

CBDC Part 1: An Introduction to Central Bank Digital Currencies

WEEKLY RECAP

- Total market cap. reached \$120bn (a 1.9% increase), and 7 day trading volume dropped 3.8% for top 100 crypto

WEEK AHEAD

- 25 Jan: CME BTC futures last trade date

THOUGHTS OF THE WEEK

Standard Kepler has previously identified Central Bank Digital Currencies (CBDC) as one of the more promising potential applications of distributed ledger technology (DLT). As is made evident in the chart of the week, a number of CBDC projects have been launched for purposes of evaluating the suitability of blockchain in future wholesale and retail payment systems. The following is part 1 of a series of short articles that will examine different aspects of CBDCs.

Financial market infrastructures (FMIs) are critically important institutions responsible for providing clearing, settlement and the recording of financial transactions. FMIs are trusted third parties between financial institutions, using centralized ledgers to record and track transactions. FMI operators display significant interest in technology that may increase the efficiency of FMIs, and three waves of exploratory CBDC DLT projects have been launched to date.

A number of benefits are typically hypothesised for such future payment systems. It is speculated that financial sector back-office costs can be reduced via increased settlement automation. Further advantages are expected with regards to reliability and traceability of information, as well as shorter settlement times. CBDC DLT projects to date indicate that the technology is currently lacking the maturity to achieve these improvements, and part 3 and 4 of this series will more closely evaluate the actual benefits of using DLT in wholesale and retail payment systems.

Due to their critical importance to financial stability, FMIs balance a number of significant risks. These include governance and legal risks, credit and liquidity risks, settlement risk, and operational risk. Appropriate transparency and privacy for system participants must also be achieved while maintaining the benefits of DLT technology. This results in a series of trade-offs, significantly so between system privacy, resilience, and scalability. Existing CBDC projects indicate that Corda achieves privacy and scalability at the cost of resilience, Hyperledger Fabric achieves privacy at the cost of resilience and privacy, and Quorum's zero-knowledge proofs achieve privacy at the cost of scalability. Part 2 of this series will more closely compare Corda, Hyperledger Fabric, and Quorum.

CBDC DLT projects should be studied closely, as they bring us closer to identifying the core value proposition of DLT.

Tobias Mathiasen
DIRECTOR, RESEARCH
Tobias@standardkepler.com

Johnny AuYeung
CHIEF TECHNOLOGY OFFICER
Johnny@standardkepler.com

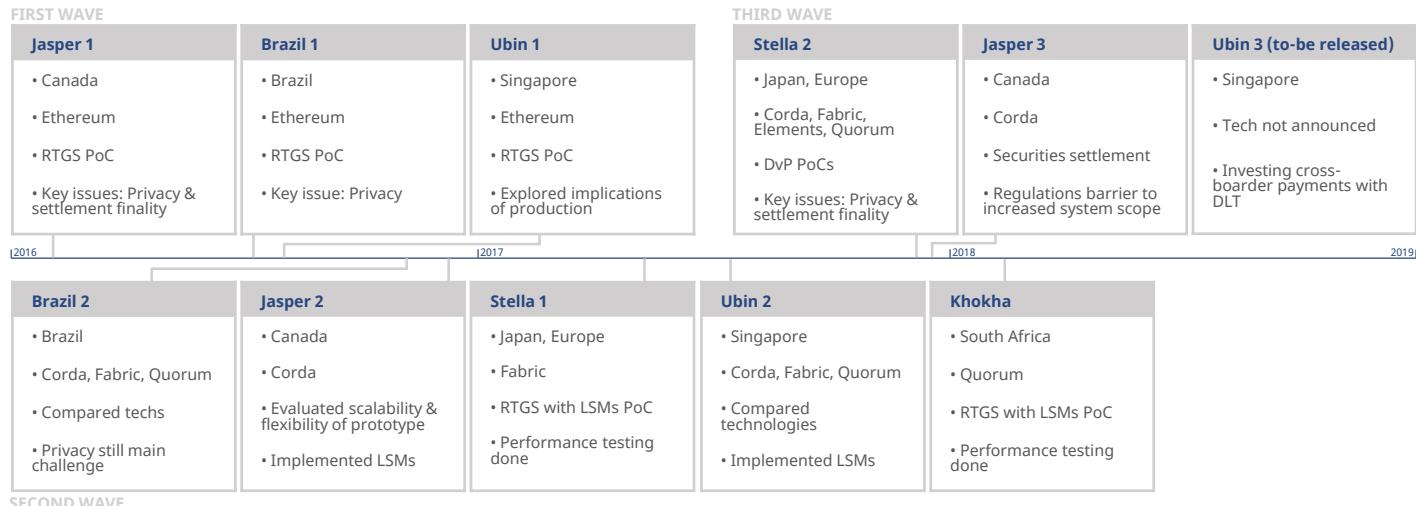
Matthew Lam
ANALYST, RESEARCH
Matthew@standardkepler.com

TOP CRYPTO PERFORMANCE SUMMARY

Name	Price	7D%	Vol.	7D%	Mkt Cap.	% Total Mkt
BTC	\$3,588.81	-0.30%	31.88bn	-1.71%	62.78bn	52.53%
XRP	\$0.32	-1.84%	2.49bn	-21.34%	13.04bn	10.91%
ETH	\$119.11	-0.86%	15.60bn	0.32%	12.44bn	10.41%
BCH	\$123.10	-3.66%	1.11bn	-15.63%	2.16bn	1.81%
EOS	\$2.35	1.32%	4.50bn	-7.55%	2.13bn	1.78%
USDT	\$1.02	-0.67%	23.23bn	-3.21%	2.05bn	1.71%
XLM	\$0.10	-2.02%	0.61bn	-6.65%	1.99bn	1.67%
LTC	\$31.02	-0.81%	3.22bn	-4.82%	1.86bn	1.56%
TRX	\$0.02	8.93%	0.98bn	-62.33%	1.59bn	1.33%
BSV	\$74.94	-4.56%	0.34bn	-45.63%	1.32bn	1.10%

CHART OF THE WEEK

Timeline of Central Bank Digital Currency DLT Projects to Date



STANDARD KEPLER

WEEKLY SUMMARY | 14 – 20 JANUARY

DISCLAIMER

Abbreviations: ADA: Cardano; BCH: Bitcoin ABC; BSV: Bitcoin Satoshi Vision; bn: billion; BTC: Bitcoin; crypto: cryptocurrencies; ETH: Ethereum; ICO: Initial Coin Offerings; Market Cap: Market Capitalization; mn: million; Trading Vol.: Trading Volume; US\$: United States Dollars; USDT: USD Tether; XLM: Stellar Lumens; XMR: Monero; XRP: Ripple

Chart of The Week: Sources: Project Khokha whitepaper, Project Jasper 3 whitepaper, Standard Kepler Research

Market Cap & Trading Vol.: Sources: Coinmarketcap, Standard Kepler Research
The horizontal axis represents the week number in 2018. For instance, W37 indicates the thirty seventh week in 2018. W1 indicates the first week in 2019. The primary vertical axis represents total market capitalization; and the secondary vertical axis represents total trading volume.

Network Fundamentals: Sources: Blockchain.com, Blocktrail, Etherchain.org, Etherscan.io, Standard Kepler Research

Thought of The Week: Sources: Project Jasper 1 whitepaper, Project Jasper 2 whitepaper, Project Jasper 3 whitepaper, Project Ubin 1 whitepaper, Project Ubin 2 whitepaper, Stella 1 whitepaper, Stella 2 whitepaper, Project Khokha whitepaper, Standard Kepler Research

Top Crypto News At a Glance: Sources: Blockcast.it, CCN, Coindesk, Cointelegraph, Standard Kepler Research

Top Crypto Performance Summary: Sources: Coinmarketcap, Standard Kepler Research

Week Ahead: Sources: Cryptocalendar.pro, Standard Kepler Research

Weekly Recap: Sources: Coinmarketcap, Standard Kepler Research

Past performance does not guarantee future results.

Opinions and estimates offered constitute our judgment and are subject to change without notice, as are statements of financial market trends, which are based on current market conditions. We believe the information provided here is reliable, but do not warrant its accuracy or completeness. This material is not intended as an offer or solicitation for the purchase or sale of any cryptocurrencies. The views and strategies described may not be suitable for all investors. This material has been prepared for informational purposes only, and is not intended to provide, and should not be relied on for, accounting, legal or tax advice. Any forecasts contained herein are for illustrative purposes only and are not to be relied upon as advice or interpreted as a recommendation.

The price of Bitcoin and other cryptocurrencies are highly volatile in nature. It is suggested that clients should perform their own due diligence and consult a fully qualified independent professional financial adviser before making any investments in cryptocurrencies.

©Standard Kepler, January 2019.

Unless otherwise stated, all data is as of January 20, 2019 or as of most recently available.

ABOUT STANDARD KEPLER

Standard Kepler is Asia's leading blockchain financial services provider, offering market changing research insights, in addition to holistic advisory, brokerage, and custodian services. We take great pride in being able to offer professional services that are trusted for our honesty and driven by technology. Headquartered in Hong Kong, Standard Kepler's management team previously served in JP Morgan, Macquarie Capital, State Street, and KPMG.

Standard Kepler's research insights are distributed in collaboration with several partners, including Thomson Reuters, BTC.com, and Binance. If you are interested in exploring more of our research insights, or becoming one of our research distribution partners, visit www.standardkepler.com/research or contact us directly at research@standardkepler.com.