

# 10 points ...

## on blockchain in finance and financial markets

This KWM BriefSheet sets out 10 points on blockchain and the way it can change the fabric of finance

- **It is more than bitcoin.** Blockchain is the technology behind bitcoin but its use far exceeds digital currencies. The importance of blockchain to finance and financial markets is its potential *beyond* bitcoin.
- **A blockchain is a transaction record ...** The “chain” is a record of transactions, each one following the one before. Ownership comes from the chain of previous transactions. A pre-digital analogy is early land title and the package of deeds showing all of the transactions which led from the original grant to the current ownership.
- **... independently verified by others ...** The transactions are verified by third parties (miners) to ensure that the necessary requirements are met, for example that a seller is the owner of the thing which is being sold. This verification is done in order and bundled into “blocks” of data for a number of transactions. Once verified, these blocks are added to the chain of previous transactions, lengthening the “blockchain”. Continuing the analogy, this is like those packages of land deeds being checked by other people each time a transactions happens, to make sure that the transaction is valid.
- **... and held on a distributed ledger.** That verified record of transactions (the blockchain) is not just held in one place but held in many places at once, digitally. Each time a block of transactions is verified then it is added to the blockchain (in encrypted form) held in all of those places. This is like creating multiple identical copies of that deed package on the internet, with each of them being a “true” record of the history and current ownership. Safety is enhanced as fraudulent changes to one copy in one place is not enough to change the record.
- **To work, it does not need an open system ...** Bitcoin uses an open blockchain, meaning that anyone with access can participate. But this is not essential. For example, it could be used by a closed group of financial institutions to record transactions between them. Or even to record transactions within a financial institution itself. Unlike “miners” in bitcoin, participants in a private blockchain might not need to receive rewards to maintain the system.
- **... or a “token” or “coin”.** Bitcoin works on a token of value (the bitcoin) which is transferred on the bitcoin blockchain. This could feature in some financial market use cases. But this is not needed for blockchain to be useful.
- **Its value is in increased efficiency and safety...** By creating a collaborative record of transactions, blockchain enables decentralised shared financial market infrastructure. It allows joint outsourcing of back-office functions, increasing the compatibility of the connections between institutions and contributes to the cybersecurity of financial market transaction records through the maintenance of records on a single ledger in multiple places.
- **... and could be welcomed by government and regulators alike.** The immutability, security and speed of the blockchain makes it attractive to government. The Australian Government is exploring government and commercial use-cases of the technology. Further, without the pseudo-anonymity of bitcoin, blockchain could be encouraged by regulators. One reason is the visibility which it gives regulators of transactions as they happen.
- **“Smart contracts” amplify its change potential ...** If the distributed ledger is combined with the recorded transactions “self-executing” then “smart contracts” are created. These activate automatically when lifecycle events occur in the contracts. These are not only payments and deliveries, but also other events such as credit or succession events under derivative contracts. This already works on centralised financial market infrastructure like clearing houses and trade warehouses and it could also work on decentralised financial market infrastructure created using blockchain.
- **... although there are some challenges.** These include confidence that the encryption maintains the confidentiality of transactions and parties, the requirement for uniform operational protocols, the need to scale and the cost of interaction with legacy systems. Also, like centralised market infrastructure, there are legal issues related to regulatory intervention to be resolved, such as those which necessarily arise in the insolvency of a participant, or in systemic instability.

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