

Investment using virtual currency or distributed ledger technology

We want to thank ESMA for making the call for evidence to improve the understanding of the relevance of virtual currencies and digital ledger technology.

Q 9:

How is distributed ledger technology being used or likely to be used in relation to the issuance, distribution, trading, recording of transactions and ownership of 'traditional' securities or investment products and why?

The distributed ledger technology will be used to record ownership of literally all types of financial assets. A new global marketplace will evolve, where all types of assets and instruments will be traded. The marketplace will be universal and ubiquitous, similar to the Internet itself, and any asset and instrument will be exchangeable into any other asset or instrument.

The distributed ledger technology is one of the most profound innovations of humankind, because independent of location contracting parties can execute transactions step by step and have direct ownership. The step-by-step procedure is a safeguard against any misbehavior or fraud between transacting parties and dramatically reduces the risk associated with transactions. Direct ownership reduces complexity.

In the history of humankind, step-by-step transactions were only possible, when individuals had face-to-face contact. A shopping experience at the local bakery illustrates this point: the buyer points to the bread that he wants to buy. The shop assistant places the bread on the counter and when the customer has put the money on the counter, he can take the bread and leave. At any time, the shop assistant or customer can interrupt the process.

If transactions take place between individuals at different locations, a step-by-step procedure is not feasible. An online shopping experience illustrates the issue; the merchant, who sells a product online for 50 EUR can book the receipt of a 50 EUR credit card payment, but actual settlement of this transaction occurs days or weeks later, when he receives the money. During this period, the merchant is at risk that for any reason the payment might not occur. Delivery and settlement of financial transactions be they stock purchases, buying or selling of currencies or other financial assets suffer from the same deficiency. Today, delivery and settlement of financial transactions is batch-based and occurs with a delay of two or more business days. This leads to exponential accumulation of risk with specific counterparties, who are intermediaries and stand in the way of direct ownership. The events leading to the Lehman bankruptcy document the risks - financial institutions, which had exposure to Lehman, could only transfer assets with a two-business-day delay or in some cases not at all. On an operational level there is another issue with the banking system of today: interest rate payments occur inter-day on every business day, and no intraday interest payments are possible. This distorts the dynamics of financial markets, as is visible in the carry trade phenomenon of the foreign exchange markets.

The distributed ledger technology facilitates step-by-step transactions and settlement is immediate. If contracting parties A and B decide to exchange assets X and Y, the transfer occurs synchronous and step-by-step; it cannot happen that just one side of the transaction is executed. The distributed ledger technology operates at a global scale and is a notary service. The technology is highly efficient and

dramatically reduces risks associated with any type of transactions. We expect that market participants will have an interest to use this technology to record ownership of any type of asset or instrument.

Today, there exists the so-called colored coin protocol, see www.coloredcoins.org. The protocol makes it easy to use the distributed ledger technology for any type of financial instrument. A financial institution can for example buy one Bitcoin on the market and then divide this one Bitcoin into thousand increments. It can then use each one of those increments as a so-called colored coin and specify with the colored coin protocol the terms and conditions of that particular financial instrument.

A colored coin issued by the financial institution may represent a share of the company itself, or represent any type of 'I_owe_you', such as the commitment to make a payment of X EUR in n days to the holder of the colored coin, if so requested. The colored coin protocol makes it possible to use the distributed ledger technology to deliver and settle any type of financial transaction of any asset within minutes. Colored coins can have ISIN numbers to map them into the existing back office and risk management systems of banks making the system compatible with the existing financial architecture.

The distributed ledger technology offers Immediate settlement in a non-centralized framework at ultra-low costs; this will pave the way for the emergence of a global marketplace for all asset classes and instruments that uses this system.

The crisis of 2008 has exposed the shortcomings of the existing banking architecture. Initially, there was the hope that regulators would be able to enforce change and dramatically alter the risk profile of the banking system. This has not happened; there have been changes, but the core issues have not been addressed. The distributed ledger technology is the elephant in the room that can rewire the global banking and market architecture and become the backbone of a highly efficient financial system. The future financial system will include a global marketplace; literally everyone will have direct access to this market as is the case for the Internet itself. The market will be a level playing field, where any financial asset can be traded directly with any other asset and instrument. The operational efficiency of the marketplace will foster liquidity. Instruments will have intraday yield curves, which will cushion imbalances of demand and supply.

Q 10:

To what extent is the use of distributed ledger technology in relation to ‘traditional’ securities or investment products being separated from an associated virtual currency and, if so, how and why?

In the solution outlined above, the relevance of virtual currencies from an economic and financial point of view will be minimal. Issuers of colored coins will buy virtual currencies to securitize financial assets, but as explained above, they can use a small fraction of a Bitcoin to issue a colored coin. One Bitcoin can be sliced into one million increments; so in theory a colored coin needs to only include ‘1 millionth of a Bitcoin’; if Bitcoins trade at a price of 300 USD per Bitcoin, the intrinsic value of the virtual currency per colored coin will be 0.0003 USD, a negligible amount compared to the market value of the colored coin. The price volatility of the virtual currency will therefore not impact the market price of colored coins.

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