

Title: Real World Asset (RWA) tokenization: opportunities and challenges

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Transaction costs, information asymmetry, significant financial entry barriers and low levels of liquidity usually prevent individual investors to take advantage of real-estate asset class. This is obviously detrimental for individual investors' portfolio diversification and risk management and gives free rein to institutional investors to take the lion's share.

Historically, the main characteristic of financial innovation (both product and process innovation) is to reduce (if not suppress) all these impediments and give investors access to a broader range of asset classes and services, whatever their size, location, and wealth. Real estate investment trusts (such as SCPI in France) are instances of product innovation that gives individual investors access to real estate by investing in a diversified portfolio of real estate managed by a wealth management company. Real estate platforms are instances of process innovation whereby a growing number of individual investors have access to assets that were hitherto reserved to wealthy professional investors. Real estate crowdfunding platforms also allows promoters to raise funds. Digitalization and Fintech obviously pick up the pace of democratization and diversification.

However, barriers and limits still exist. Subscription and management fees and transaction costs remain high, and platforms' portfolios usually consist of a limited number of investment opportunities that significantly limit diversification, especially geographical diversification. Furthermore, ownership issues are often unclear. Indeed, investing in real estate-related products gives access to the return of the product, but usually not to ownership of the underlying asset.

Considering these limitations, tokenization of real-world assets (RWA) is an innovative fractional ownership asset to access real estate by further mitigating the aforementioned limitations of current real estate products and processes¹. Broadly speaking, real-world tokenization is the process of asset fractionalization by which a real-world asset (be it financial or physical) is transformed into a freely transferable fungible or non-fungible token on a blockchain (figure 1). Each token not only represents a specific fraction of the real-world asset, but also ownership. The features are commonly known and cannot be altered once the token is minted.

¹ Examples of distributors of tokenized real estate assets are Reental, Investbay, Blochome, Brickwise, and Metawealth.

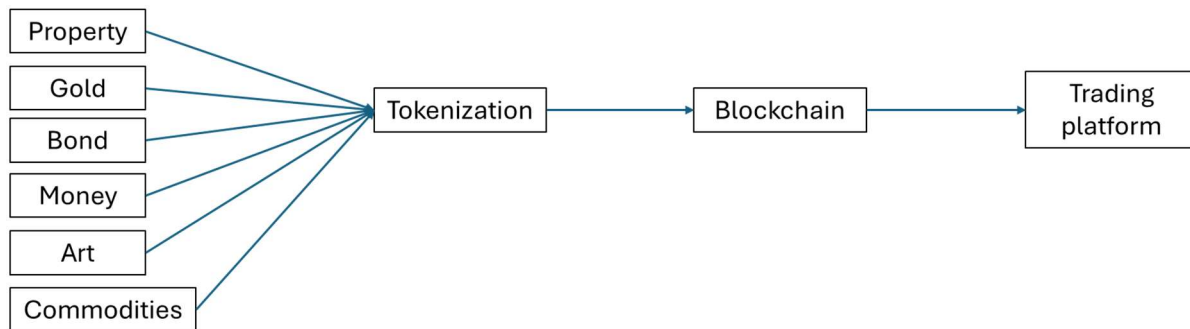


Figure 1: Tokenization process

Advantages of tokenized RWA over existing financial products and processes are numerous:

- Transparency and immutability: permissionless blockchain is a secure, transparent and freely auditable ledger that records every transaction of a specific token. This feature allows investors to know in real-time and with certainty who minted the token, the transaction history of a token, its market value, and who is owning it.
- Ownership: contrary to existing asset fractionalization solutions, a token is not a mere digital sign of an underlying RWA, but an ownership certificate. Accordingly, if the issuer bankrupts, it neither alters the value of the token (since the value of the token is pegged to the underlying asset, not to the identity of the issuer) nor raises complex and costly questions about ownership and recovery.
- Accessibility and democratization: issuer can tokenize a RWA in an arbitrarily number of tokens. The larger the number, the smaller amount an investor must spent to access the tokenized RWA.
- Liquidity: *ceteris paribus*, market liquidity grows as the number of investors grow. Improved liquidity reduces risk and improves price discovery and risk management. Furthermore, blockchain-based transactions being borderless, any investor can invest in any project, whatever its location and local regulation. Accordingly, liquidity favors diversification and improves the efficiency of allocation of financial resources.
- Transaction costs: token transactions and settlements do not require intermediaries or red tape. RWA-platforms are basically smart contract platforms whereby transactors agree with the terms of a smart contract and perform swap-like transactions. This significantly enlarges transaction opportunities and reduces transaction costs. For instance, it is possible to buy a tokenized property with, say, tokenized gold or another tokenized property.

Even though RWA tokenization has the potential to unlock prevailing constraints and barriers to democratization and liquidity of real-estate markets, it is no panacea. The main difficulty is not (anymore) of a technological nature. Nowadays, generating tokens at low cost (relatively to non-blockchain technology) in an appropriate standard (usually Ethereum Request for Comment, or ERC, tokens), developing smart contracts, and selling tokens on a platform is much less difficult and costly than a few years ago. For example, the integration of the tokenization platform Centrifuge, the investment and lending platform Morpho and the wallet provider Coinbase works seamlessly and only requires a minimal command of decentralized finance.

The main difficulty is about trust requirement. Indeed, what matters most is not how tokenization process is performed, but by whom: Is valuation process and risk assessment processes transparent? Who has custody over the asset?

- Valuation and risk assessment: in a very optimistic perspective, if we assume that tokenization improves market liquidity, it will also improve market efficiency and price discovery. Thus, even though the initial valuation and oracle feed are incorrect and do not accurately reflect the present value of the tokenized RWA, market valuation would accurately perform this task *ex post*, *provided* information is reliable enough for investors to make informed investment decisions. Token issuers and platforms should thus provide investors with accurate information. Information disclosure can be voluntary. Indeed, in a competitive process, it may be of the interest of both issuers and platforms to disclose as much information as possible on the traded token to attract as much investors as possible and create positive network externalities. Information disclosure may also be regulated, standardized, and compulsory. However, for now, many platforms are still very opaque about their valuation process² and the secondary market is not liquid enough for price discovery. Furthermore, risk assessment is usually performed by centralized firms (such as rating agencies or large investment funds) with opaque assessment mechanisms. They cannot be audited. They must be trusted. However, it is to be noticed that this is not necessarily the case. Indeed, some trading platforms (such as Morpho) devise their own transparent and hard-coded risk assessment algorithms and curate investment vaults with blockchain-specific analytics firms (such as B.Protocol).
- Registration and custody: issues of registration and custody are also prime concerns in RWA. Lawyers and Central Securities Depositories (CDS) are still prominent figures in the tokenization process. Their role may even grow because they will have to perform additional tasks, such as litigation. The related question of custody of the tokenized property is also open. It is necessary for investors to be sure that custodians actually own what they claim to own and manage. New practices, such as Proof of Reserves, emerged to publicly disclose such information. Accordingly, the identity and reputation of auditors who perform proofs of reserves are getting prominent in the tokenization process. In other words, tokenization actually involves numerous intermediaries and trusted third parties that the blockchain technology strives to bypass.

² For instance, we can read on the Investbay.com website that ‘Each unit is initially priced at the same price and every year Investbay issues an update of the property’s value for the investment opportunity (this takes into account the growth of the property market, the attractiveness of the property, the estimated selling price and the property’s performance over the last year). These estimates serve as the basis for the supply/demand’. This is far from being crystal-clear.