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SUBMISSION COVER SHEET

***IMPORTANT*: Check box if Confidential Treatment is requested** ☐

Registered Entity Identifier Code (optional): 22-287 (1 of 2)

Organization: Chicago Mercantile Exchange Inc. ("CME")

Filing as a: ☒ **DCM** ☐ **SEF** ☐ **DCO** ☐ **SDR**

Please note - only ONE choice allowed.

Filing Date (mm/dd/yy): 08/12/22 Filing Description: Initial Listing of the Bitcoin Euro Futures and Ether Euro Futures Contracts

SPECIFY FILING TYPE

Please note only ONE choice allowed per Submission.

Organization Rules and Rule Amendments

☐	Certification	§ 40.6(a)
☐	Approval	§ 40.5(a)
☐	Notification	§ 40.6(d)
☐	Advance Notice of SIDCO Rule Change	§ 40.10(a)
☐	SIDCO Emergency Rule Change	§ 40.10(h)

Rule Numbers:

New Product **Please note only ONE product per Submission.**

☒	Certification	§ 40.2(a)
☐	Certification Security Futures	§ 41.23(a)
☐	Certification Swap Class	§ 40.2(d)
☐	Approval	§ 40.3(a)
☐	Approval Security Futures	§ 41.23(b)
☐	Novel Derivative Product Notification	§ 40.12(a)
☐	Swap Submission	§ 39.5

Official Product Name: Bitcoin Euro Futures, Ether Euro Futures

Product Terms and Conditions (product related Rules and Rule Amendments)

☐	Certification	§ 40.6(a)
☐	Certification Made Available to Trade Determination	§ 40.6(a)
☐	Certification Security Futures	§ 41.24(a)
☐	Delisting (No Open Interest)	§ 40.6(a)
☐	Approval	§ 40.5(a)
☐	Approval Made Available to Trade Determination	§ 40.5(a)
☐	Approval Security Futures	§ 41.24(c)
☐	Approval Amendments to enumerated agricultural products	§ 40.4(a), § 40.5(a)
☐	"Non-Material Agricultural Rule Change"	§ 40.4(b)(5)
☐	Notification	§ 40.6(d)

Official Name(s) of Product(s) Affected:

Rule Numbers:

Christopher Bowen
Managing Director and Chief Regulatory Counsel
Legal Department

August 12, 2022

VIA ELECTRONIC PORTAL

Mr. Christopher J. Kirkpatrick
Office of the Secretariat
Commodity Futures Trading Commission
Three Lafayette Centre
1155 21st Street, N.W.
Washington, DC 20581

Re: CFTC Regulation 40.2(a) Certification. Initial Listing of the Bitcoin Euro Futures and Ether Euro Futures Contracts.
CME Submission No. 22-287 (1 of 2)

Dear Mr. Kirkpatrick:

Chicago Mercantile Exchange Inc. ("CME" or "Exchange") hereby certifies to the Commodity Futures Trading Commission ("CFTC" or "Commission") the initial listing of the Bitcoin Euro Futures and Ether Euro Futures contracts (the "Contracts"), for trading on the CME Globex electronic trading platform ("CME Globex") and for submission for clearing via CME ClearPort effective on Sunday, August 28, 2022, for trade date Monday, August 29, 2022, as set forth below.

Contract Title	Commodity Code	Rulebook Chapter
Bitcoin Euro Futures	BTE	450
Ether Euro Futures	ETE	449

The underlying reference rates are the CME CF Bitcoin-Euro Reference Rate ("BTCEUR_RR") and the CME CF Ether-Euro Reference Rate ("ETHEUR_RR") (the "Euro Reference Rates"). The Euro Reference Rates are a once-a-day reference rate of the Euro price of bitcoin or ether. They represent the aggregate executed trade flow on major cryptocurrency spot exchanges during a specific calculation window; 3:00 p.m. - 4:00 p.m. London time.

The Euro Reference Rates are calculated and administered by CF Benchmarks Ltd ("CF Benchmarks"), a benchmark administrator registered with the European Securities and Markets Authority ("ESMA") in accordance with Article 34 of the EU Benchmarks Regulation and pursuant to the regulatory supervision of the UK Financial Conduct Authority.

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Section 1 - Contract Specifications

Contract Title	Bitcoin Euro Futures	Ether Euro Futures
Rulebook Chapter	CME 450	CME 449
CME Globex and CME ClearPort Code	BTE	ETE
Contract Size	5 bitcoin	50 ether
Trading Unit	The unit of trading shall be 5 bitcoin, as defined by the CME CF Bitcoin-Euro Reference Rate (BTCEUR_RR).	The unit of trading shall be 50 ether, as defined by the CME CF Ether-Euro Reference Rate (ETHEUR_RR).
Trading and Clearing Hours	**CME Globex Pre-Open:** 4:45 p.m. CT – 5:00 p.m. CT **CME Globex:** Sunday - Friday 5:00 p.m. - 4:00 p.m. CT (6:00 p.m. - 5:00 p.m. ET) with a 60-minute break each day beginning at 4:00 p.m. CT (5:00 p.m. ET) **CME ClearPort:** Sunday 5:00 p.m. - Friday 5:45 p.m. CT (6:00 p.m. – 6:45 p.m. ET) with no reporting Monday - Thursday 5:45 p.m. – 6:00 p.m. CT (6:45 p.m. – 7:00 p.m. ET)	
Settlement Method	Financial	
Listing Schedule	Monthly contracts listed for six (6) consecutive months, quarterly contracts (Mar, Jun, Sep, Dec) listed for four (4) additional quarters and a second Dec contract if only one is listed.	
Initial Listing Schedule	Sep-22, Oct-22, Nov-22, Dec-22, Jan-23, Feb-23, Mar-23, Jun-23, Sep-23, Dec-23	
Price Basis	Prices are quoted and traded in Euros	
Minimum Price Fluctuation	Outright: 5.00 index points per bitcoin = €25.00 per contract Calendar spread: 1.00 index points per bitcoin = €5.00 per contract	Outright: 0.50 index points per ether = €25.00 per contract Calendar spread: 0.05 index points per ether = €2.50 per contract
Termination of Trading	Last Day of Trading is the last Friday of the contract delivery month. Trading terminates at 4:00 p.m. London time on the last Friday of the contract month. If that day is not a business day in both the U.K. and the U.S., trading shall terminate on the preceding day that is a business day for both the U.K. and the U.S.	
Final Settlement	Delivery is by cash settlement by reference to the Final Settlement Price, equal to the CME CF Bitcoin-Euro Reference Rate on the Last Day of Trading.	Delivery is by cash settlement by reference to the Final Settlement Price, equal to the CME CF Ether-Euro Reference Rate on the Last Day of Trading.
Position Limits and Reportable Levels	Spot Position Limits are aggregated with Bitcoin Futures (BTC) Spot month limit 4,000 BTC contracts effective first trading day of the expiring contract month, reducing to 2, 000 BTC contracts three business days prior to expiration.	Spot Position Limits are aggregated with Ether Futures (ETH) Spot month limit 8,000 ETH contracts effective first trading day of the expiring contract month.

	Position accountability level of 5,000 BTC contracts shall be applied to positions in single months outside the spot month and in all months combined. The reportable level: 1 Bitcoin Euro futures contract.	Position accountability level of 20,000 ETH contracts shall be applied to positions in single months outside the spot month and in all months combined. The reportable level: 1 Ether Euro futures contract.
Block Trade Minimum Threshold	5 contracts reportable window: RTH 5 minutes; ETH/ATH 15 minutes	
CME Globex Matching Algorithm	F: First In First Out (FIFO)	

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Section 2 – Index Administration, Governance, and Methodology

1. Bitcoin Euro Futures

Cash Market Overview

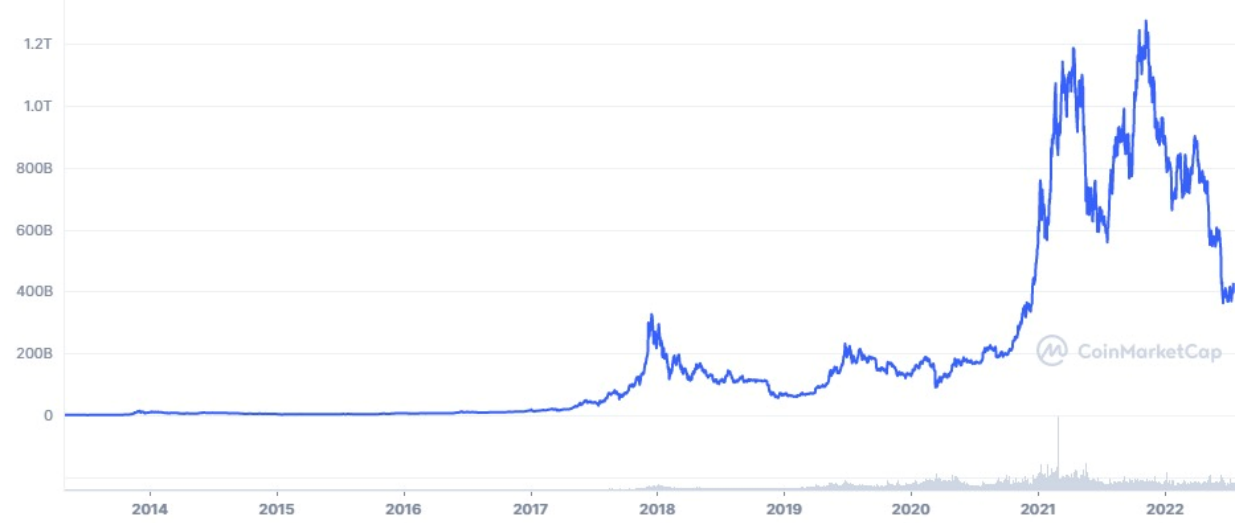
Bitcoin is a decentralized open source blockchain and digital currency that allows for secure peer-to-peer transactions on the internet.

Bitcoin was created by Satoshi Nakamoto, a pseudonymous person or team who outlined the technology in a 2008 white paper. The bitcoin network went live in 2009. Every transaction involving Bitcoin is tracked on the Bitcoin blockchain ledger which is public and permissionless. Unlike a bank's ledger, the Bitcoin blockchain is distributed across the entire network. No company, country, or third party is in control of it; and anyone can become part of that network.

The network's native cryptocurrency token is bitcoin (BTC). According to Coinmarketcap.com (https://coinmarketcap.com/), the market cap for all digital assets is over $1T. Bitcoin is the largest cryptocurrency by market capitalization, estimated to be $429B[1] as of July 18, 2022. BTC can be traded for other cryptocurrencies or other sovereign currencies.

The 24-hour trading volume in bitcoin is $48B as of July 18, 2022. Bitcoin is actively traded across approximately 400 spot exchanges and other execution platforms that offer leveraged exposure. The value of a single bitcoin reached an all-time high of $68,789.63 on November 10, 2021, the current price is around $22,000 as of July 18, 2022.

Bitcoin Market Capitalization



Source: coinmarketcap.com

[1] Source: https://coinmarketcap.com/currencies/bitcoin/

Bitcoin Price History

Source: CoinMarketCap.com

In terms of market dominance, bitcoin is consistently the dominant cryptocurrency, as demonstrated below.

Bitcoin's Percentage of Total Market Capitalization (Dominance)

Source: CoinMarketCap.com

Total Supply

The bitcoin protocol defines, in advance, how the currency will be created and at what rate. Upon release of bitcoin in 2009, Satoshi Nakamoto coded the theoretical maximum number of coins that will ever be minted, as 21 million. The supply of new bitcoins is designed to grow toward a ceiling of 21 million units. However, not all 21 million coins are currently in circulation.

Bitcoin Mining and Blocks

Bitcoin mining is the process by which new bitcoin enter circulation. Miners are individuals or groups who work to secure the network by verifying transactions and adding them to a public leger; the bitcoin blockchain, in blocks. A block contains details of all the transactions that have been transacted within a given timeframe. Blocks form a chain by referring to the hash (or fingerprint) of the previous block.

Mining requires specialist equipment and consumes a lot of energy. The miners are an important part of preserving the blockchain ledgers. The miner that first finds the newest block is rewarded with new bitcoin for their work. Miners also take transaction fees paid by parties sending bitcoin.

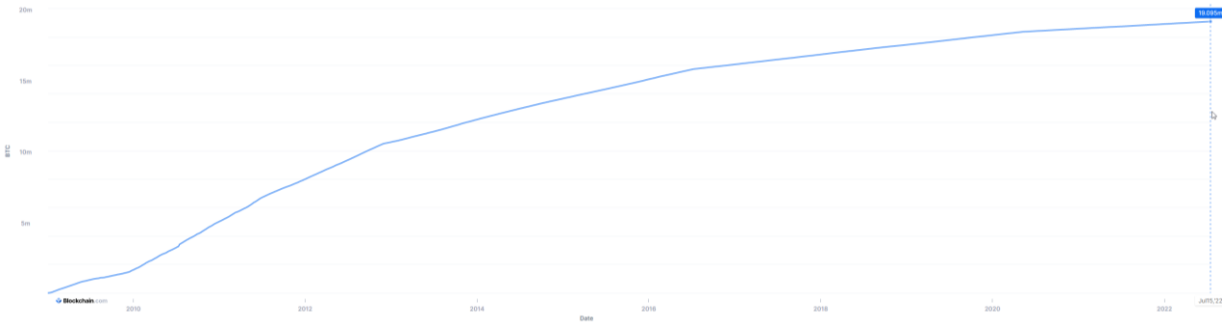
The bitcoin code is designed to create a new block every ten minutes. As such the number of bitcoin in existence increases about every 10 minutes when new blocks are mined and added to the bitcoin blockchain. The bitcoin protocol defines how many bitcoin are released each time a miner discovers a new block. At the current mining rate each new block adds 6.25 bitcoin into circulation, which is approximately 900 bitcoin per day.

Initially, the block reward was set to 50 bitcoin per solved block. The protocol states that the number of bitcoin created per block, i.e., the mining reward, will decrease geometrically. This system is in place to systematically reduce the rate at which new bitcoin are issued into circulation. This gradual systematic process will see a 50% reduction every 210,000 blocks, or approximately every four years, until all the 21 million units of bitcoin have been created, which will happen in 2140.

Bitcoin in Circulation

As of July 15, 2022, 19.095 million coins have been mined. This represents circa 91%[2] of all the bitcoin total supply originally set.

Bitcoin in Circulation



Source: www.blockchain.com/en/charts/total-bitcoins.

[2] https://www.blockchain.com/en/charts/total-bitcoins

As designed, the percent growth of mined bitcoin has slowed since inception and will eventually end when all 21 million bitcoin have been mined.

Bitcoin in Circulation at the end of each calendar year

Year	Total Bitcoin in Circulation at EOY	Total Percent Increase
2009	1,606,100	-
2010	5,020,850	213%
2011	8,001,050	59%
2012	10,607,400	33%
2013	12,197,825	15%
2014	13,661,825	12%
2015	15,024,750	10%
2016	16,073,788	7%
2017	16,769,750	4%
2018	17,452,025	4%
2019	18,128,388	4%
2020	18,584,056	3%
2021	18,915,344	2%
ytd 2022	19,094,588	1%

Source: www.blockchain.com/en/charts/total-bitcoins. YTD is through 18 July 2022

The theoretical total supply of bitcoin, however, is not the total circulating supply. The total circulating supply is lower than the theoretical total supply due to accidental loss, willful destruction, and technical peculiarities.

From the total supply of 19.095 million bitcoin, one must discount for unrecoverable bitcoin that are burned (bitcoin that will never be spent - for example, if the bitcoin were sent to a public address without any party knowing or having a way to compute the private key, the bitcoin associated with that key are considered "burned."); permanently withdrawn from circulation or lost. There is no consensus on the number to be deducted, but best estimates indicate there to be about a 20% total loss. This would produce an estimate of 15.28 million bitcoin as circulating supply (equal to 19.095 million x 0.80).

Deliverable Supply

In theory, all 15.28 million units extant may be considered as notional deliverable supply of contract-grade commodity. A prudentially conservative estimate, however, would acknowledge that bitcoin is traded in multiple currency denominations, including USD and EUR.

For illustration, consider that during the six months ending July 1, 2022, around 85% of fiat bitcoin transaction volume was in the BTC:USD currency pair, and 7% of fiat bitcoin transaction volume was in the BTC:EUR currency pair[3]. Using 90%, as a conservative combined USD and EUR market share as a as a proxy for the share of outstanding bitcoin that stands as notional contract-grade supply for Bitcoin Futures, it would produce an estimate of 13.75 million bitcoin (equal to 15.28 million x 0.90) as the 'money stock' notionally eligible for delivery in fulfilment of expiring contracts. The following analysis uses this estimate.

The CME Bitcoin Euro futures contract shall have a contract size of 5 bitcoin. By the standards applicable to agricultural or other commodity futures for physical delivery (i.e., 17 CFR 150.5(b)(1)), the position limit would be set at or below 25 percent of estimated spot month deliverable supply. Under current bitcoin market

3 Source: http://data.bitcoinity.org/markets/volume/60d and www.coinmarketcap.com

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conditions, the resultant maximum position limit would be 3.43 million bitcoin, or 687,600 contracts ((equal to 13.75 million bitcoin x 0.25) / (5 bitcoin per contract)).

An alternative approach is based on the standard that the Exchange has typically applied to foreign exchange futures products, according to which the position limit is set at or below one percent of the money stock in the contract-grade currency denomination. Applied to the estimated bitcoin 'money stock', the result would be a position limit of 137,520 bitcoin, or 27,504 contracts ((equal to (13.75 million bitcoin x 0.01) / (5 bitcoin per contract)) or less.

Position Limits

In its initial certification of the CME Bitcoin Futures contract (Commodity Code: BTC) product rules to the CFTC in December 2017, the Exchange recommended a spot-month position limit of 1,000 BTC contracts.[4] This spot-month position limit was increased to 2,000 BTC contracts in January 2019, and subsequently in 2021, when the Spot Month Limit was increased to 4,000 BTC contracts effective on the first trading day of the expiring contract month, reducing to 2,000 BTC contracts effective on the close of trading three (3) business days prior to expiration.

The position limit will be applicable in aggregate to Bitcoin Futures, Options on Bitcoin Futures, Micro Bitcoin Futures, Options on Micro Bitcoin Futures and Bitcoin Euro Futures.

Viewed in the context of the preceding cash market overview and to align with the Bitcoin Futures contract, the aggregated Spot Month Position Limit shall be 4,000 BTC contracts effective on the first trading day of the expiring contract month, reducing to 2,000 BTC contracts effective on the close of trading three (3) business days prior to expiration.

The recommended quantity is sufficiently stringent that it would be highly unlikely to motivate attempted manipulation of the benchmark in connection with Contract final settlement and is significantly below the standard 25% 'money stock' analysis of deliverable supply test.

The Bitcoin Euro Futures contract shall share the Accountability Level with the Bitcoin Futures contract. The Single Month Accountability Level and All Month Accountability Level shall be 5,000 BTC contracts. Additionally, to allow for increased transparency and more effective market surveillance, a reportable position level of one (1) Bitcoin Euro contract is recommended.

[4] CME - Initial Listing of the Bitcoin Futures Contract - https://www.cmegroup.com/content/dam/cmegroup/market-regulation/rule-filings/2017/12/17-417S.pdf

2. Ether Euro Futures

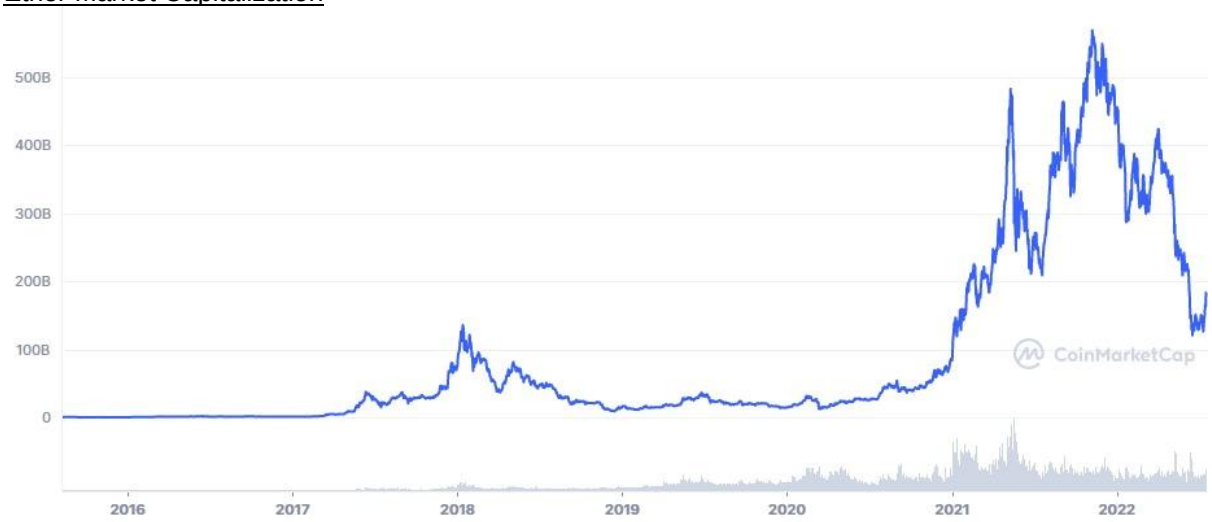
Cash Market Overview

Vitalik Buterin founded Ethereum as a concept in a White Paper[5] in late 2013. Since then, the development of Ethereum has been managed by a community of developers. A crowd sale to fund development took place in July 2014, and the blockchain went live on 30 July 2015.

Ethereum is a decentralized open source blockchain featuring smart contract functionality. The main Ethereum network is public and permissionless. Anyone can download or write software to connect to the network and start creating transactions and smart contracts without needing permission from any organization.

Ethereum's inbuilt native token is called ether (ETH). It can be traded for other cryptocurrencies or other sovereign currencies, just like bitcoin (BTC). According to Coinmarketcap.com (https://coinmarketcap.com/), Ether's market capitalization is estimated to be $191.9B[6] as of July 18, 2022. It is the second-largest cryptocurrency by market capitalization, behind bitcoin.

Ether Market Capitalization



Source: coinmarketcap.com

The 24-hour trading volume in ether is $27B compared with $40B in bitcoin as of July 18, 2022. Many alt-coins are based on the Ethereum network, which brings liquidity into the network's native cryptocurrency. Ether is actively traded across approximately 400 spot exchanges and other execution platforms that offer leveraged exposure. The value of a single ether steadily climbed to an all-time high of $4,891.70 on November 16, 2021, the current price of July 18, 2022 is approximately $1,500.

[5] Source: https://ethereum.org/en/whitepaper/

[6] Source: https://coinmarketcap.com/currencies/ethereum/

Ether's Price History

Source: coinmarketcap.com

Total Supply

Ethereum has its own blockchain, which contains blocks of data pertaining to transactions on the Ethereum network. A block contains details of all the transactions and smart contracts that have been transacted within a given timeframe. Blocks form a chain by referring to the hash (or fingerprint) of the previous block.

The biggest difference between ether and bitcoin are the rules around token generation. For Bitcoin, there will be a maximum supply of 21 million coins. According to the protocol, future ETH generation will be capped at 25% of the pre-mine (defined below), per year. This is to say that there is a maximum growth rate of 18 million ether which can be mined per year. There is no upper cap or limit. Theoretically the maximum is infinite.

Ether token generation

New units of ether are created through mining. Mining is the process of confirming transactions, combining them into blocks and adding them to the blockchain. As a reward, and to keep miners incentivized, every time a block is completed, the miner responsible for creating that block receives a reward in the form of new ether. Miners compete to earn newly issued tokens known as the block reward.

Ether in Circulation

The total number of ETH in existence can be calculated as:
Pre-mine + Block rewards + Uncle rewards + Uncle referencing rewards + Eth2 staking rewards

Pre-mine

Around 72 million ETH were issued for the genesis block – the first ever block of the Ethereum blockchain. 60 million ETH were allocated to the initial contributors in the 2014 crowd sale that funded the project, and 20% or 12 million ETH were given to the development fund and the Ethereum Foundation.

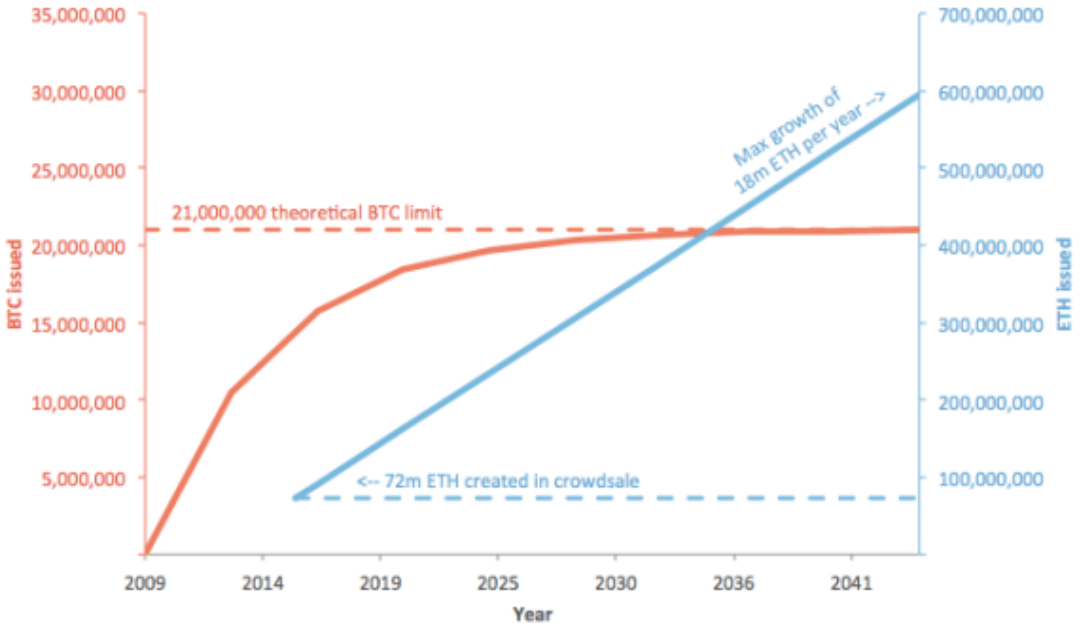
Block reward

In Ethereum the time between blocks is around 14 seconds, compared with bitcoin's ~10 minutes.

The original block reward in 2015 was 5 ETH per block, which later went down to 3 ETH in late 2017. As of 2019, when a block is successfully mined on the Ethereum blockchain, a miner receives 2 ETH as a reward. Over time, as more and more ETH are mined, the constant amount mined becomes a smaller and smaller portion of the total amount of existing ETH. The percentage mined of the total existing amount tends to 0% over time, asymptotically, never actually reaching 0%. Therefore, mining will never tail off. A constant amount of ETH will be mined forever. The chart below shows the Bitcoin and Ethereum generation models.

Additionally, an equilibrium will eventually be reached when the rate of ETH lost due to carelessness, destruction, etc. equals the rate of new ETH mined.

BTC vs ETH generation model



Source: https://bitsonblocks.net/2016/10/02/gentle-introduction-ethereum/

Uncle reward
Ethereum's rate of block generation is much higher than that of Bitcoin. When more blocks get created more quickly, the rate of "block clashes" increases – i.e., multiple valid blocks can get created at almost the same time, but only one of them can make it into the main chain.

In bitcoin these blocks, that are mined a little late and don't form part of the main blockchain are called 'orphans' and are entirely discarded. However, with Ethereum they are called 'uncles' and can be referenced by later blocks. This is called the uncle reward.

Uncle referencing reward
A miner who references an uncle also gets a fraction of ETH per uncle.

Gas Reward
The blocks are created or mined by some participants and distributed to other participants who validate them. When a user sends ether or uses an Ethereum application, a small fee in ETH is charged to use the Ethereum network. In addition to block rewards for mining new ether tokens, the miner also receives a fee as an incentive to process and verify what the user doing. Miners are like the record-keepers of Ethereum – they check and assure the validity of the transaction and keep the Ethereum network secure and free of centralized control.

In Bitcoin, the maximum block size is specified in bytes whereas Ethereum's block size is based on complexity of contracts being run – it's known as a Gas limit per block, and the maximum can vary slightly from block to block.

Future Developments

Ethereum currently has Proof-of-Work (PoW) mining. Ethereum is moving to a consensus mechanism called proof-of-stake (PoS). This change has been on Ethereum's roadmap, as a plan to move from the electricity-expensive PoW mining to a more energy-efficient PoS protocol as part of the Eth2 upgrades.

Eth2 refers to a set of interconnected upgrades that will make Ethereum more scalable, more secure, and more sustainable. These upgrades are being built by multiple teams from across the Ethereum ecosystem.

Proof-of-stake is the underlying mechanism that activates validators upon receipt of enough stake. For Ethereum, users will need to stake 32 ETH to become a validator. Validators are chosen at random to create blocks and are responsible for checking and confirming blocks they do not create.

Unlike proof-of-work, validators do not need to use significant amounts of computational power because they are selected at random and are not competing.

Validators do not mine blocks; they just need to create blocks when chosen and validate or attest proposed blocks when they are not. Validators get rewards for proposing new blocks and for attesting to ones they've seen.

A user's stake is also used to incentivize good validator behavior. For example, a user can lose a portion of their stake for things like going offline (failing to validate) or their entire stake for deliberate collusion.

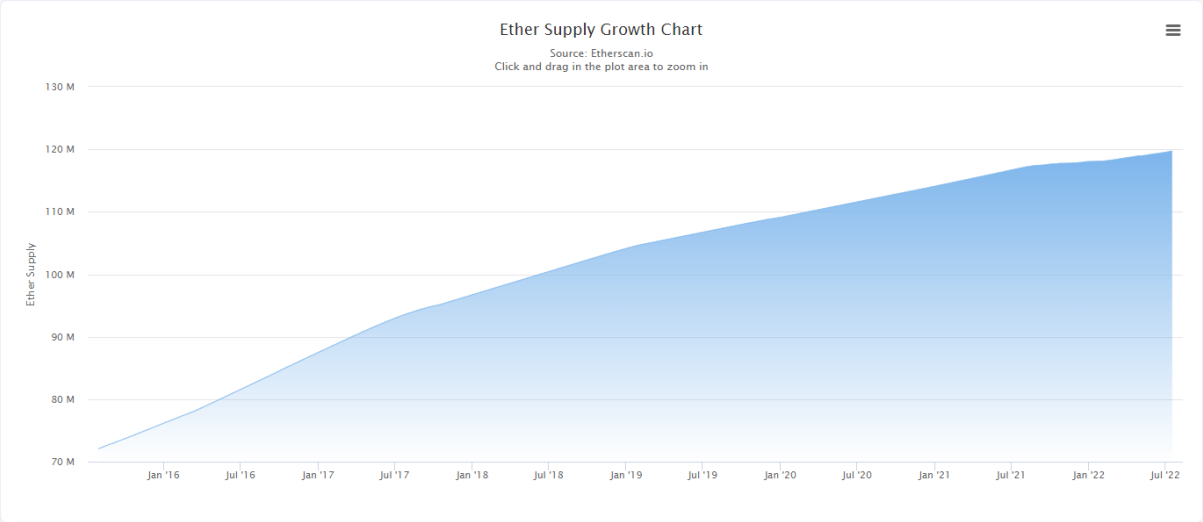
With any changes to Ethereum, such as the transition to PoS, the generation rate is guaranteed to not increase. But it may decrease.

Ether in Circulation

Currently there are 119.73 million ether in circulation. 72 million of which were issued in the genesis block. The remaining amount has been generated in the form of block rewards to the miners on the Ethereum network.

The chart below shows the ether supply growth– a breakdown of daily block reward, uncle inclusion reward, uncle reward and Eth2 staking to arrive at the total daily Ether supply.

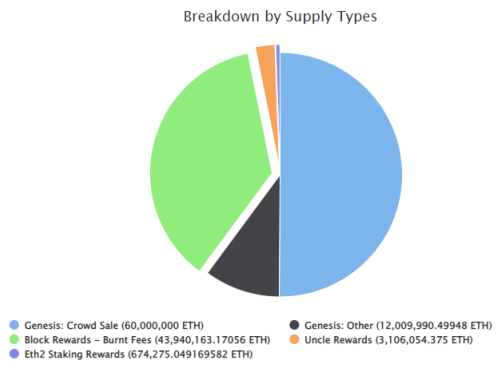
Ether Supply Growth Chart



Source: etherscan.io

Ether Supply Distribution

Ether Distribution Overview	
Genesis (60M Crowdsale 12M Other):	72,009,990.50 Ether
+ Mining Block Rewards:	46,483,441.91 Ether
+ Mining Uncle Rewards:	3,106,054.38 Ether
+ Eth2 Staking Rewards:	674,275.05 Ether
- Burnt Fees:	2,543,278.74 Ether
= **Current Total Supply**	**119,730,483.09 Ether**



Source: etherscan.io

The table and pie chart above, shows the distribution of ether from reward of both block and uncle block mining to arrive at the current total ether supply of 119.73 million.

Since inception in 2015, the chart below shows the actual number of ether tokens that were generated and therefore in circulation, at the end of each year, on an annual basis since inception.

Annual ether generated at the end of each calendar year

Year	Total Ether in Circulation at EOY	Total Percent Increase
2015	76,140,218	-
2016	87,462,107	15%
2017	96,692,242	11%
2018	104,124,058	8%
2019	109,094,019	5%
2020	114,078,849	5%
2021	118,039,550	3%
ytd 2022	119,745,549	1%

Source: etherscan.io. YTD is through 18 July 2022

The total circulating supply of ETH is not the total spendable supply. The total spendable supply is lower than the total circulating supply, due to accidental loss, willful destruction, and technical peculiarities.

From the total circulating supply of 119.73 million ether, one must discount for unrecoverable ether that are burned; permanently withdrawn from circulation or lost. There is no consensus on the number to be deducted, but best estimates indicate there to be about a 20% total loss. This would produce an estimate of 95.78 million ether as circulating supply (equal to 119.73 million x 0.80).

Deliverable Supply

In theory, all 95.78 million units extant may be considered as notional deliverable supply of contract-grade commodity. A prudentially conservative estimate, however, would acknowledge that ether is traded in multiple currency denominations, including USD and EUR.

For illustration, consider that during the six months ending July 1, 2022, approximately 86% of fiat ether transaction volume was in the ETH:USD currency pair, and 8% of fiat ether transaction volume was in the ETH:EUR currency pair.[7] Using 90%, as a conservative combined USD and EUR market share as a proxy for the share of outstanding ether that stands as notional contract-grade supply for Ether Futures, it would produce an estimate of 86.20 million ether (equal to 95.78 million x 0.90) as the 'money stock' notionally eligible for delivery in fulfilment of expiring Contracts. The following analysis uses this estimate.

The CME Ether Euro Futures contract shall have a contract size of 50 ether. By the standards applicable to agricultural or other commodity futures for physical delivery (i.e., 17 CFR 150.5(b)(1)), the position limit would be set at or below 25 percent of estimated spot month deliverable supply. Under current ether market conditions, the resultant maximum position limit would be 21.55 million ether, or 431,010 contracts ((equal to 86.20 million ether x 0.25) / (50 ether per contract)).

An alternative based on the standard that the Exchange has typically applied to foreign exchange futures products, according to which the position limit is set at or below one percent of the money stock in the contract-grade currency denomination. Applied to the estimated ether 'money stock', the result would be a position limit of 862,020 ether or 17,240 contracts ((equal to (86.20 million ether x 0.01) / (50 ether per contract)) or less.

[7] Source: www.coinmarketcap.com

Position Limits

In its initial certification of CME Ether Futures contract (Commodity Code: ETH) product rules to the CFTC in February 2021, the Exchange recommended a spot-month position limit of 8,000 ETH contracts.[8]

The position limit will be applicable in aggregate to Ether Futures, Micro Ether Futures, Options on Micro Ether futures and Ether Euro Futures.

Viewed in the context of the preceding cash market overview and to align with the Ether Futures contract, the aggregated Spot Month Position Limit shall be 8,000 ETH contracts effective on the first trading day of the expiring contract month

The recommended quantity is sufficiently stringent that it would be highly unlikely to motivate attempted manipulation of the benchmark in connection with Contract final settlement and is significantly below the standard 25% 'money stock' analysis of deliverable supply test.

The Ether Euro Futures contract shall share the Accountability Level with the Ether Futures contract. The Single Month Accountability Level and All Month Accountability Level shall be 20,000 ETH contracts. Additionally, to allow for increased transparency and more effective market surveillance, a reportable position level of one (1) Ether Euro contracts is recommended.

[8] CME - Initial Listing of the Ether Futures Contract - https://www.cmegroup.com/market-regulation/rule-filings/2021/1/21-005.pdf

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Section 3. Analysis CME CF Euro Reference Rates

Overview

CME's Bitcoin Euro Futures contract's final settlement is determined by reference to the CME CF Bitcoin-Euro Reference Rate (BTCEUR_RR) and CME's Ether Euro Futures contract's final settlement is determined by reference to the CME CF Ether-Euro Reference Rate (ETHEUR_RR). The Euro Reference Rates are calculated and administered by CF Benchmarks and use the same methodology that is used in the Bitcoin Reference Rate (BRR) to determine the final settlement price for CME's standard Bitcoin Futures contract but denominated in Euro rather than U.S Dollars.

Governance

The Euro Reference Rates are calculated and administrated by CF Benchmarks, a leading provider of cryptocurrency benchmarks and indices. CF Benchmarks is registered with the European Securities and Markets Authority ("ESMA") as a benchmark administrator in accordance with Article 34 of the EU Benchmark Regulation and under the regulatory supervision of the UK Financial Conduct Authority. The CME CF Benchmark Statement, which provides additional details on regulatory compliance requirements, is available on the CF Benchmarks website.[9]

Furthermore, an Oversight Committee is responsible for overseeing certain activities undertaken in connection with the Reference Rates by approving and regularly reviewing the calculation methodology, practice, standards, and definition of the reference rates to ensure it remains relevant and robust. Currently there are seven (7) members of the Oversight Committee. The Oversight Committee is comprised of a (1) CF Benchmarks representative, two (2) representatives from CME Group, and at least two (2) independent experts. The Oversight Committee meets at least once per quarter and publishes its minutes publicly on the CF Benchmark's website. Further details of the Oversight Committee's charter and related governance policies are available on the CF Benchmarks website.[10]

License Arrangements

There is sufficiency of data inputs for the calculation, and the data is provided under licensing arrangements with each Constituent Exchange, who in turn meet strict entry criteria.

The Exchange uses the Euro Reference Rates under the terms of a data sharing license agreement with CF Benchmarks Ltd.

Constituent Exchange Eligibility Criteria

The Euro Reference Rates are calculated from trades transacted on specific Constituent Exchanges. Specific eligibility criteria must be adhered to, in order to become a Constituent Exchange.

To assure that the CME CF Cryptocurrency Pricing Products reflect global cryptocurrency trading activity in a representative and unbiased manner, a geographically diverse set of spot trading venues is included within the current framework. Applications for new Constituent Exchanges to be added will be based on a set of predefined criteria, and the operation of existing Constituent Exchanges will be monitored against the same criteria. The Constituent Exchanges eligibility criteria is publicly available on the CF Benchmarks website.[11]

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[9] CME-CF Benchmark Statement: https://docs-cfbenchmarks.s3.amazonaws.com/CME+CF+Benchmark+Statement.pdf
[10] CME-CF Oversight Committee Charter: https://docs-cfbenchmarks.s3.amazonaws.com/CME+CF+Oversight+Committee+Charter.pdf
CME-CF Practice Standards: https://docs-cfbenchmarks.s3.amazonaws.com/CME+CF+Practice+Standards.pdf
CME-CF Conflicts of Interest Policy: https://docs-cfbenchmarks.s3.amazonaws.com/CME+CF+Conflicts+of+Interest+Policy.pdf
[11] CME-CF Constituent Exchanges Eligibility Criteria: https://docs-cfbenchmarks.s3.amazonaws.com/CME+CF+Constituent+Exchanges+Criteria.pdf

A trading venue is eligible as a Constituent Exchange in any of the CME CF Cryptocurrency Pricing Products if it facilitates spot trading of the relevant cryptocurrency against the corresponding fiat currency (the "Relevant Pair") and makes trade data and order data available through an Automatic Programming Interface ("API") with sufficient reliability, detail, and timeliness.

Furthermore, it must, in the opinion of the Oversight Committee, fulfil the below criteria:

1. The venue's Relevant Pair spot trading volume for an index must meet the minimum thresholds as detailed below for it to be admitted as a Constituent Exchange: The average daily volume the venue would have contributed during the observation window for the Reference Rate of the Relevant Pair exceeds 3% for two consecutive calendar quarters.
2. The venue has policies to ensure fair and transparent market conditions at all times and has processes in place to identify and impede illegal, unfair, or manipulative trading practices.
3. The venue does not impose undue barriers to entry or restrictions on market participants and utilizing the venue does not expose market participants to undue credit risk, operational risk, legal risk, or other risks.
4. The venue complies with applicable law and regulation, including, but not limited to capital markets regulations, money transmission regulations, client money custody regulations, know-your-client (KYC) regulations and anti-money laundering (AML) regulations.
5. The venue cooperates with inquiries and investigations of regulators and the Administrator upon request and must execute data sharing agreements with CME Group. Once admitted a Constituent Exchange must demonstrate that it continues to fulfil criteria 2 to 5 inclusive. Should the average daily contribution of a Constituent Exchange fall below 3% for any Reference Rate then the continued inclusion of the venue as a Constituent Exchange to the Relevant Pair shall be assessed by the CME CF Oversight Committee.

Currently, there are four (4) Constituent Exchanges that support bitcoin Euro and ether Euro pairs: Bitstamp, Coinbase, Kraken and LMAX as more specifically noted below. The list of current Constituent Exchanges is also available on the CF Benchmarks website.[12]

Constituent Exchanges

Constitute Exchange	CME CF Bitcoin-Euro Reference Rate	CME CF Ether-Euro Reference Rate	Date CE Added to the Euro Reference Rate
Bitstamp	✓	✓	June 6, 2022
Coinbase	✓	✓	June 6, 2022
Kraken	✓	✓	June 6, 2022
LMAX	✓	✓	June 6, 2022

Calculation Methodology

The Exchange commenced daily publication of the Euro Reference Rates in June 2022. The Exchange publishes the rates on its website at 4:00 p.m. London time 365 days per year.

The Euro Reference Rates are a daily reference rate of the Euro price of one bitcoin or ether. It is the aggregation of executed trade flow of major cryptocurrency spot exchanges that participate in the price discovery process as Constituent Exchanges during a specific one-hour calculation window (3:00 p.m. to 4:00 p.m. London time). All relevant transactions are added to a joint list, recording the trade price and size for each transaction. This one-hour window is then partitioned into twelve, five-minute intervals. For each partition, the volume-weighted median trade price is calculated from the trade prices and sizes of all relevant transactions across all Constituent Exchanges. The index is then derived from the equally weighted average of the volume-weighted medians of all partitions and published daily at 4:00 p.m. London time.

[12] CME-CF Constituent Exchanges List: https://docs-cfbenchmarks.s3.amazonaws.com/CME+CF+Constituent+Exchanges.pdf

The calculation methodology is publicly available on the CF Benchmarks website.[13]

Qualitative Description

CME CF Cryptocurrency Reference Rates are calculated based on the Relevant Transactions of all Constituent Exchanges. Calculation steps on any given Calculation Day are as follows:

1. All Relevant Transactions in the specified pair, from Constituent Exchanges are added to a joint list, recording the trade price and size for each transaction. The assessment is calculated based on one hour of trades per day from 3:00 p.m. to 4:00 p.m. London time (the "Observation Period").
2. The list is partitioned into a number of equally sized time intervals (12, 5-minute partitions).
3. For each partition separately, the volume-weighted median trade price is calculated from the trade prices and sizes of all Relevant Transactions, i.e., across all Constituent Exchanges.
4. The CME CF Cryptocurrency Reference Rate is then given by the equally weighted average of the volume-weighted medians of all partitions.

A pre-defined CF Benchmarks policy has also been established to evaluate any hard fork for its significance and impact on the index. Procedural policy details are provided in a Hard Fork Policy document on the CF Benchmark website.[14]

Methodology Design Choices

The calculation methodology mitigates to a high degree against price anomalies, while being replicable through spot trading on the Constituent Exchanges. This is achieved through several design choices around partitions, the weighting of those partitions, medians, and the volume weighting of medians. Further details on the methodology are available on the CF Benchmarks website.[15]

Overall, the Euro Reference Rates are designed to have limited susceptibility to temporary price swings and outlier prices. There are criteria for an exchange to charge a fee for trading, which eliminates wash trading to increase volumes. The calculation only includes bitcoin or ether trades executed in Euro and (1) excludes alternate currency pairs or crypto to crypto trading, (2) does not apply conversion calculations, and (3) excludes stable coin transactions.

Not Readily Susceptible to Manipulation

The index is not readily susceptible to manipulation due to the design of the methodology. As noted above, the use of medians reduces the effect of outlier prices on one or more Constituent Exchange. The volume-weighting of medians filters out high numbers of small trades that may otherwise control the value of a non-volume weighted median. The use of twelve (12) non-weighted partitions assures that price information is sourced equally over the entire observation period. Influencing the rate would therefore require trading activity during multiple partitions on several exchanges over an extended period, which would prove a costly and an operationally intensive undertaking. The methodology is designed to remove the reliance on any single contributing exchange, where delayed or missing data from an exchange does not cause a calculation failure. In accordance with the methodology, if for any Constituent Exchange the absolute percentage deviation of the volume-weighted median trade price in comparison with the median of the volume-weighted median trade prices of all Constituent Exchanges exceeds a given threshold (currently set at 10% and defined in the methodology), all relevant transactions of that Constituent Exchange are flagged as potentially erroneous and are disregarded in the calculation of index for that calculation day.

[13] CME-CF Reference Rate Methodology: https://docs-cfbenchmarks.s3.amazonaws.com/CME+CF+Reference+Rates+Methodology.pdf
[14] CME-CF Hard Fork Policy: https://docs-cfbenchmarks.s3.amazonaws.com/CME+CF+Hard+Fork+Policy.pdf
[15] CME-CF Reference Rate Methodology: https://docs-cfbenchmarks.s3.amazonaws.com/CME+CF+Reference+Rates+Methodology.pdf

Furthermore, for inclusion in the calculation, a Constituent Exchange's spot trading volume must meet the minimum threshold (currently, 3% relative contribution over two (2) consecutive quarters) as detailed in the methodology.

The criteria collectively causes Constituent Exchanges to deliver transparent and consistent trade and order data to CF Benchmarks via an API with sufficient reliability, detail, and timeliness.

Furthermore, the Constituent Exchanges maintain fair and transparent market conditions to impede illegal, unfair, or manipulative trading practices, and comply with applicable law and regulations including, capital markets regulations, money transmission regulations, client money custody requirements, know-your-client ("KYC") requirements, and anti-money-laundering ("AML") regulations.

The Constituent Exchanges are also required to cooperate with inquiries and investigations of the administrator (CF Benchmarks) and execute a data sharing agreement with CME.

According to coinmarketcap.com, bitcoin trades on approximately 400 spot exchanges/platforms. Bitcoin and Ether trades in Euro are transacted on approximately 10 spot exchanges.

In aggregate, the four (4) Constituent Exchanges that contribute data to the Euro Reference Rates host several thousand transactions on a daily basis and represent over 80% of bitcoin or ether to Euro transactions, making the indices a source of price discovery and transparency for the market.

Quality of Data Inputs
The Euro Reference Rates methodology adheres to rules in consideration of the following factors to ensure the robustness of the index:

- Delayed data and missing data
- Erroneous data
- Potentially erroneous data
- Calculation failure

The calculation process includes automated screening for erroneous data for non-numeric or non-positive trade price or trade size and un-parseable data.

Automated data validation checks are implemented for each Constituent Exchange individually. Such validation checks are made to ensure that the volume-weighted median trade price for one Constituent Exchange does not deviate too widely from the median of the volume-weighted median trade prices of all Constituent Exchanges. Any data that is outside of a pre-defined deviation tolerance of the other Constituent Exchanges results in the entire data set from that particular Constituent Exchange being discarded.

Volatility

Cryptocurrency prices can be highly volatile. The Exchange is adept at managing periods of prolonged volatility as well as spikes in volatility as has been demonstrated through its risk management of a variety of asset classes including commodities, agriculture, and financial products. The Exchange will implement certain risk controls on the Contracts, including special price fluctuations limits, daily price limits, and margin levels that appropriately reflect the volatility of bitcoin and ether. Though the spikes in cryptocurrency volatility can look extreme, the daily price movements of the underlying reference rates are routinely in line with other CME Group contracts and reference rates that underlie Exchange-listed contracts.

Section 4 – Customer Feedback

Demand for Euro denominated Bitcoin and Ether Futures contracts has been strong given the success of the U.S. Dollar denominated standard and micro sized contracts. Market participants have indicated that Euro denominated contracts could attract further participation.

Interest has come from crypto lending platforms, traditional, as well as, crypto-focused hedge funds, futures liquidity providers and intermediaries. Such parties indicate that a cash-settled, Euro denominated, standard sized contract on a regulated exchange would be a welcomed addition to the ecosystem which is currently dominated by unregulated platforms. Such contracts would allow market participants to hedge their long physical positions, allow others to gain exposure to this growing asset class and attract new participants who are not able to transact in unregulated markets.

As a result of the extensive market participant validation, the Exchange understands that Miners and institutions with accumulated bitcoin and, or ether positions could use these contracts to hedge their long exposure and would be natural sellers. Institutional and retail investors seeking to benefit from bitcoin's growing popularity and the growing interest in the Ethereum Network who may not want direct exposure to physical bitcoin or ether may seek to use the Contracts.

It is expected that professional trading companies looking to arbitrage price differences across other bitcoin exchanges will provide additional liquidity. It is also expected that crypto lending platforms, OTC desks, hedge funds and crypto-focused hedge funds will participate as both buyers and sellers of the Contracts depending on their specific trading book and market view. In general, the bitcoin market structure will be similar to other asset classes and will be comprised of hedgers, speculators, and market makers.

Interest in Euro denominated futures has also been keen from potential ETF and fund providers who have been gearing up to launch products as soon as they are approved by their regulator. Existing Europe based ETF providers cite that such Euro denominated contracts could help them better manage daily cashflows.

In the early development stages of the Contracts, the Exchange engaged a group of market participants across a multitude of customer segments including proprietary trading firms, brokers, OTC platforms, crypto lending platforms, as well as traditional and crypto-focused hedge funds. During this extensive market participant validation period, contract specifications and other details of a futures contract were deliberated and validated. The Exchange also engaged some of its clearing member firms to assess their operational readiness and assess potential impacts of the Contacts. Clearing members generally did not express concern regarding the launch of the Contracts from an operational or risk perspective. The Contracts are standard cash-settled futures and will have minimal operational impacts on clearing members. The Exchange also deliberated with clearing members who are material participants in this market. Such clearing members advised of their intent to approve trading of the Contracts on a client-by-client basis.

Subsequent to publicly announcing its intention to launch the Contracts, the Exchange has been in receipt of a significant amount of interest from market participants, inclusive of buy-side, commercials, ETF providers, and potential market makers spanning the spectrum of market segment and geographic location. Several bank and non-bank futures commission merchants ("FCMs") have indicated early support, and several have expressed commitment of trading the Contracts on the first launch date.

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Section 5 – Compliance with Core Principles

The Exchange reviewed the designated contract market core principles ("DCM Core Principles") as set forth in the Commodity Exchange Act ("CEA" or the "Act") and identified that the following DCM Core Principles may be impacted as follows:

Core Principle 2 – Compliance with Rules

Trading in the Contracts shall be subject to CME Rulebook Chapter 4, which includes prohibitions against fraudulent, noncompetitive, unfair, and abusive practices. Additionally, trading in these Contracts shall be subject to the Exchange's trade practice rules, the majority of which are contained in Chapter 5 and Chapter 8 of the Rulebook. Trading activity in these Contracts shall be subject to monitoring and surveillance by CME Group's Market Regulation Department, which has the authority to exercise its investigatory and enforcement power where potential rule violations are identified.

Core Principle 3 – Contracts Not Readily Subject to Manipulation

The Exchange certifies that the underlying reference rates, namely, the CME CF Bitcoin-Euro Reference Rate (BTCEUR_RR) and the CME CF Ether-Euro Reference Rate (ETHEUR_RR), are not readily subject to manipulation. The indexes are calculated from a large number of trades observed during the calculation window. The combination of volume weighting of medians and non-weighted partitions prevents manipulation in the reference rates. Ultimately, influencing the reference rates would require significant trading activity on several exchanges over an extended period of time.

The Euro Reference Rates are calculated and administered by CF Benchmarks (registered with the European Securities and Markets Authority as a benchmark administrator in accordance with Article 34 of the EU Benchmarks Regulation) under the regulatory supervision of the UK Financial Conduct Authority.

The Euro Reference Rates were first published on June 6, 2022 and have been calculated and published daily without exception to date. It is published daily on the CME Group website.

Core Principle 4 – Prevention of Market Disruption

Trading in the Contracts will be subject to CME Rulebook Chapters 4 and 7, which include prohibitions on manipulation, price distortion, and disruption to the expiration and assignment process. As with any new product listed for trading on a CME Group designated contract market, trading activity in the Contracts will be subject to monitoring and surveillance by CME Group's Market Regulation Department.

Core Principle 5 – Position Limits or Accountability

Positions for the Bitcoin Euro Futures contract will be aggregated with the Exchange's Bitcoin Futures contract (Commodity Code: BTC) and options thereon, Micro Bitcoin Futures contract (Commodity Code: MBT) and options thereon at the applicable ratio given the differing notional values. Uniform position limits will be applied to the contract. The aggregated Spot Month Position Limit shall be 4,000 BTC contracts effective on the first trading day of the expiring contract month and reducing to 2,000 BTC contracts effective on the close of trading three business days prior to expiration.

A position accountability level of 5,000 BTC contracts shall be applied to positions in single months outside the spot month and in all months combined.

Positions for the Ether Euro Futures contract will be aggregated with the Exchange's Ether Futures contract (Commodity Code: ETH), Micro Ether Futures contract (Commodity Code: MET) and options thereon at the applicable ratio given the differing notional values. Uniform position limits will be applied to the contract. The aggregated Spot Month Position Limit shall be 8,000 ETH contracts effective on the first trading day of the expiring contract month.

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A position accountability level of 20,000 ETH contracts shall be applied to positions in single months outside the spot month and in all months combined.

The reportable level shall be 1 Bitcoin Euro Futures contract or 1 Ether Euro Futures contract. The position limits for the Contracts are consistent with the Commission's guidance.

Core Principle 7 – Availability of General Information

The Exchange shall disseminate a Special Executive Report ("SER") that sets forth information in regard to specifications, terms, and conditions of the Contracts. The SER will also be published on the Exchange's website.

Core Principle 8 – Daily Publication of Trading Information

The Exchange shall publish trading volumes, open interest levels, and price information daily of the Contracts on the CME Group website and through quote vendors.

Core Principle 9 – Execution of Transactions

The Contracts will be listed for trading on the CME Globex electronic trading and for clearing through CME ClearPort. The CME Globex electronic trading venue provides for competitive and open execution of transactions. CME Globex affords the benefits of reliability and global connectivity.

Core Principle 10 – Trade Information

All requisite trade information shall be included in the audit trail and will suffice for the Market Regulation Department to monitor for market abuse.

Core Principle 11 – Financial Integrity of Transactions

The Contracts shall be cleared by CME Clearing, which is registered with the Commission as a derivative clearing organization, and which is subject to all CFTC regulations related thereto.

Core Principle 12 – Protection of Markets and Market Participants

Chapters 4 and 5 in the CME Rulebook set forth multiple strictures that preclude intermediaries from disadvantaging their customers. These Rules apply to trading in the Exchange's competitive trading venues and will apply to transactions in the Contracts.

Core Principle 13 – Disciplinary Procedures

Chapter 4 of the CME Rulebook provide for the Exchange to discipline, suspend, or expel members or market participants who violate the rules of the Exchange. Trading in the Contracts shall be subject to these provisions. The Exchange's Market Regulation Department has the authority to exercise its powers of enforcement, in the event that rule violations in the Contracts are identified.

Core Principle 14 – Dispute Resolution

Disputes in respect of the Contracts shall be subject to the arbitration provisions set forth in Chapter 6 of both the CME Rulebook, which allow all nonmembers to submit to arbitration claims for financial loss resulting from transactions on the Exchange. Pursuant to these provisions, any member named as a respondent in any such claim submitted by a nonmember is required to participate in arbitration proceedings. Additionally, the Exchange requires members to resolve via arbitration all disputes concerning transactions on the Exchange.

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Pursuant to Section 5c(c) of the Act and CFTC Regulation 40.2(a), the Exchange certifies that listing the Contracts complies with the Act including all regulations thereunder. There were no substantive opposing views to this proposal.

The Exchange certifies that this submission has been concurrently posted on the Exchange's website at http://www.cmegroup.com/market-regulation/rule-filings.html.

Should you have any questions concerning the above, please contact the undersigned at (212) 299-2200 or via e-mail at CMEGSubmissionInquiry@cmegroup.com.

Sincerely,

/s/ Christopher Bowen
Managing Director and Chief Regulatory Counsel

Attachments:	Appendix A	CME Rulebook Chapter 450 and 449
	Appendix B	Position Limit, Position Accountability, and Reportable Level Table in Chapter 5 of the CME Rulebook (attached under separate cover)
	Appendix C	CME Rule 588.H. – ("Globex Non-Reviewable Trading Ranges") Table
	Appendix D	CME Rule 589. – Special Price Fluctuation Limits and Daily Price Limits Table
	Appendix E	Exchange Fees
	Appendix F	Euro Reference Rate Analysis – (CONFIDENTIAL TREATMENT REQUESTED)

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Appendix A

CME Rulebook

Chapter 450
Bitcoin Euro Futures

45000. SCOPE OF CHAPTER

This chapter is limited in application to Bitcoin Euro Futures. In addition to this chapter, futures shall be subject to the general rules and regulations of the Exchange as applicable.

45001. CONTRACT SPECIFICATIONS

Each futures contract shall be valued at 5 bitcoin as defined by the CME CF Bitcoin-Euro Reference Rate ("BTCEUR_RR").

45002. TRADING SPECIFICATIONS

45002.A. Trading Schedule

Futures contracts shall be scheduled for trading during such hours and for delivery in such months as may be determined by the Exchange.

45002.B. Trading Unit

The unit of trading shall be 5 bitcoin.

45002.C. Price Increments

The minimum price increment shall be 5.00 index points, equal to €25.00 per contract, except for intermonth spreads executed pursuant to Rule 542.A., for which the minimum price increment shall be 1.00 index points, equal to €5.00 per intermonth spread.

45002.D. Position Limits, Exemptions, Position Accountability and Reportable Levels

The applicable position limits and/or accountability levels, in addition to the reportable levels, are set forth in the Position Limit, Position Accountability and Reportable Level Table in the Interpretations & Special Notices Section of Chapter 5.

A Person seeking an exemption from position limits for bona fide commercial purposes shall apply to the Market Regulation Department on forms provided by the Exchange, and the Market Regulation Department may grant qualified exemptions in its sole discretion.

Refer to Rule 559 for requirements concerning the aggregation of positions and allowable exemptions from the specified position limits.

45002.E. Daily Price Limits

At the commencement of each Trading Day, the contract shall be subject to special price fluctuation limits and daily price limits as set forth in Rule 589 and in the Special Price Fluctuation Limits Table in the Interpretations & Special Notices Section of Chapter 5.

45002.F. Termination of Trading

Trading in expiring futures shall terminate at 4 p.m. London time on the last Friday of the contract month if that day is a business day in either the UK or the US. If that day is not a business day in both the UK and the US, trading shall terminate on the preceding day that is a business day in either the UK or the US.

45003. SETTLEMENT PROCEDURES

Delivery shall be by cash settlement.

45003.A. Final Settlement Price

For a futures contract for a given delivery month, the Final Settlement Price shall be the BTCEUR_RR published at 4 p.m. London time on the Last Trade Date (Rule 45002.F.). Revision to the published BTCEUR_RR shall be received prior to 23:59:59 London Time on the Last Trade Date. Thereafter, the final settlement futures price shall be deemed final.

In the event that the BTCEUR_RR is not publishable or published on the CME Bitcoin Euro Futures Termination of Trading day, and therefore, CME cannot determine the CME Bitcoin Euro Final Settlement

Price, then final settlement of the CME Bitcoin Euro futures contract is at the discretion of the Exchange and may be deferred or postponed for up to 14 consecutive calendar days.

45003.B. Final Settlement

Clearing members holding open positions in an expiring futures contract at its termination of trading (Rule 45002.F.) shall make payment to or receive payment from the Clearing House in accordance with normal variation margin procedures based on such expiring contract's Final Settlement Price (Rule 45003.A.).

In the event of a hard fork, Bitcoin Euro futures shall continue to settle to the BTCEUR_RR corresponding to the original token pair (BTC:EUR). The Exchange may, in its sole discretion, take alternative action with respect to hard forks in consultation with market participants as may be appropriate.

Chapter 449
Ether Euro Futures

44900. SCOPE OF CHAPTER

This chapter is limited in application to Ether Euro Futures. In addition to this chapter, futures shall be subject to the general rules and regulations of the Exchange as applicable.

44901. CONTRACT SPECIFICATIONS

Each futures contract shall be valued at 50 ether as defined by the CME CF Ether-Euro Reference Rate ("ETHEUR_RR").

44902. TRADING SPECIFICATIONS

44902.A. Trading Schedule

Futures contracts shall be scheduled for trading during such hours and for delivery in such months as may be determined by the Exchange.

44902.B. Trading Unit

The unit of trading shall be 50 ether.

44902.C. Price Increments

The minimum price increment shall be 0.50 index points, equal to €25.00 per contract, except for intermonth spreads executed pursuant to Rule 542.A., for which the minimum price increment shall be 0.05 index points, equal to €2.50 per intermonth spread.

44902.D. Position Limits, Exemptions, Position Accountability and Reportable Levels

The applicable position limits and/or accountability levels, in addition to the reportable levels, are set forth in the Position Limit, Position Accountability and Reportable Level Table in the Interpretations & Special Notices Section of Chapter 5.

A Person seeking an exemption from position limits for bona fide commercial purposes shall apply to the Market Regulation Department on forms provided by the Exchange, and the Market Regulation Department may grant qualified exemptions in its sole discretion.

Refer to Rule 559 for requirements concerning the aggregation of positions and allowable exemptions from the specified position limits.

44902.E. Price Limits and Trading Halts

At the commencement of each Trading Day, the contract shall be subject to special price fluctuation limits and daily price limits as set forth in Rule 589 and in the Special Price Fluctuation Limits and Daily Price Limits Table in the Interpretations & Special Notices Section of Chapter 5.

44902.F. Termination of Trading

Trading in expiring futures shall terminate at 4 p.m. London time on the last Friday of the contract month if that day is a business day in either the UK or the US. If that day is not a business day in both the UK and the US, trading shall terminate on the preceding day that is a business day in either the UK or the US.

44903. SETTLEMENT PROCEDURES

Delivery shall be by cash settlement.

44903.A. Final Settlement Price

For a futures contract for a given delivery month, the Final Settlement Price shall be the ETHEUR_RR published at 4 p.m. London time on the Last Trade Date (Rule 44902.F.). Revision to the published ETHEUR_RR shall be received prior to 23:59:59 London Time on the Last Trade Date. Thereafter, the final settlement futures price shall be deemed final.

In the event that the ETHEUR_RR is not publishable or published on the CME Ether Euro Futures Termination of Trading day, and therefore, CME cannot determine the CME Ether Euro Final Settlement Price, then final settlement of the CME Ether Euro futures contract is at the discretion of the Exchange and may be deferred or postponed for up to 14 consecutive calendar days.

44903.B. Final Settlement

Clearing members holding open positions in an expiring futures contract at its termination of trading (Rule 44902.F.) shall make payment to or receive payment from the Clearing House in accordance with normal variation margin procedures based on such expiring contract's Final Settlement Price (Rule 44903.A.).

In the event of a hard fork, Ether Euro futures shall continue to settle to the ETHEUR_RR corresponding to the original token pair (ETH:EUR). The Exchange may, in its sole discretion, take alternative action with respect to hard forks in consultation with market participants as may be appropriate.

Appendix B

CME Rulebook
Chapter 5
("Trading Qualifications and Practices")
Position Limit, Position Accountability, and Reportable Level Table

(attached under separate cover)

Appendix C

CME Rulebook
Chapter 5
("Trading Qualifications and Practices")
Rule 588.H. – ("Globex Non-Reviewable Trading Ranges") Table

(additions underlined)

		Outrights			Spreads	
Instrument	Globex Symbol	Globex Non-Reviewable Ranges (NRR)	NRR: Globex Format	NRR: Minimum Ticks	NRR: Globex Format	NRR: Minimum Ticks
Bitcoin Euro Futures	BTE	1%	Variable	Variable	Each leg evaluated as an outright	
Ether Euro Futures	ETE	3%	Variable	Variable	Each leg evaluated as an outright	

Appendix D

CME Rulebook
Chapter 5
("Trading Qualifications and Practices")
Rule 589. – Special Price Fluctuation Limits and Daily Price Limits Table

(additions underlined)

Product	Rulebook Chapter	Commodity Code	Primary/ Associated	Associated With	Daily Price Limit
Bitcoin Euro Futures	450	BTE	Primary	Primary	10% of Dynamically Calculated Reference Price Daily Price Limit Table
Ether Euro Futures	449	ETE	Primary	Primary	10% of Dynamically Calculated Reference Price Daily Price Limit Table

Appendix E

Exchange Fees

Membership Type	Venue/Transaction Type	Bitcoin Euro	Ether Euro
Individual Members Clearing Members Rule 106.J Equity Member Firms & Rule 106.J Qualified Subsidiaries Rule 106.I Members & Rule 106.I Qualified Affiliates Rule 106.S Member Approved Funds	CME Globex	$3.00	$2.00
	EFP	$4.50	$3.67
	EFR	$4.50	$3.67
	Block	$4.50	$3.67
	Delivery	$1.25	$0.75
	Exe|Asn|Future From	$1.30	$0.80
Rule 106.D Lessees Rule 106.F Employees	CME Globex	$4.50	$2.90
	EFP	$6.75	$4.41
	EFR	$6.75	$4.41
	Block	$6.75	$4.41
	Delivery	$2.00	$1.20
	Exe|Asn|Future From	$2.05	$1.25
Rule 106.R Electronic Corporate Members (For other than CME Globex - Non-Member rates apply)	CME Globex	$4.60	$2.96
Rule 106.H and 106.N Firms	CME Globex	$4.90	$3.14
	EFP	$7.13	$4.63
	EFR	$7.13	$4.63
	Block	$7.13	$4.63
	Delivery	$2.20	$1.32
	Exe|Asn|Future From	$2.25	$1.37
International Incentive Program (IIP) Participants International Volume Incentive Program (IVIP) Participants (For other than CME Globex - Non-Member rates apply)	CME Globex	$6.00	$4.00
Central Bank Incentive Program (CBIP) Participants Latin American Fund Manager Incentive Program (FMIP) Participants (For other than CME Globex - Non-Member rates apply)	CME Globex	$5.50	$4.00
Members Trading Outside of Division (For other than CME Globex During ETH - Non-Member rates apply)	CME Globex During ETH Only	$5.75	$3.85
Non-Members	CME Globex	$6.00	$4.00
	EFP	$9.00	$7.33
	EFR	$9.00	$7.33
	Block	$9.00	$7.33
	Delivery	$2.50	$1.50
	Exe|Asn|Future From	$2.55	$1.55

Processing Fees	Fee
Position Adjustment/Position Transfer	$0.10
Give-Up Surcharge	$0.05
Facilitation Fee	$0.40

Appendix F

Euro Reference Rate Analysis

(CONFIDENTIAL TREATMENT REQUESTED)

(attached under separate cover)