CRYPTOCURRENCIES IN THE GLOBAL ECONOMY

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The introduction of cryptocurrencies

- Satoshi Nakamoto (2008)
  - Several references to Bitcoin as money
    - “[w]hat is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party.”

- A novel idea
  - But has it been achieved in practice?
  - Is a trusted institution really avoidable?
  - Are cryptocurrencies really money?
Money and payments

- Money is a medium of exchange, a unit of account and a store of value
  - Money is based on trust and backed by trusted institutions
  - Useful money must have a stable value (price stability)

- A payment system should be cost-efficient, fast, safe and be useful for all
  - An efficient payment system is based on stable money
Topics

- Money
- The payment system
- Risks and regulatory responses
Topics

- Money
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## Money

<table>
<thead>
<tr>
<th>Unit of account</th>
<th>Means of payment</th>
<th>Claim on</th>
<th>Payment instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>National currency</td>
<td>Cash</td>
<td>Central bank</td>
<td>Cash</td>
</tr>
<tr>
<td>Bank deposit</td>
<td>Private bank</td>
<td></td>
<td>Payment cards, applications, direct transfer</td>
</tr>
<tr>
<td>E-money</td>
<td>E-money issuer</td>
<td></td>
<td>Cards, applications</td>
</tr>
<tr>
<td>Own currency</td>
<td>Cryptocurrencies</td>
<td>Usually no one</td>
<td>Applications, direct transfer</td>
</tr>
</tbody>
</table>
The merits of currencies

<table>
<thead>
<tr>
<th></th>
<th>National currency</th>
<th>Cryptocurrencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium of exchange</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Unit of account</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Store of value</td>
<td>✓</td>
<td>✗</td>
</tr>
</tbody>
</table>
Exchange rate and volatility of Bitcoin and NOK
In USD and percent, respectively

BTC weekly volatility (USD benchmark)
NOK weekly volatility (USD benchmark)
Cryptocurrencies or crypto-assets?

- Cryptocurrencies may be better labelled “crypto-assets”
- They do not fulfill the criteria for useful money
  - …but could they be useful as transferrable assets?
Topics

- Money
- The payment system
- Risks and regulatory responses
Present payment system

Central bank

Clearing

Bank X

Bank Y

A

B

Cash
Cards
Apps
Chips
The merits of different payment systems

<table>
<thead>
<tr>
<th></th>
<th>Today’s payment system</th>
<th>Cryptocurrencies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Domestically</td>
<td>Cross-border</td>
</tr>
<tr>
<td>Cost-efficient</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Fast</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Safe</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>User-friendly</td>
<td>✓</td>
<td>✗</td>
</tr>
</tbody>
</table>
Potential for cryptocurrencies and DLT

When not assessed as general payment systems

- Cross-border payments

- Niche payments
  - Anonymous payments
  - Platform-services payments (smart contracts)

- DLT-technology may support existing infrastructure
  - Interbank clearing and settlement
  - Collateral administration
  - AML/KYC
Topics

- Money
- The payment system
- Risks and regulatory responses
Risks

- Risks to users
  - Extreme volatility
  - Elements of Ponzi schemes
  - Fraud
  - Operational failure

- Risks to society
  - Illicit activities
  - Waste of resources (ie energy and hardware)
  - **Systemic risk**
Systemic risk channels

- Cryptocurrencies on banks’ balance sheets
  - Indirectly: eg cryptocurrencies financed by bank loans
  - Directly: eg cryptocurrency investments

- Cryptocurrencies in FMI settlements
  - Cryptocurrencies as collateral
  - Operational risk

- Cryptocurrencies in mainstream payments
  - Operational risk
The CPMI has identified several regulatory instruments:
- Information/moral suasion
- Interpretation of existing regulations
- Regulation of specific entities
- Broader regulation
- Prohibition

The FSB will identify risk metrics and data gaps for the identification of financial stability risks
Regulatory priorities –
global approach

- Promote market integrity

- Combat illicit activities
  - Governments must be able to monitor large cross-border payments

- Prevent systemic risk

- **But** do not stifle innovation

“A better path would be to regulate elements of the crypto-asset ecosystem to combat illicit activities, promote market integrity, and protect the safety and soundness of the financial system”

Mark Carney
Regulation not the only response?

- Cryptocurrencies illustrate some of the needs and opportunities for improving the financial system

- But they are not the only possible response to new technologies and changing customer behaviour

- Several central banks are currently analysing central bank digital currencies (CBDCs)
  - Purpose dependent on national characteristics
  - Norway: Cash now just over 2% of monetary stock, 10-12% of payments
Value of cash in circulation in Norway as a percentage of means of payment (M1)

Cash as a percentage of means of payment (M1)

- USA
- Japan
- Euro area
- Switzerland
- Iceland
- Canada
- Denmark
- UK
- Norway
- Sweden

2016
2017
Central bank digital currencies (CBDCs)

- Norges Bank: Is a CBDC necessary to ensure an efficient and robust payment system and trust in the monetary system?
  - If cash is no longer widely available, is there a risk that important properties of the payment system will be lacking if the central bank/authorities do not take action?
  - If yes, is a CBDC the correct response?
  - Are there properties of CBDCs that we do not want?
Central bank digital currencies (CBDCs)

- In spring 2018, Norges Bank intends to publish a report on CBDCs prepared by an internal working group.

- Identified potential goals of a CBDC in Norway:
  - Credit risk-free alternative to bank deposits
  - Legal tender
  - Contingency solution
Our money and payment systems work reasonably well
  – But there is room for improvement
  – A case for central bank digital currencies?

Crypto-assets are associated with risks
  – Need to be regulated
  – Priorities are to promote market integrity, combat illicit activities and prevent systemic risk
  – A global approach is necessary

But don’t miss out on the potential of new technology