Crypto Tokens: The Good, The Bad, and The Ugly

Ravi Menon
Managing Director, Monetary Authority of Singapore

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Ladies and gentlemen, good afternoon. And to all our foreign guests, welcome to Singapore.

This is a conference named after Money. Money has been with us for at least 5000 years. And over the last 300 years or so, we have come to accept Money as being issued by central banks whose mission in life is to safeguard its value.

Now, along comes a new phenomenon – *crypto* money or currency or asset. The past year has seen explosive growth in the trading and use of these crypto assets. We have also seen a roller-coaster ride in their prices.

- Bitcoin – the most well-known of the crypto currencies or assets - hit a high of nearly US$20, 000 in December last year.
- And then lost two-thirds of its value in just over a month.

MAS has been watching the crypto space with great interest. Our views are still evolving but let me share with you the current state of our thinking and our evolving regulatory approach.

- I will use the more generic term "crypto tokens" rather than "crypto currencies" or "crypto assets".
- Crypto tokens began life as the medium of exchange within the blockchain ecosystem.
- But the token has now assumed a life of its own, outside the blockchain.

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Are crypto tokens money?

A common use case for crypto tokens is payment. But does that make them Money?

Money – as we learnt in Economics 101 – serves three functions: as a medium of exchange, a store of value, and a unit of account. No crypto token currently meets these three functions in sufficient measure to qualify as Money.

- My colleagues on the Financial Stability Board – Agustin Carstens and Mark Carney – have spoken at length on this subject recently, with erudition and eloquence.
- Let me briefly echo some of the key points.

With the possible exception of the dark web, crypto tokens are not widely accepted as a medium of exchange in any market, let alone across any variety of transactions.

- Payment transactions in crypto tokens are often slower and more expensive than conventional electronic transfers of funds.

Crypto tokens cannot be a store of value if their prices fluctuate so much.

- Since the beginning of last year, the daily value of Bitcoin against the US Dollar has fluctuated about 20 times more than the Singapore Dollar did against the US Dollar.
- People may buy some crypto tokens to speculate on their values. But with such volatility, I doubt they will put their retirement savings into them.

Crypto tokens also fail as a unit of account. How many entities do we know of, which maintain their financial statements in crypto tokens?

So, does it mean that crypto tokens can never become Money? With technology, we can never say never.

- A second generation of crypto tokens is emerging, to address some of the current challenges related to network congestion, transaction time, energy costs, money laundering risks, and importantly, price stability.
- Some of the best minds in the field are applying their creative energies to make crypto tokens mainstream.
- Not all developers and programmers in the crypto world are anti-establishment anarchists.
  - Many may have been 10 years ago, but a growing number are married and have kids now!
  - They know the value of stability.

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The litmus test will be public trust and acceptance. Basically, the history of privately issued money has not been an inspiring one. Will people put their faith in Money that is not backed by a trusted public institution like a central bank dedicated to protecting its value?

- Perhaps - if an algorithm can mimic the reaction function of a central bank and preserve the value of the crypto token better than central banks can do with respect to fiat currencies.
- We have to wait and see.

The good, bad, and ugly of crypto tokens

Whether crypto tokens become Money or not, they are here and they pose a variety of issues – the good, the bad, and the ugly.

Let me start with the *good*. As many have pointed out, far more significant than the crypto token is the underlying blockchain technology that these tokens help to power. The blockchain has two distinct characteristics that hold promise.

- First, it is a *distributed ledger*. It provides a record of who owns a given asset at any moment in time and an immutable record of all transactions in that asset.
- Second, it is a *protocol for establishing trust* among diverse parties in a decentralised system:
  - where everyone has access to the *same record*;
  - the data are secured by *advanced cryptography*; and
  - transactions are executed by *smart contracts* in accordance with pre-agreed terms.

The blockchain is suited for applications where it is important to know the histories of ownership but there is no trusted central party or reliance on a central party is inefficient or costly.

- Take supply chain management for instance.
  - Blockchains can potentially provide the means for registering, certifying, and tracking the movement of goods across the supply chain, at low cost and low risk.
- Or trade finance.
  - There are already successful proofs-of-concept by banks that show how blockchains can make the trade finance process safer and more efficient.

One of the potentially strongest use cases of crypto tokens is to facilitate cross-border payments in traditional currencies.

- This is the challenge that Singapore's Project Ubin has set itself to solve: to use blockchain technology to enable entities across jurisdictions to make payments to one another:
  - without intermediaries;
  - with greater speed and efficiency; and
  - at lower risk and cost.
- Following two successful proofs-of-concept domestically, MAS has entered a collaboration with the Bank of Canada to test and develop a cross-border solution using crypto tokens issued by the two central banks.

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But as with crypto tokens, there is a fair amount of hype around blockchains.

- The blockchain is not a panacea to the problems of inefficiency and cost that we face in many economic transactions and processes.
- It does not make sense to put everything on the blockchain.
- Not all use cases being experimented on will succeed.

Now, the *bad*. The anonymity of crypto tokens has unfortunately made them well suited for facilitating illicit transactions.

- A significant portion of Bitcoin transactions globally is suspected to be for illicit purposes.
- Questions abound as to how sanctions lists, black lists, KYC or anti-money laundering controls apply in crypto token transactions.

Crypto tokens have also facilitated ransomware – one of the fastest growing cyber crimes.

- Cyber criminals inject a malware into computers and restrict their access to files, often threatening permanent data destruction unless a ransom is paid – nearly always in the form of Bitcoins which do not leave a trace.

Finally, the *ugly*. Crypto tokens have sparked a speculative fever across the world, with a vicious cycle of astronomical prices drawing a growing number of investors sparking further exponential price increases.

- History has shown us repeatedly – from Dutch tulips to South Sea stocks – that speculative bubbles eventually end very badly.
- The recent crash in prices ought to be a warning signal. But the marketing pitch by crypto token operators to seize the current lower prices as a buying opportunity only serves to illustrate how unstable, risky, and ugly this game has become.

Investors in schemes involving crypto tokens may also be exposed to a heightened risk of fraud. These schemes are often conducted online by operators whose authenticity and credibility are difficult to verify.

Managing crypto risks

The challenge for central banks and regulators is this: how can we harness the potentially transformative benefits of blockchain technology and crypto tokens while containing some of their risks?

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MAS has to-date chosen not to regulate crypto tokens directly. But we are:

- focusing on the *activities* associated with crypto tokens,
- evaluating the different kinds of *risks* these activities pose, and
- considering the appropriate regulatory *responses*,
- all the while, seeking to ensure that we do not stifle innovation.

The key risks MAS is monitoring in the crypto world are in the areas of financial stability, money laundering, investor protection, and market functioning.

Financial stability

MAS and other regulators are studying the nexus between the crypto world and the financial system to assess how risks to financial stability may be transmitted:

- market risk from the direct exposure of financial institutions to crypto tokens;
- credit risk through unsecured lending to crypto token businesses; and

- leverage when borrowers pledge crypto tokens as collateral to borrow and buy more crypto tokens.

MAS assesses that the nature and scale of crypto token activities in Singapore do not currently pose a significant risk to financial stability. But this situation could change, and so we are closely watching this space.

Given the gaps in traditional information sources, MAS is exploring some unconventional ways in which to gather data about the scale and scope of crypto token related activities.

- One, the crypto token blockchains themselves can provide a wealth of information - including time stamps, recipient and sender addresses.
- Two, the Application Programming Interfaces or APIs provided by crypto-exchanges present real-time insights on current flows in the crypto market, including information on the fiat currencies that are being exchanged for crypto tokens.

Money laundering

A clear and present danger posed by some crypto token activity is money laundering and terrorism financing.

- Intermediaries dealing in crypto tokens are already required to report any suspicious transactions to the Commercial Affairs Department.
- In addition, the proposed Payment Services Bill will require intermediaries that buy, sell or exchange virtual currencies to specifically address money laundering and terrorism financing risks.
- Intermediaries will be required to carry out customer due diligence and put in place controls and processes that are commensurate with their risks.

Investor protection

Investor protection is another immediate concern arising from the crypto mania.

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Where the crypto tokens represent ownership or a security interest over an issuer's assets or any property, or a debt owed by the issuer, they may be regarded as securities under the Securities and Futures Act.

- This means that unless exempted:
  - issuers must comply with prospectus requirements prior to the offer of such tokens;
  - intermediaries dealing in such tokens must meet licensing requirements; and
  - platforms facilitating secondary trading of tokens must be approved or recognised by MAS.

With respect to the investors, MAS' priority has been to make them aware of the risks of putting their money in crypto tokens.

- We have advised the public to act with extreme caution should they wish to invest in crypto tokens.
    - They could lose their shirts if prices plunge.
    - And they have no regulatory protection if there is fraud.

Market functioning

There is also the issue of market integrity and functioning. Several cryptocurrency exchanges abroad have suffered cyber attacks and theft of their crypto tokens.

- There are also rumours and reports of rampant market manipulation and other fraudulent activities on crypto-exchanges.

We are watching with interest developments in the US, where *futures* contracts based on crypto tokens have been introduced on regulated exchanges. There may be some advantages here from a market integrity perspective.

- These exchanges have clear rules governing trade and post-trade activities.
- Such products could also potentially have a stabilising influence on crypto token prices as they provide two-way hedging opportunities for investors.

But regulation cannot address all the concerns around crypto tokens.

- The industry too has a part to play in strengthening the ecosystem, for instance, by adopting best practices around transparency, cybersecurity, and record-keeping.

Guarding against Gresham's Law

I have spoken about the good, bad, and ugly of crypto tokens. To be more exact, it is the *uses* of crypto tokens that assume these qualities.

- Like Money, crypto tokens can a force for good or bad.
- Lest we forget, money is not the root of all evil; it is the *love of* money that is so.
- The same applies to crypto tokens – it is the enchantment with these tokens as a way to make a quick buck and their abuse for illicit activities that are at the root of our concerns.

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There is an old axiom in economics called Gresham's Law, which is loosely interpreted as "bad money drives out good".

- We must work together – regulators and the crypto industry – to make sure that bad money does not take hold.
- And that a new generation of crypto tokens emerges, that harnesses the potential of blockchain technology for social good while mitigating the risks today's tokens pose.

This is a future worth securing and I hope that some of the talents gathered in this hall will help to make it happen. Thank you.