by focusing on what matters - where the money went, where it came from, and where does it look like it's headed to?

How much does one address deal with another? What's the average transaction size? What's the frequency? What's the crypto-asset or stablecoin of choice? What's the transaction behavior? When did the transaction size change?

And so much more.

info@chainargos.com

Better attribution.

Don't risk critical legal, trading, and compliance decisions to questionable or subjective attribution methods. Trust math and science.

ChainArgos is the only blockchain intelligence firm that delivers programmatic address labels and wallet tags that are unassailable whether you're making business decisions or preparing to sue someone.

Blockchain addresses are automatically ranked and labeled based on a variety of factors including:

- **Transaction Count**: the number of transactions by an address. Sending $100,000 in one transaction may have very different implications from sending 10 transactions of $10,000 each. Either way, you'll know the difference.
- **Lifetime Sent/Received**: lists the biggest sender and/or receiver of any given crypto-asset or stablecoin currently. Markets are extremely dynamic. The biggest movers today may not be the same tomorrow.
- **Max. Historical / Current Balances**: helps you decide whether an address is participating in affiliated crypto-assets and/or stablecoins based on their maximum historical balance and who's stocking the highest current balances.
- **Recipient Number**: gives you a sense of whether they were an early adopter, or even possibly an insider of a crypto-asset or stablecoin. Recipients are ranked according to the date and time they received a crypto-asset or stablecoin.

Say "no" to dodgy wallet tagging and "yes" to attribution you can trust.

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