



BITCOIN: BITS AND BLOCKS OF REAL ESTATE

Could the blockchain introduce more liquidity and volatility into real estate prices?

For some, bitcoin remains shrouded in mystery. This article offers an overview of bitcoin, and examines its relevance to the real estate industry. The strengths, weaknesses, opportunities and threats for bitcoin in real estate are encapsulated in a SWOT analysis. In our view, price volatility and reputational issues limit Bitcoin's value as a currency for buying property for now, but the blockchain has huge long-term potential to speed and facilitate transactions. However, this would increase liquidity, and inevitability price volatility.

NOT THE FAIREST OF THEM ALL

Bitcoin appears to be inching into real estate – but what exactly is it?

It is a peer-to-peer cryptocurrency. In English: Bitcoin is an electronic form of payment, neither controlled by a central authority or a clearing agent, nor printed like the sterling or dollars. Instead, they are mined (created) by individuals and organisations around the globe, managed by nodes (computers connected to the blockchain), and secured through cryptography.

Created with the intent to simplify and expedite online payments by circumventing third-party processors and currency controls, bitcoin is said to provide more control of one's own transactions across borders. There is no need to consider hidden charges, identity theft, and banking hours; there is no counterparty risk. Lack of replicability and a finite supply of 21 million bitcoins even imply in-built inflation control.

The number of bitcoins in circulation has almost tripled in the last six years with 80% of supply now in use, though the number of bitcoin trades in a given week only make up the equivalent of less than 1.0% of the global foreign exchange market.

Its explosion in popularity however, means it has become too popular for its own good. The network, which was not intended to handle such huge volumes of activity, is struggling to keep up. Transactions have become slow. That said, it is really the extreme volatility that spoils bitcoin's reputation. Within two weeks last December, the US dollar value per bitcoin doubled. Intra-day changes of 4.0-5.0% far exceed the volatility of major currencies which average between 0.5% and 1.0%.

LINKING THE BLOCKS

Bitcoins are not the same thing as blockchain. The latter is the underlying technology, which also provides an audit trail. Blockchain involves byzantine mathematical theory with a touch of computer science algorithms. A block is a file containing information such as part of, or entire recent transactions with a reference to the previous block. It is uniquely encrypted and can be decrypted by solving a mathematical puzzle. Miners compete to solve a block, which results in monetary rewards: Bitcoins. Once solved, the block can easily be validated. Due to each block's reference to a prior one, a transaction consist of a sequential collection of these – the blockchain.

The blockchain is an ever growing ledger of transaction records. It can be both, public or private. Instead of a central authority, nodes or network participants reach consensus on the state of the ledger by validating

Bitcoin Price Since 1 Dec 2017 (USD)



Source: CoinDesk

“WHILE THE BITCOIN BLOCKCHAIN WAS DEVELOPED PURPOSELY FOR THE CRYPTOCURRENCY, THE UNDERLYING BLOCKCHAIN TECHNOLOGY CAN BE MODIFIED AND ADAPTED TO APPLICATIONS TRANSCENDING THE GLOBAL FINANCIAL SYSTEM.”

transactions before they are recorded. This is an expensive and time-consuming process that results in a proof of work that can be easily confirmed, but is not easily amended or faked. Any successful attack on one node causes the rest of the network to adapt.

One technology made possible by blockchains is a smart contract. These are virtual, timestamped multiparty agreements that are algorithmically enforceable, auto-executable, traceable and unforgeable. These programs execute exactly as intended by their originators once specified conditions are fulfilled. In other words, if you agreed payment on the 15th of the month, that is when it happens.

While bitcoin inherently supported the basic idea of a smart contract through value transfer from one entity to another, it is limited to the currency use case. Smart contracts enable fulfilment tracking of contractual terms, and to an extent contract lifecycle management.

ARE THESE REALISTIC TOOLS?

Gartner estimated that by 2022, defined impact smart contracts will be used by more than a quarter of global organisations. Accenture research supposes that investment banks could save up to US\$12 bn per annum by embracing blockchain and smart contracts. McKinsey reports that blockchain could save businesses US\$50 bn in B2B transactions by 2021.

While the bitcoin blockchain was developed purposely for the cryptocurrency, the underlying blockchain technology can be modified and adapted to applications transcending the global financial system. Blockchain implications on the property sector could be manifold.

HM Land Registry is currently looking to trial blockchain technology as part of a wide-ranging digitisation effort. Harnessing the

- Quick borderless (currency) transactions. Eliminates currency risks.
- Anonymity in real estate deals.
- Transparent information due to public ledger.
- Indisputable information e.g. on titles and deeds.

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STRENGTH



- Growing blockchain limits transaction speed.
- Information is only as accurate as it is entered.
- Bitcoin's volatile and event driven value can impact property transaction values.
- Hardware can crash, digital bitcoin accounts can be hacked.
- Bitcoin's reputation may impede wider adoption.

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WEAKNESS



- Streamlined due diligence and lease management. Especially when coupled with AI.
- Information synchronisation across geographies increases market transparency.
- New forms of lending or financing through mortgage backed securities.
- Increased liquidity through faster transactions.

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OPPORTUNITY



- Increased liquidity changes the appeal of direct real estate as an asset class.
- Could homogenise value in the real estate market, diminishing diversification benefits.
- More stringent regulations could hamper transaction processes.
- Bitcoin's value could be diminished by alternatives.

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THREAT



registry features and workflow automation capability of blockchain, Sweden's land registry has already successfully completed a two-phased pilot. Land registry copies were shared with relevant parties involved in a transaction, with each step of the sale verified and recorded on the blockchain. Processing time and costs reduced, while both transparency and privacy were achieved by restricting sensitive information to those involved in the deal. With the World Bank estimating that 70% of the global population lacking access to land titling, a process exposed to clerical errors and deception, an immutable digital registry provides assurance.

In more developed real estate markets, this could mean paperless deals across time-zones and jurisdictions. E-recording, e-signing and e-notarising of agreements could benefit international investors in both residential and commercial markets, as well as lenders, property managers and operators.

Smart contracts would be central to the property lifecycle by providing a single source of contract terms with a traceable and comprehensive audit trail. Payments from rent, dividends, and loans could be tracked, managed and uniquely customised, reducing human error and fraud risk.

REAL ESTATE RELEVANCE

Due diligence and lease management aside, increased information symmetry could reduce the need for local expertise, cut costs and speed up the transaction process. Real estate professionals will spend less time on paperwork, releasing them to concentrate on advisory services, allowing clients to leverage their expert knowledge. Investor's home-bias and property risk perception may be reduced. The potential investor pool could deepen, smaller market participants could up their game.

Then again, buoyed liquidity and increased volatility of the real estate asset class could be the result. If real estate behaves more like the liquid asset classes, like equities and bonds, its ability to add diversity to a portfolio will ebb. Market behaviour and valuations may shift.

Is there an appetite for direct real estate to be more liquid? Property transactions can take months to complete due to the deal sizes and marketing periods. Transaction timing and price can become uncertain

LESS TIME ON PAPERWORK

REAL ESTATE PROFESSIONALS WILL SPEND LESS TIME ON PAPERWORK, RELEASING THEM TO CONCENTRATE ON ADVISORY SERVICES, ALLOWING CLIENTS TO LEVERAGE THEIR EXPERT KNOWLEDGE.



as a deal conclusion draws out. Investors may have to put up with a discount on the valuation by the time moneys flow. A more liquid market place can reduce that risk and benefit the increasing preference for short-term performance measurements for investors. Upward pressures on the yield for large properties could also be eased.

On the other hand, its illiquid nature creates a safe haven. In a market panic, direct property cannot be sold at the touch of a button like equities or bonds, providing time for the investor to reflect on the decision to sell after the initial urge to rush for the exit has passed. Conversely in the late cycle of a bull run, the slower transaction time provides more opportunity for a reality check on high prices.

Furthermore, debt financing through new forms of mortgage backed securities using direct-to-market platforms based on Artificial Intelligence and blockchains could prevent a repeat of price anomalies as seen in the Global Financial Crisis. Asset backed securities would become more accessible to investors.

STILL A LONG WAY TO GO

Blockchain has risks and problems that need resolving before it can become a widely used platform for real estate. The technology must be fully vetted, and stress tested. The legal, tax and regulatory authorities have to adjust the way they monitor activities. All

parties in a transaction need to have adopted the technology.

The blockchain is only as accurate as the manually entered records. The most striking challenge is monitoring the growing network such that nobody gains sufficient influence for a '51% attack': If more than half the nodes on the network are not truthful, the lie becomes the truth. Fraud and hacking remain potential causes of systematic counterparty risk.

Some say, bitcoin is already mainstream. Could bitcoin become a customary settlement currency for property transactions? Possibly. The property sector may not mind the longer settlement times and high transaction fees compared to other virtual currencies. Those fees are dwarfed by the large ticket sizes in real estate transactions. However, bitcoin is restricted in its features, and only one of many virtual currencies in circulation.

Blockchain on the other hand has the wider impact potential, where the question is not so much an "if", rather a "how" and

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"when". Beyond many hypothetical uses and benefits, this hyped technology will unlikely present a threat to real estate professionals and capital value anytime soon. Property remains a people business, unique to a geography. More pertinent is the liquidity

question. Could direct property end up mirroring property equities, where net asset values are regularly impacted by short-term changes in market sentiment? Last but not least, is the real estate sector ready to switch up its modus operandi?



IS THERE AN APPETITE FOR DIRECT REAL ESTATE TO BE MORE LIQUID?

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