The Crypto Frontier

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* Views expressed here are my own and do not necessarily reflect those of the Bank of England or any of its policy committees
The crypto ecosystem is at early stages, but is expanding quickly.

### Crypto assets:

<table>
<thead>
<tr>
<th>Supported by backing assets or algorithm to maintain peg to fiat</th>
<th>Unbacked</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stablecoins backed by fiat reserves</strong></td>
<td><strong>bitcoin</strong></td>
</tr>
<tr>
<td><strong>Stablecoins backed by other assets</strong></td>
<td><strong>DOGECOIN</strong></td>
</tr>
<tr>
<td><strong>Algorithmic stablecoins</strong></td>
<td><strong>ether</strong></td>
</tr>
<tr>
<td><strong>Other (non-fungible)</strong></td>
<td><strong>tether</strong></td>
</tr>
<tr>
<td><strong>tether</strong></td>
<td><strong>DAI</strong></td>
</tr>
<tr>
<td><strong>BUSD</strong></td>
<td><strong>USD Coin</strong></td>
</tr>
<tr>
<td><strong>HYPERLEDDGER</strong></td>
<td><strong>c•rda</strong></td>
</tr>
</tbody>
</table>

### Crypto activities:

<table>
<thead>
<tr>
<th>Lending</th>
<th>Payments</th>
<th>Investment (in underlying and derivatives)</th>
<th>Insurance</th>
<th>Exchanges</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Centralised (CeFi)</strong></td>
<td><strong>BlockFi</strong></td>
<td><strong>VISA</strong></td>
<td><strong>Goldman Sachs</strong></td>
<td><strong>LLOYDS</strong></td>
</tr>
<tr>
<td><strong>Decentralised (DeFi)</strong></td>
<td><strong>MAKER</strong></td>
<td><strong>PayPal</strong></td>
<td><strong>CME Group</strong></td>
<td><strong>LLOYDS</strong></td>
</tr>
</tbody>
</table>

| Algorithmic stablecoins | Insurance | Exchanges |
There are currently thousands of different crypto assets.
Daily prices of Bitcoin and Ether

Unbacked (around 90% of market cap)

- No intrinsic value
- Price is highly volatile
- Typically viewed as a speculative investment can be subject to capital gains tax, rather than a payments method

The vertical line indicates 23 February 2022, the day before the start of the Russia-Ukraine war

Sources: CoinGecko; Bloomberg; FSB calculations
Unbacked crypto-assets prices too volatile for store of value or medium of exchange

Daily one-month volatility* of selected crypto-assets vs other financial assets

*Realised volatility except VIX which shows implied volatility
The vertical line indicates 23 February 2022, the day before the start of the Russia-Ukraine war.

Sources: CoinGecko; Bloomberg; FSB calculations
Unbacked crypto-assets do not trade like an inflation hedge

60-day moving correlations of changes in the prices of bitcoin and other assets

The vertical line indicates 23 February 2022, the day before the start of the Russia-Ukraine war

Sources: CoinGecko; Bloomberg; FSB calculations
Stablecoins show promise, but are only as good as their backing arrangements

Potential
- Promise to redeem at par or at variable rate, so more stable
- This promise supported by backing assets or algorithm
- Possible benefits in terms of efficiency (e.g., cross border payments, use in DeFi)

Backing arrangements
- Assets backing stablecoins must be sufficient, high quality, liquid
- Need transparency about backing assets (high frequency) and clear governance
- Algorithmic supporting mechanisms must find way to avoid “death spiral” risk (Terra Luna example)

Financial regulation lagging along several dimensions:
- Anti money laundering, counter terrorist financing
- Investor protection and market integrity (e.g., registration of exchanges with securities regulators)
- Quality and transparency of backing arrangements for stable coins (Tether example)
- Governance of both backed and unbacked crypto assets

Many regulatory initiatives underway, including:
- Bank of England on stable coins
- President’s working group on stable coins (and Biden’s Exec Order on Responsible Development of Digital Assets)
- EU proposed regulation on Markets in Crypto Assets (MiCA)
Low hanging fruit: increase efficiency of cross-border payments
DeFi could be of important social value if risks are properly managed

**Efficiencies and lower some operational risks:**
- Decentralisation reduces the reliance on intermediaries and their inefficient infrastructure.
- Smart contracts enable automated execution and creation of new financial instruments and digital assets.
- Data are easily shared, as opposed to traditional siloed platforms that do not talk to each other.
- DeFi protocol code is visible and auditable, and every transaction is visible on the blockchain.

**Illicit activity:**
- Risk of fraud, misappropriation, and conflicts of interest.
- Money laundering, terrorist financing, avoidance of sanctions.

**Governance failures:**
- Operations and activities within DeFi often governed or administered by a small group of developers and investors.

**Technology failures:**
- Risks related to the underlying technology.

**Financial Stability**
The crypto/DeFi ecosystem is a growing threat to financial stability

Financial stability assessment typically covers several transmission channels

- Disruption to payments
- Impact on systemic financial institutions
- Impact on systemic financial markets (direct and indirect)
- Impact on household wealth

Source: Adapted from Bank of England framework
CBDC could support payments modernisation

Supporting competition, efficiency and innovation in payments
Avoiding the risks of new forms of private money creation
Supporting a resilient payments landscape
Meeting future payment needs in a digital economy
Improving the availability and usability of central bank money
Addressing the consequences of a decline in cash
As a building block for better cross-border payments

Key issues to be dealt with before taking a decision

Bank funding and financial intermediation
➢ Interest-bearing CBDC would compete directly with commercial bank deposits, a very stable form of bank funding
➢ Design to avoid undesirable implications for financial intermediation or for destabilizing dynamics in periods of financial stress

Security and integrity
➢ Ensure data integrity and privacy
➢ Secure against digital counterfeiting

Adoption
➢ Convenience and cost of usage
➢ Merchant acceptance in two-sided market
Three concluding policy points

1. **Crypto assets are the bedrock of the new financial ecosystem**: consumer protection/market integrity is the first order of business for regulators.

2. **Opportunities and risks extend well past the crypto assets themselves**: they encompass a rapidly expanding range of financial services, increasingly enabled by DeFi. Risks to financial stability appear to be low now, but are rising.

3. **Authorities must be proactive in building a legal and regulatory framework that will guard against further build-up of risks and support responsible innovation**: History is rife with examples where unregulated financial activities that grew quickly and became intertwined with the financial system ended badly, especially for those who could least afford it.