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Erik Thedéen: Crypto-assets – risks and opportunities

"The technology behind crypto-assets has the potential to create value for society, but crypto-assets like Bitcoin also pose significant risks," said Erik Thedéen, when he spoke about the development of crypto-assets yesterday at a seminar arranged by the Swedish Investor Relations Association.

"An institution that describes itself as sustainable should think carefully before facilitating trade or holding in assets with such a significant negative environmental impact. That is something I am going to discuss today," Erik Thedéen said as he commenced the seminar.

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It is an exciting topic I've been asked to speak about today – the development of so-called crypto-assets and FI's view on these. The most famous crypto-asset Bitcoin, which was introduced in 2009, was also the first. Today, there are more than 10,000 different crypto-asset variants, with Bitcoin and Ethereum being the largest.

There has been a lot of media focus on crypto-assets, especially recently. Their prices have increased dramatically and also periodically fallen dramatically. People ranging from the United States Secretary of the Treasury Janet Yellen to Tesla's founder Elon Musk have commented on them. Bitcoin has even been established as a legal tender in El Salvador. This phenomenon has generated a lot of interest and subsequently a lot of opinions: from a borderline-religious belief in the blessings of Bitcoin to the view that it is all a scam.

Crypto-assets fall outside of the regulatory perimeter. So why, you may ask, should we, as a supervisory authority, comment on it?

Crypto-assets are relevant to our four objectives: financial stability, well-functioning markets, consumer protection and sustainability. Crypto-asset trading is subject to regulation if the crypto-assets are part of a financial instrument such as a tracker certificate – and we are working towards ensuring that they will be regulated even when this is not the case.

So, what are crypto-assets? It is worth taking a minute to understand the terminology.

Distributed Ledger Technology (DLT) is the underlying technology used for crypto-assets. A ledger is somewhere to store data. A distributed ledger is simply a ledger that is not centralised – i.e., the data is stored in a number of places. In practice, it is kept in computers; a distributed ledger means there is a copy of the data on many computers at the same time. Users are therefore not dependent on a central counterpart for storing the data.

Blockchain is the most common type of ledger technology. The ledger consists of blocks that are shared between the users who have access to it. A block contains a transaction of value that the user wishes to execute. To keep the system safe, the transaction needs to be approved by other users. If the transaction is approved, it is connected to the last approved block and creates a chain – thus the name blockchain.

So blockchain is an application of ledger technology. Then, what are crypto-assets? Crypto-asset is an umbrella term for a digital representation of value, or rights, that can be transferred or stored electronically with the help of digital ledger technology. Taking Bitcoin as an example, a bitcoin represents a digital value, and with the help of blockchain technology, bitcoins are transferred from one user to another.

It is common for crypto-assets to be described as money, e.g., “cryptocurrencies”. But this is not quite right, because they do not meet the criteria we pose to designate something as money. They do not have a stable value – in fact, we have seen dramatic price volatility for the largest crypto-assets. They are also not – partly due to their price instability - broadly accepted as a means payment – few stores accept bitcoins. The technology can also only handle a limited number of transaction in a given time period, which means that it would be challenging for Bitcoin to become a more broadly used means of payment.

Could it instead be regarded as an asset, like art or gold? There is an argument to be made for this. Crypto-assets are usually not bought with the intention of being used as a method of payment, but rather in the hope that they will increase in value over time, like art.

There are differences, however. Crypto-assets cannot be used for many things and they lack aesthetic value. Most who buy them do so for speculative purposes. There are those who claim that buying crypto-assets is akin to gambling and that the price movements show that it is a speculative bubble.

At the same time, it is important to note that blockchain and distributed ledger technology has the potential for positive application. Distributed ledger technology removes the need for a middleman, which may reduce transaction costs. For instance, it could be used to increase efficiency in stock trading and when financial transactions are liquidated or registered in central securities depositories.

Blockchain technology can also be used for so-called smart contracts – a protocol, or computer program, saved in the blockchain that automatically executes a contract. This means that if two parties enter into a contract, the smart contract automatically carries out the payment after the relevant criteria are fulfilled. This could be used, for example, in insurance for quick and transparent claims handling.

So, what does crypto-asset regulation look like today?

Depending on the construction of the crypto-asset, it may be subject to e-money regulations or regulations governing the trading of financial instruments. The majority of crypto-assets are not subject to these, however, but fall outside of Finansinspektionen's remit. The fact that crypto-assets in most cases are unregulated means that they are not subject to consumer protection regulations.

If crypto-assets are traded as part of financial instruments, the financial instruments are subject to our supervision. The sale of the products to consumers is subject to existing laws. Here in Sweden, the financial instruments of this type that are available for sale are primarily a type of tracker certificate, which is based on bitcoin. It follows Bitcoin's price, so investing in this instrument is very similar to investing directly in Bitcoin. Even if the sale of tracker certificates is subject to regulation, this does not mitigate the risks that emerge due to the crypto-asset itself being unregulated.

If a firm sells a financial instrument, the firm needs to comply with existing requirements related to establishing a target audience, distributing the product and maintaining a duty of care towards the customer. Firms who sell crypto-assets directly are not subject to any such requirements.

It would be difficult for us to stop the trading in these instruments under current legislation, even if we believe that there are significant consumer protection and sustainability concerns. We assess prospectuses submitted to us, but we do not approve the product under the prospectus regulations. We need new regulations that are better equipped to manage the risks we see.

The European Commission has presented a proposal for new legislation, Markets in Crypto Assets ('MiCA'). The proposal aims to increase consumer protection and legal certainty and combat risks to financial stability. It is also supposed to ensure that existing rules do not hinder innovation and the use of new technologies that can add societal value.

The idea is that all crypto-assets must be subject to some consumer protection rules, and crypto-assets posing a greater risk will be subject to more stringent requirements. For example, crypto-assets, like stablecoins, will require authorisation from us, and the largest stablecoins will be under EBA supervision. Crypto-asset service providers, such as those providing digital wallets, exchange services and crypto-trading platforms will also be required to apply for authorisation. Further, there are provisions around complaints handling, conflicts of interest and outsourcing. Those who deal with the riskiest crypto-assets will be subject to capital requirements and the issuers will be required to have resolution plans.

The European Commission is also planning a pilot project around distributed ledger technology. The project would allow market infrastructures to test the application of DLT in the issuance, trading and settlement of financial instruments – something that is not permitted under existing legislation.

Supervisory authorities and central banks worldwide have warned consumers of the risks of trading in crypto-assets. What risks are we concerned about? Amongst other things, there is an absence of consumer protection regulations. Consumers need to understand that they are investing in assets with a high degree of price volatility. There are also examples of pure scams – carried out e.g., through Initial Coin Offerings.

There are also environmental aspects – such as the high electricity usage by the largest crypto-assets. And financial stability risks, which even if they are small today may become significant in the future. There is also a risk that crypto-assets will be used for money laundering and terrorist financing and as a way to avoid sanctions. I am going to discuss some of these risks in more detail.

First, let's look at the consumer protection risks. It's not just about price volatility. One of the biggest challenges when it comes to crypto-assets is valuing them. Crypto-assets lack inherent value. If you compare crypto-assets with the valuation of stocks or commodities, there are often fundamental factors that can be used to determine the price. You might reference information in balance sheets and look at the macro-economic climate. Crypto-assets, however, do not generate any cash flow and have no physical use. This makes crypto-assets difficult, if not impossible, to value accurately.

The British supervisory authority (FCA) conducted a technical analysis of different crypto-asset valuation models. They compared nine different models and looked at what prices they generated for a given crypto-asset. The models

showed large variations in valuing the same asset. The FCA's conclusion was that none of the models could be regarded as reliable.

In practice, this means that it is impossible for a consumer – and others – to accurately value a crypto-asset. It follows that purchases of crypto-assets ought to be regarded as primarily speculative. Speculative trading is of course not prohibited, but if you as a consumer enter into this type of high-risk transaction you need to be aware of the risks, and that you may lose your whole investment.

Another reason we are sceptical about the trade in crypto-assets today is the environmental impact. The largest crypto-assets require extremely high electricity usage.

To understand why they use so much electricity, we need to understand the underlying technology. In a decentralised system like blockchain, there is no central counterpart. Rather, trust is created between parties by following a technical protocol. To ensure that the data that is recorded on the shared ledger is correct, there is a consensus mechanism.

For Bitcoin and Ethereum, this consensus mechanism is known as proof-of-work. The premise is that all participants compete in guessing the right answer to a task, thus gaining the right to add new data to the ledger. The participant who wins the competition gets paid for their work in new bitcoin. The disadvantage of the proof-of-work model is that all participants have an incentive to work on each task simultaneously. It is an extremely inefficient method, and the computers that are used to guess the right answer use an enormous amount of electricity. The electricity that is used is primarily sourced from fossil fuels such as coal and oil. Electricity consumption also increases in line with the market valuation. This is because the payout that participants receive for getting the right answer also increases with the market valuation, which increases their incentive to use more electricity and computers for the task.

There are, however, other crypto-assets who use alternative consensus mechanisms, such as proof-of-stake, which require significantly less energy.

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FI is working with the Environmental Protection Agency and others to examine this issue more closely.

There is a significant risk that crypto-assets will be used for criminal purposes since there is no central counterpart responsible for overseeing the transactions. It can be difficult, if not impossible, to identify who is carrying out the transaction. And no one knows where the money is coming from. It is therefore

possible to transfer a significant number of crypto-assets outside of the banking system with the help of a blockchain and subsequently convert them to normal currency.

The ability to make anonymous payments has been around for a long time – through the use of cash. But crypto-assets can make life easier still for criminals. If you carry out your criminal activities with cash, you need to figure out a way to transport and store the cash. Bitcoin can be accessed anywhere, storage is not difficult, and it is possible to make quick and relatively anonymous transfers between countries.

A notable example is the attack against Colonial Pipeline, one of the USA's most important oil pipelines. It was a ransomware attack, where hackers locked computers and demanded a large sum in bitcoin to unlock them. The firm paid SEK 36 million in ransom. The authorities, however, managed to recoup a significant portion of this sum. This shows that even if it is more difficult, it is not impossible to trace bitcoin.

I think financial firms need to ask themselves whether they really want to invest in or encourage the growth of assets that can be widely used by criminals, where the asset has no obvious valuable legitimate use.

So, what do we think about the future? What do we wish to see?

We expect financial market participants to take appropriate responsibility. Banks and asset managers who distribute financial instruments with underlying crypto-assets must consider their duty of care towards the customer, and this also applies to anyone facilitating trade in crypto-assets. Market participants also need to consider the sustainability aspect. The electricity consumption of crypto-assets needs to be reduced, either by existing crypto-assets moving to more energy-efficient consensus mechanisms or through a transition to new crypto-assets. The risk for criminality needs to be managed.

We also want to see better and clearer regulation in this area, and it is right that this regulation is being developed by international organisations. We will continue to participate in this work through our participation in international organisations such as IOSCO and the Financial Stability Board – and of course through continued EU work.

While we need to manage the risks from new technology, society also needs to uphold innovation. We should embrace the positive contributions that this technology can make. For financial services, this may be about reducing different types of transaction costs and increasing accessibility of financial services. Time will tell how technology will develop and what constructive uses may emerge.

Thank you for your time.