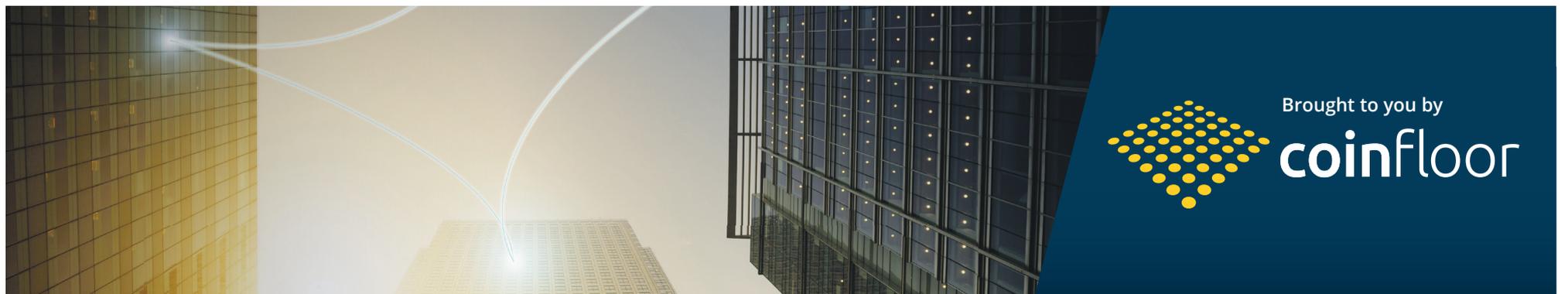


CRYPTO ECONOMICS

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CRYPTO ECONOMICS

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GOVERNANCE

Collaboration vital to set best practice

Central banks and regulators are showing increasing interest in crypto assets, but a harmonisation of standards is needed for the industry's future

Crypto assets stand at a fascinating crossroads in 2018. Institutional and professional interest is more widespread than ever, as large swathes of investors realise the huge potential of this emerging asset class. Central banks and regulators are also paying attention, and assessing how best to define governance frameworks and oversight to create efficient, fair and transparent markets without hindering innovation. It may still be a nascent market with structural challenges that must be addressed, but crypto assets offer investors far greater transparency and less reliance on middlemen than traditional financial markets. The infrastructure is more modern and shows real promise to be far more efficient, and suspicions are gradually being assuaged as scepticism of crypto assets is replaced by an appreciation of the opportunities they present.

It is not just price volatility that is drawing people in. Crypto assets have a much lower barrier to entry, enabling participation for investors who are priced out of conventional markets. The crypto world redresses the balance, opening the market up in a transparent and cost-effective way.

Some policymakers are still cautious. From the Financial Stability Board to the G20, the development of crypto assets has appeared on several high-level agendas this year, as regulators and policymakers consider what frameworks may be needed to promote stability and consumer safety within this emerging asset class.

Speaking to an academic audience in Edinburgh in March 2018, Bank of England governor Mark Carney argued that cryptocurrencies should



Simon Taylor

Founder and advisory council member of Global Digital Finance and co-founder of 11:FS



not be considered a true form of money. On the basis that they provide poor short-term store of value and show little sign of becoming widely used as payment for goods and services, they should be seen as assets rather than currencies, he said.

Not all policymakers share this view, however. In a recent paper published by the Federal Reserve Bank of St. Louis, economists noted the similarities between regular currencies and crypto assets. While bitcoin units have no intrinsic value, neither do state monopoly currencies such as the US dollar or the euro, the paper argued. But both Mr Carney and the St Louis Fed reach the same conclusion – that crypto assets show where innovation is focused and what consumers want.

There are, however, several issues that most policymakers agree should be tackled. Consumer and investor protection must be safeguarded, ensuring market integrity is necessary, and the prevention of money laundering is essential to enable the continued evolution of crypto assets without creating undue risk.

“Authorities need to decide whether to isolate, regulate or integrate crypto assets and their associated activities,” Mr Carney said.

Some jurisdictions – including China, Bangladesh and Ecuador – have already opted to ban or curtail crypto asset trading, but global policymaking has broadly advocated regulating and supporting the evolving sector rather than stifling it. Indeed, countries continue to emerge with principle-based

assets are not used for money laundering or terrorist financing, or to shield illicit activity.

The official sector clearly has work to do in this space, and every jurisdiction will inevitably have its own unique priorities. But greater harmonisation of standards will be needed to allow crypto assets to reach their full potential. International standard setting is important, but it will inevitably involve negotiation and compromise, and its success will ultimately rely on national implementation.

In the meantime the industry must play its part in the evolution of the sector, working closely with the relevant authorities to develop robust standards that promote transparency and efficiency on a consistent basis. Through an exciting new initiative known as Global Digital Finance, we are already working on a global code of conduct that should help regulators and central banks to better understand the space, while also promoting standard terms and definitions to reduce the misconceptions that currently abound.

A similar process has helped to restore trust and confidence in the global FX market after market manipulation was uncovered on the trading floors of many top-tier banks. Over a two-year period between 2015 and 2017, a coalition of central bankers consulted with industry participants to produce 55 principles representing accepted market conduct across the trade lifecycle. Once adopted, the FX Global Code should reduce the potential for systemic conduct lapses in the future, while also protecting investors and corporates.

Crypto assets have not yet suffered from the kind of major breach in trust that led to the FX Global Code, but the creation of a robust code of conduct would be the best way to deal with pressing issues. Not only would it provide the kind of consumer protection that is needed in any emerging asset class, but it could also play its part in reducing opportunities for money laundering and terrorist financing.

There are some big rewards on offer if this is done properly. Greater consistency and harmonisation should strengthen liquidity, increase efficiency and produce further opportunities for product innovation and cost savings. For those invested in the crypto space, and the many more that could still benefit, its future depends on proactive collaboration with the official sector, rather than resistance to regulatory scrutiny. ♦

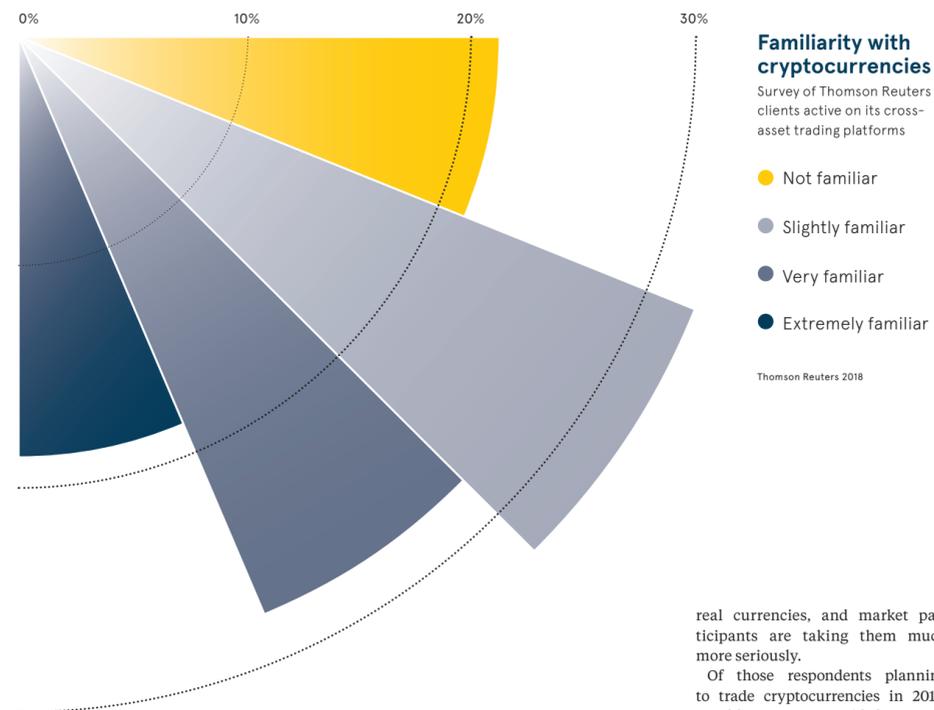
Greater consistency and harmonisation should strengthen liquidity, increase efficiency and produce further opportunities

regulatory frameworks, notably Gibraltar, Switzerland and Japan, which have all enacted balanced approaches to crypto assets within their jurisdictions.

When G20 finance ministers and central bank governors met in Buenos Aires in March, they concluded that crypto assets could at some point have implications for financial stability. They called on standard-setting bodies to continue to monitor the space and assess what responses may be needed. A report from standard setters is expected in July 2018.

The Financial Stability Board (FSB) has undertaken its own assessment of crypto assets and found they do not currently pose risks to financial stability; but this could change if they become more widely used or interconnected with the core financial system.

Crucially, the FSB noted that material improvements in conduct, market integrity and cyber resilience may be needed to reduce risks to financial stability and ensure crypto



Traders need reliable data as cryptos take off

In the space of a year, cryptocurrency trading has moved from a fringe activity to a strategic goal for some firms. Now is the time to invest in market data feeds...

In January 2017, we at Thomson Reuters informally surveyed our financial services clients to determine the level of interest in cryptocurrencies, but the majority of firms still had little or no interest at all. Bitcoin was largely seen to be a bizarre alternative currency, and few traditional market participants had any interest in trading crypto assets.

A year later, in early 2018, we carried out a more formal survey of nearly 430 professional clients active on our flagship cross-asset trading platforms, which include Eikon, REDI and FXall. The results were startlingly different. We found one in five respondents are now considering trading cryptocurrencies over the next three to twelve months.

This represents a landmark shift of mindset, driven largely by the

dramatic surge in the value of bitcoin in late-2017. The currency's rise to nearly \$20,000, followed by multiple falls and rebounds, represents an unprecedented market event that showed cryptocurrencies are finally coming of age. For those investors seeking alternative sources of return, it is no surprise that bitcoin, ethereum and other cryptocurrencies have suddenly become flavour of the month.

It would be all too easy to dismiss the hype as a bubble that is bound eventually to burst; but asset bubbles typically tend to inflate only once or twice before they burst. By contrast, the value of bitcoin has surged multiple times since its creation, and every time it retrenches, it doesn't quite fall as far as its previous low.

In short, cryptocurrencies are beginning to behave more like

Good quality market data and intelligence is needed to give investors the information they need to make profitable trading decisions

Such services should not focus solely on the largest and most popular cryptocurrencies, however. While bitcoin and ethereum may be the most actively traded assets at this point, our survey indicated that many investors are also interested in other coins, some of which are still very small. Investing in multiple types of cryptocurrency could either be a means of speculation or a way of distributing risk across multiple assets.

Just as some traditional funds focus on initial public offerings, we now see rising demand for initial coin offerings as a means of investing in the primary issuance of the token rather than the secondary market. Equally we have found some participants have no interest in trading underlying cryptocurrencies, but suggested they would access crypto exchange-traded funds, as and when they become available.

One of the most fundamental requirements to support trading in any asset is a reliable market data feed, and cryptocurrencies are no exception.

The unique nature of blockchain means that cryptocurrencies require a specially designed feed, known as an 'oracle'. When a smart contract operates on the blockchain, it doesn't have access to data and information that sits outside the blockchain, so the oracle must be able to feed this information in.

In the simple example of a weather derivative, a smart contract might take five tokens each from two counterparties betting on whether it will rain, and the accumulated ten tokens would go to the party that accurately predicts the weather. But the blockchain-based contract has no way of determining whether it rains, so it would be up to the independent

oracle to provide that critical data to the blockchain, thereby deciding the outcome of the trade.

The market data oracle is a fundamental part of the market structure for cryptocurrencies, and Thomson Reuters last year became the first large company to make an oracle available for commercial use. After extensive development early last year, we launched BlockOne IQ in June 2017 and have already engaged more than 100 clients.

Operating on Corda, Ethereum or Quorum, BlockOne IQ allows users to incorporate our independent market data – which covers multiple asset classes including equities, FX, corporate actions and crypto prices – into their smart contracts. Because a blockchain cannot access or verify market data independently, the oracle needs to come from a trusted, reliable provider such as Thomson Reuters.

When JP Morgan and the National Bank of Canada jointly tested blockchain in April 2018 with floating rate debt issued via Quorum, the requisite market data was provided by BlockOne IQ. We anticipate there will be more public transactions that leverage the oracle in the months ahead, but this high-profile deal shows the kind of transactions already being facilitated through this evolving infrastructure.

As a market-leading provider of news, data and trading capabilities, Thomson Reuters has been at the forefront of many major transitions in the past, and while cryptocurrencies still represent only a small fragment of financial market trading, our research suggests this will continue to grow. We are excited to be already delivering the infrastructure that will support that growth. ♦



Sam Chadwick

Director of innovation,
Thomson Reuters

Charles Hayter
Chief executive and co-founder,
CryptoCompare

Pros and cons of the crypto majors

The co-founder of crypto platform CryptoCompare analyses the biggest cryptocurrencies by market capitalisation, and cherry picks a handful of emerging tokens linked with interesting and unusual projects

◆ Ranking on CryptoCompare.com ● Dominant use

Bitcoin (BTC)

◆ 1 ● Store of value/payment

Bitcoin, the first decentralised cryptocurrency, uses peer-to-peer technology to operate with no central authority or banks; managing transactions and the issuing of bitcoins is carried out collectively by the bitcoin network. There are currently just over 17 million bitcoins in existence but many are lost forever. Less than four million are programmed to be "mined" in the coming century.

Pros

- + The most secure and decentralised crypto
- + The Lightning Network is operational and allows for layer-two transactions which are almost fee-less and instant

Cons

- Ten-minute confirmation times and high electricity consumption to secure the network via "mining"

Ethereum (ETH)

◆ 2 ● dApp platform/smart contracts/payment

Ethereum is a decentralised platform that runs smart contracts – applications that run exactly as programmed without any possibility of downtime, censorship, fraud or third-party interference. In the Ethereum protocol and blockchain there is a price for each operation. The cryptocurrency is called ether and is used to pay for computation time and for transaction fees. The network went live in July 2015 and has given rise to hundreds of dApps (decentralised applications) such as Golem and Basic Attention Token.

Pros

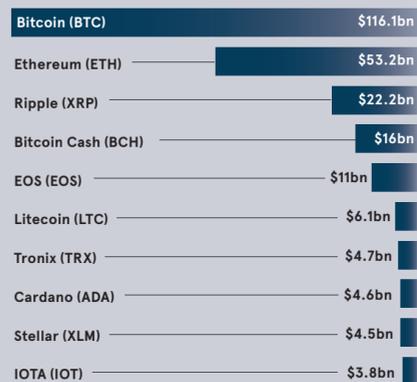
- + Limitless number of DApps can be created
- + Fast block time of 15 seconds

Cons

- Currently no limit on ETH supply

Largest cryptocurrencies by market capitalisation

Correct as of June 11



CryptoCompare 2018

Ripple (XRP)

◆ 3 ● Payment

Ripple is a distributed network, meaning transactions occur immediately across the network. And, as it is peer to peer, the network is resilient to systemic risk. XRP, the token of Ripple Labs, isn't mined – unlike bitcoin and others – but each transaction destroys a small amount of XRP that adds a deflationary measure into the system. Ripple Labs' software is starting to be adopted by banks but the native XRP token has yet to be used by financial institutions on a significant scale.

Pros

- + High transaction speed
- + Numerous partners, particularly in the banking sector

Cons

- Centralised control
- High volatility risk

EOS (EOS)

◆ 5 ● dApp platform/smart contracts

Like Ethereum, the EOS platform aims to support smart contract implementation and dApps. However, EOS boasts much higher transaction speeds than Ethereum.

Pros

- + Raised over \$3.2 billion in its ongoing, year-long initial coin offering; research and development can continue on a large scale for decades, in theory

- + EOS aims to have greater functionality than the Ethereum platform

Cons

- The mainnet only launched in early June, so the technology is largely untested

Bitcoin cash (BCH)

◆ 4 ● Payment

Bitcoin cash – an "altcoin" that "hard forked" from the Bitcoin blockchain ledger – is similar to bitcoin in terms of its protocol ("proof of work" hashing; supply of 21 million tokens; same block times and reward system). However, the blocksize limit is 32MB rather than 1MB.

Pros

- + Much larger block size compared to bitcoin, so can store more transactions per block

Cons

- Larger block sizes are viewed as an inelegant method of scaling that will centralise mining

Five cryptos of interest

Monero (XMR)

◆ 14 ● Privacy payments

Monero, which uses a CryptoNight proof-of-work algorithm, is considered to be the leading privacy-focused cryptocurrency. It uses a "ring signature" system, allowing users to make untraceable transactions, has a fast block time of 60 seconds, but is expensive to transact and has limited user-friendly wallets.

Golem (GNT)

◆ 22 ● Cloud computing

Unlike many dApp platforms Golem has a functional product that allows video producers to render CGI videos an eighth of the time quicker than normal by using the decentralised cloud computing network. It is live and tested, but currently supports CGI rendering only.

Basic Attention Token (BAT)

◆ 44 ● Advertising

This Ethereum-based token can be used to obtain a variety of advertising and attention-based services on the Brave platform – a new blockchain-powered digital advertising system. User attention is privately monitored in the Brave browser; however success depends upon its popularity, given the tough competition from the likes of Firefox and Chrome.

STEEM (STEEM)

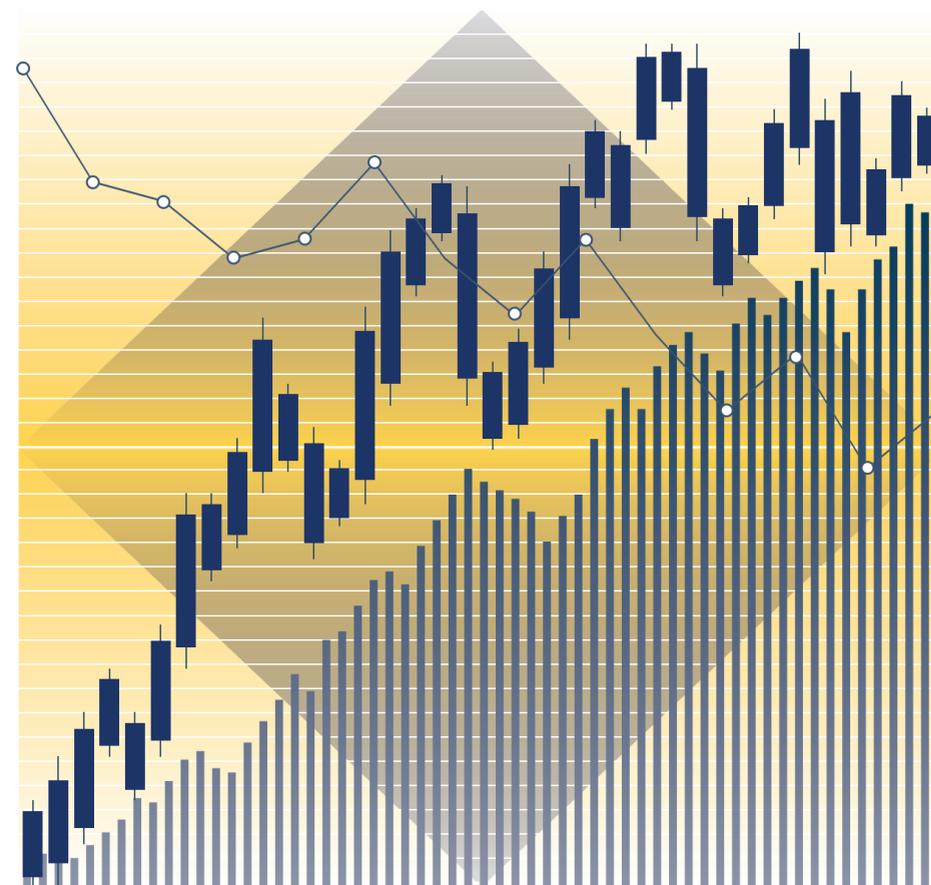
◆ 58 ● Social media

Steemit.com is a blockchain-powered social media platform where users earn rewards by posting relevant content, curating quality content through "upvoting", and by holding Steem-based currencies in a "vest fund", which generates interest. It is very popular within the crypto community, but has competition from centralised, popular sites like Facebook.

DigixDAO (DGD)

◆ 157 ● Governance

Digix aims to build a digital gold payment system on the blockchain. They have two native tokens at present: DGD (on the Ethereum blockchain as an ERC20 token); and DGX (a gold-backed token). DGD holders participate in a decentralised decision-making process that dictates the future of Digix; however, the top 100 holders own 84 per cent of supply.



Hitting the right spot with futures contracts

The advent of bitcoin futures marks an important milestone for crypto assets, but only with physically delivered contracts will market participants avoid the risk of slippage and manipulation

The continued growth of futures markets for crypto assets is an important step in the evolution of the asset class, as it moves from the periphery into mainstream financial markets. Cash-settled futures pose significant risk to market makers and end investors, creating a compelling business case for a physically delivered alternative.

The intrinsic merits of crypto assets have not changed in the years since they first appeared: the peer-to-peer model offers a completely frictionless way to transact with minimal involvement of third parties. As the product matures and becomes more widely accepted, it stands to bring efficiencies to any sector that requires electronic payments and greater access to financial services.

A basic spot market doesn't satisfy everyone, however, and among institutional investors there has been rising appetite to trade futures as a more capital-efficient alternative that requires less initial capital

investment. Futures give investors the opportunity to trade on expected price moves and generally incur lower fees because there is less direct handling of the assets involved.

The development of bitcoin futures has gained momentum in recent years, with regulated markets CBOE Global Markets and CME Group both launching their own cash-settled futures products to great fanfare in December 2017. Meanwhile crypto-trading platforms Bitcoin Mercantile Exchange (BitMEX) and OKEX have become significant pools of bitcoin futures liquidity.

However, the majority of bitcoin futures are still offered only on a cash-settled basis, meaning that upon contract expiry, the investor will receive or pay the difference between the contract price and the indexed price. Cash-settled futures may be relatively straightforward to execute, with no physical exchange of assets involved, but they are prone to increased risk of price slippage and manipulation.

Among market participants active in bitcoin, there is strong demand for an alternative to cash-settled futures

When trading cash-settled futures in traditional markets, liquidity providers will typically buy or sell spot contracts at or close to expiry to offset the impact of the futures. If it becomes difficult to do this accompanying trade or there is unexpected slippage, they face the risk of losses or reduced profits, and there have been concerns that the indices to which contracts are linked can be manipulated to move futures prices.

In a physically delivered bitcoin future, these risks are reduced. A seller would deliver bitcoin and receive cash, while a buyer would deliver cash and receive bitcoin in return. At expiry, the contract holder would simply pay or receive the price difference, but the underlying asset – bitcoin – actually changes hands, and the product is much harder to manipulate as a result.

Bitcoin futures may still be a fairly new product, but there is no reason why lessons cannot be learned from traditional futures, where more than 90 per cent of volume currently takes place in physically delivered, rather than cash-settled, products.

This is because investors and hedgers naturally want trades to behave in a transparent and economically predictable way, but this is much more difficult in a cash-settled future, where the spot price can be more easily manipulated to affect the outcome. The economics of a physically delivered futures contract are more predictable, making it an attractive alternative for liquidity providers and investors.

Among market participants active in bitcoin, there is strong demand for an alternative to cash-settled futures. As a spokesperson for proprietary trading firm DRW put it recently, products indexed to a spot exchange or related auction are "inherently flawed due to the constraints that currently exist on these spot exchanges". As a result, DRW and Cumberland, its bitcoin subsidiary, have publicly advocated the development of a physical futures contract.

Despite the widespread availability of cash-settled futures, some exchanges have recognised the associated challenges and risks. Intercontinental Exchange has been a notable dissident, with chief executive Jeff Sprecher telling a conference audience in December that he was in no rush to "settle against an index on a lot of exchanges that are not particularly transparent".

At Coinfloor, we recognised the inherent problems with cash

settlement and our subsidiary, CoinfloorEX, launched the very first physically delivered bitcoin futures exchange, based in the British Virgin Islands, in May 2018. It is still early days, but we are already seeing broad-based interest as market participants welcome the advent of a more transparent, reliable alternative to cash-settled futures.

There are challenges associated with physical delivery, of course, including the tightening of margin requirements after delivery, when investors must transition from a leveraged position to being fully collateralised. We have set this cycle over a seven-day period and have worked to ensure liquidity and tight two-way pricing continues throughout.

If liquidity providers and investors can get to grips with these processes, they stand to yield huge benefits. Given the more robust nature of physically delivered bitcoin futures and the reduced susceptibility to manipulation, liquidity providers should be incentivised to quote tight prices that will be more attractive to investors and commercial users of futures, creating a virtuous circle that will in time boost liquidity and volume.

With increased volatility in bitcoin in recent months, it is only a matter of time before the market moves en masse towards physical settlement. Not only will investors be able to absorb price swings better than with cash-settled futures, but physically delivered futures offer a more transparent alternative that will pose less systemic risk to this burgeoning market. ◆



Mark Lamb

Co-founder and head of liquidity relationships, Coinfloor

Rules to protect and nurture

How governments approach crypto regulation will define the future of the industry, but could also hold the key to the enormous economic opportunity presented by blockchain

Should the cryptocurrency industry be regulated, and if so, what is the best way to go about it? It is a complex subject, but I believe that steps do need to be taken to protect consumers and rein in bad actors in this space.

Cryptocurrencies present an enormous opportunity for increased transparency in the world of professional finance, and could improve financial security for end-users in both the banked and unbanked worlds. Regulatory certainty can guide the adoption curve of this revolutionary technology towards positive use cases and minimise the impact of scams.

In many ways, though, existing regulatory approaches are likely to fall short in both correctly addressing the problems that have cropped up in the industry over the past two years and in successfully capturing economic gains of the blockchain for each of the citizenries impacted by new laws.

Partly due to a shocking lack of discernibility between quality projects and scams, unsophisticated investors have thrown money blindly into initial coin offerings (ICOs). Funds are equally likely to disappear into a black hole as they are to end up in the hands of legitimate early-stage companies. As it turns out, the world-changing ease with which blockchains allow for the transfer of value across borders also hinders the ability of traditional regulatory approaches to investigate the validity of any one project before the market has moved on to the next opportunity.

Existing remedies to fraud, including recourse through litigation and



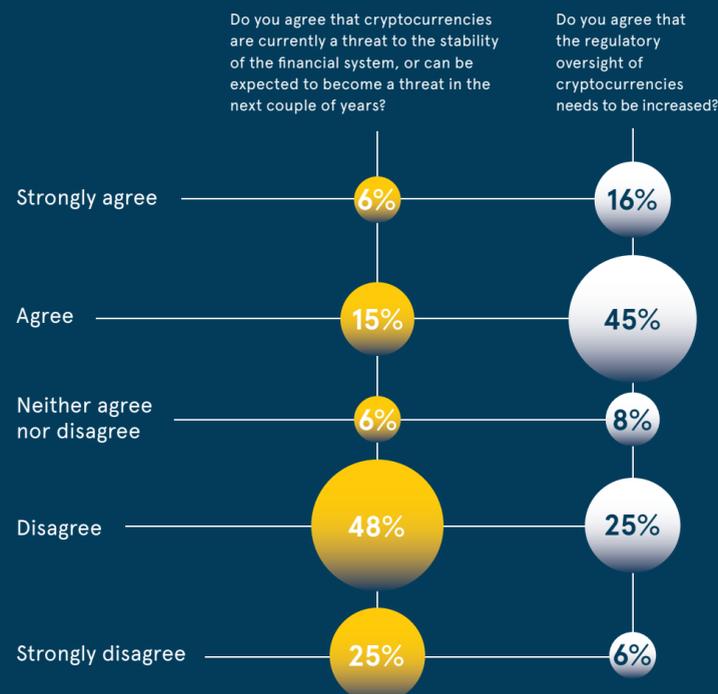
Graham Tonkin
Chief growth officer, Mosaic

measures to avoid counterparty risk in the future, do not apply as easily to the open-source software space in which cryptocurrencies reside. Like the internet, these technologies are distributed and exist everywhere, with limited jurisdiction at any single regulatory endpoint. Legislative approaches typically can be enforced only via the presence of "boots on the ground". The headquarters of large companies now dominating the space – cryptocurrency exchanges, brokerages and mining firms – are thus exposed, but small ICO-style projects tend to comprise teams with no definitive physical location.

A decentralised, information-based solution may be necessary in order to root out problematic projects where the arms of government do not reach

Cryptos not a threat, but regulation desired

Survey of European economists



Centre for Macroeconomics/CEPR 2018

A decentralised, information-based solution may be necessary in order to root out problematic projects where the arms of government do not reach. Sunlight is the best disinfectant, after all.

Beyond solving these and other problems, governments have also been tasked with capturing a portion of the enormous economic opportunity presented by the blockchain space for their home market.

Crypto protocols are distributed in nature; where they are mined, developed and held has no relevance to the borders in which they exist, meaning that a small number of first-mover jurisdictions may obtain a lion's share of the job creation and economic gains to come.

Similar to the advantageous appeal of low-tax jurisdictions, the government that favours cryptocurrencies is likely to see burgeoning industry, an increase in local tax collection and numerous other knock-on effects of creating business-favourable environments.

I predict a similar path will unfold in the crypto-financial space. The

most favourable locale is likely to attract massive capital inflows as entrepreneurs and investors seek the friendliest, clear and most accommodative environments – they have little incentive to pursue operations in jurisdictions projecting uncertainty and high legal risk.

We have begun to see this dynamic play out on a small scale already within the United States. An early attempt to legislate cryptocurrency companies in New York, the BitLicense, came into effect in August 2015. Though theoretically facing significant operational inertia six years on from the 2009 public release of Bitcoin protocol, more than ten crypto-financial organisations left town immediately, leading *The New York Business Journal* to label it the "great Bitcoin exodus".

At the international level, countries like Switzerland and Singapore have taken proactive approaches to building a crypto-friendly image. For example, the Swiss canton of Zug, known as "Crypto Valley", has worked with private companies to accept cryptocurrency for payments of government fees and has integrated the ability to purchase cryptocurrency into machines selling train and bus tickets. Clearly, embracing the upside of new technology will be both a temptingly easy and economically lucrative approach for many governments around the world; yet it is unlikely that cross-jurisdictional co-operation will be a valid solution for solving the space's issues with distributed projects of little merit.

I've been involved in the crypto-asset industry since 2014. Earlier

this year, I joined Mosaic – a new blockchain powered network bringing more reliable data and research to the space. We believe full information discovery is the key to assisting token purchasers in making decisions. In-depth data science, economic analysis and targeted community discussion will provide new, more transparent ways to root out scams and better understand the full spectrum of crypto assets soon to be released or already on the market today.

Without these insights, we feel the industry will transition even more slowly to use case-driven activity – instead of raw speculation – than has already been seen, and the world-changing potential of many high-quality blockchain projects will be drowned out in a sea of disinformation and distrust.

The many benefits of cryptocurrency – from improved international remittances and lower transaction fees, to increased trust in our financial institutions, or in some extreme cases to providing an escape from hyperinflation and poorly run central banks – cannot be fully unlocked without a solution to these problems.

At Mosaic we are working hard to build the backbone for information discovery in this space and to help shine light where it otherwise might not reach. We hope that with time, regulators will come to appreciate the value of such an information-based, middle-path approach, and will avoid resorting to placing themselves at a single end of the strict control-*laissez-faire* spectrum. ♦

New vehicles driving the crypto evolution

More products and better education is vital to quash misconceptions and improve investors' understanding of crypto assets

Cryptocurrency investments have had a spectacular year of growth which has thrust them into the mainstream. To accelerate the next wave of growth, however, the industry needs more education and products that look familiar to users of traditional financial instruments.

Already, on the heels of a remarkable 2017, the asset class has shown signs of growing legitimacy as large, familiar institutions become involved.

For instance, Goldman Sachs launched its own cryptocurrency trading desk earlier this year; Japanese bank Nomura announced a venture to explore a custody solution for bitcoin; and some large investors ventured into bitcoin exposure last year such as commodity fund Old Mutual Gold & Silver.

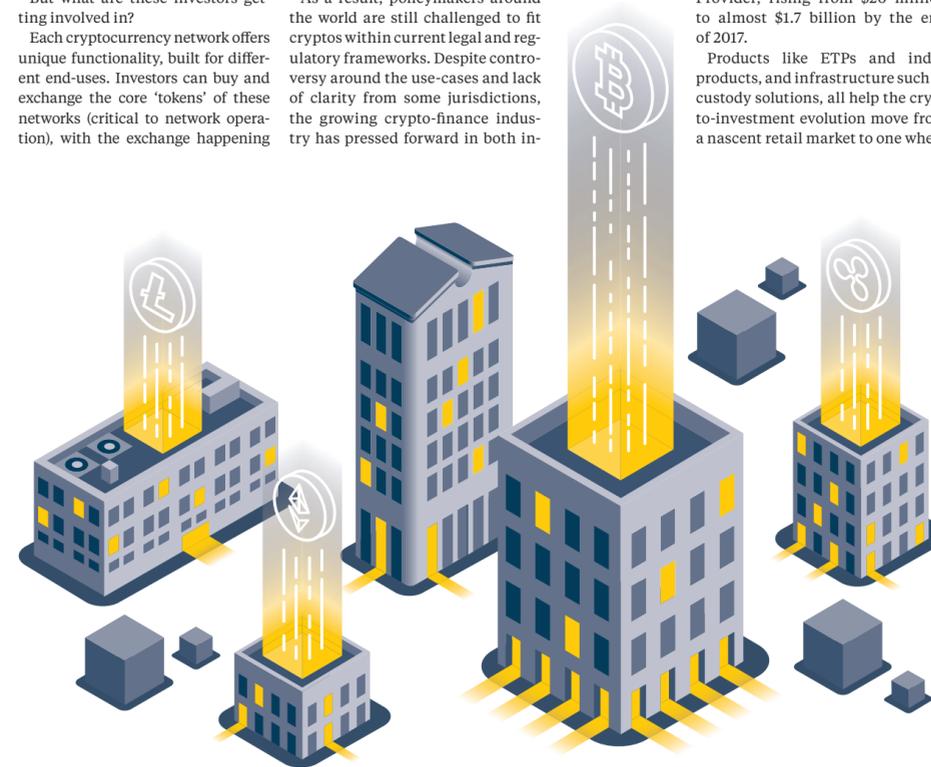
But what are these investors getting involved in?

Each cryptocurrency network offers unique functionality, built for different end-uses. Investors can buy and exchange the core "tokens" of these networks (critical to network operation), with the exchange happening

much like traditional currencies; this exchange market forms the basis for investing in the crypto-asset class. But, unlike traditional currencies or most other tradeable assets, cryptocurrencies are outside the control of any single entity, central banks and financial institutions included.

Investors are still wary of volatility, despite this volatility being natural for a still-emerging asset

As a result, policymakers around the world are still challenged to fit cryptos within current legal and regulatory frameworks. Despite controversy around the use-cases and lack of clarity from some jurisdictions, the growing crypto-finance industry has pressed forward in both in-



frastructure and popularity; and in some cases, the industry has managed to package the new assets in a familiar format for investors.

For instance, in June 2017 one of the UK's largest brokerages began offering access to bitcoin exposure through XBT Provider's exchange-traded product (ETP) listed on Nasdaq in Stockholm; and subsequently, they followed with access to an Ether-tracking ETP later in the year.

The ETPs, Bitcoin Tracker Euro and Ether Tracker Euro, are traded on the Nasdaq exchange in a similar manner as other legacy financial products, making it much simpler for investors to access exposure via their existing brokerage accounts.

The response was enormous, with assets under management by CoinShares, the parent company to XBT Provider, rising from \$20 million to almost \$1.7 billion by the end of 2017.

Products like ETPs and index products, and infrastructure such as custody solutions, all help the crypto-investment evolution move from a nascent retail market to one where

family offices, hedge funds and institutional investors can invest. True, any asset class that is only ten years' old will take time to find acceptance by institutions, but that time can be reduced if the industry can create products that look and operate in a familiar manner.

For instance, our ETPs are ultimately supported by buying the underlying assets within the rules presented in the prospectus and based on terms approved by the exchange. As a result, investors can rely on the brokers who trade on the exchange and with whom they are already familiar.

This familiar path via a known vehicle type offers bridges for the trillions of dollars of available investment capital to enter the crypto market. With more capital, you have more liquidity to aid in the continued growth of both the technology and asset markets. Notably, to date there are no other publicly traded products like ETPs available for traditional investors.

Investors have thus far been attracted to cryptos for their substantial outperformance, which has come with very low correlation to other assets. This means they have proven to be excellent tools for diversifying a larger portfolio. However, investors are still wary of volatility, despite this volatility being natural for a still-emerging asset.

Investors are also still wrangling with questions about the fundamental value of an asset that has no physical form. However, the main strength of cryptos is in fact that they are digital with no link to the physical world. So asking about a crypto assets' tangible or physical value is an old, analogue conversation carrying rhetoric from a world that was not digitally driven. Perhaps a key challenge in professionalising the asset class is to retrofit terminology that we've used in analogue assets to enhance understanding by existing players. Time will help.

Looking ahead to the next 12 months, one potential big development for cryptos as an asset will be sovereign wealth funds adding them to portfolios, and nations and non-profit organisations em-

Some investors still nervous about cryptos

Percentage of UK financial professionals not buying/investing in cryptos

67%

Cryptos are too risky or volatile

61%

Lack of knowledge

43%

Lack of regulation protecting investors

Citigate Dewe Rogerson 2018

ploying them for humanitarian purposes. Organisations that cannot get dollars into places like Venezuela or Africa due to economic blockades could start to use crypto networks to move assets outside the existing system, without the need for permission from a central authority and without the ability for corrupt actors to misdirect the funds.

When respected organisations are leveraging the core features of these networks for good, that's when the world will truly take notice of how powerful this paradigm shift really is – and that moment is rapidly approaching. ♦



Ryan Radloff
Chief executive of CoinShares and board member at XBT Provider



Trade with Confidence

Founded in 2013, Coinfloor is the longest-established group of cryptocurrency exchanges for institutional and sophisticated investors and traders. We enable the convergence between traditional finance and the burgeoning cryptocurrency markets, enabling more people to invest and trade in one of the most innovative asset classes of our time.

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