



THE RECORDING OF CRYPTO ASSETS IN MACROECONOMIC STATISTICS

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Background



Background

- The emergence of **crypto assets** has led to increasing requests for advice on their recording, particularly as they are not referred to in current statistical manuals
- In response, the **IMF** and the **OECD** started to draft conceptual guidance
- **Broad agreement** on most types of crypto assets
- Still discussion on those **without a corresponding liability**



Typology



What are crypto assets?

- Main **characteristics**:
 - Digital representations of value
 - Exchanged via **peer-to-peer** architecture (i.e., negotiable instruments)
 - Based on **cryptography** (avoiding double spending problem, e.g., Blockchain)
- Main motivation:
 - Transact without the **intervention** of a **third party**
 - Creation of **alternatives to traditional** financial **instruments**



Crypto Assets

Designed to act as a general medium of exchange

Designed to act as a medium of exchange within a platform

Security crypto assets*

With a corresponding liability

Crypto assets without corresponding liability
Ex: Bitcoin

Payment Tokens with a corresponding liability
Ex:

Payment Tokens without a corresponding liability
Ex: GameCredits

Debt security crypto assets**
Ex: Bond-i of the World Bank

Equity crypto assets
Ex:

Derivative crypto assets
Ex:

Issued by monetary authority
Ex: CBDCs

Issued by other entities
Ex: Stablecoins



Classification



Classification

- All crypto assets meet the **asset boundary**
- All crypto assets with a corresponding liability are financial asset
- Proposal:
 - **Designed to act as general medium of exchange**
 - Issued by a monetary authority = *Currency*
 - Not issued by a monetary authority = *New financial instrument*
 - **Designed to act as a medium of exchange within a platform or network**
 - With a corresponding liability = *Debt securities*
 - **Security tokens**
 - Debt security crypto assets = *Debt securities*
 - Equity crypto assets = *Equity*
 - Derivative crypto assets = *Financial derivatives*



What about crypto assets without a corresponding liability?

- Still **discussion** on crypto assets without a corresponding liability
 - Designed to act as general medium of exchange (CAWLM)
 - Designed to act as medium of exchange within a platform or network (CAWLP)
- **Main questions:**
 - Are they financial or nonfinancial assets?
 - How to account for their creation?
- Main focus in the paper on CAWLM



Financial or nonfinancial assets?



Approach 1: Nonfinancial asset

- Financial assets are characterized by **counterpart liability**
- **Only exception** is monetary gold
- Creating another exception may **open door for other commodities** to become financial assets
- Furthermore, it may create **inconsistencies** between sum of financial assets and of liabilities worldwide
- Demand for CAWLM as **investment asset** is high compared to their use as medium of exchange
- **Future of digital money** may be stablecoins and CBDCs
- Thus, CAWLM should be treated as '**digital valuable**' until there is evidence that they act as general medium of exchange



Approach 2: Financial asset

- CAWLM as **another exception** to counterpart liability rule
- Monetary gold is an exception because of its **financial role**
- **Fiat currency** could be regarded as another exception
- Like fiat currency, CAWLM **rely on trust** that they will start acting as a general medium of exchange
- Most nonfinancial assets derive value from use in production
- Valuables derive value from artistic and/or sentimental value
- Not treating CAWLM as financial assets would lead to **barter trade** in case they are used for purchases
- Thus, CAWLM should be treated as **new financial instrument**, clearly distinguishing them



Approach 3: Hybrid asset

- CAWLM have **features of both** financial and nonfinancial assets
- However, they do not fully meet the definition of either
- Proposal to create a hybrid asset class:
 - Treat the **creation of CAWLM as production**, contributing to capital formation, similar to the production of a nonfinancial asset
 - Treat **acquisition of goods and services with CAWLM as financial transaction**
- It avoids having to treat these assets as financial as well as having to record any purchases as barter trade
- This requires the **creation of a new account**, between the capital and the financial account
- It may also affect balancing items, e.g., **net lending/borrowing**



How do CAWLM come into existence?



Approach 1: Produced assets

- Mineable coins come into existence as result of the **work of miners**
 - The miner who solves the cryptographic puzzle first receives a coin
 - Miners can increase their own share of CAWLM by improving their mining capabilities
 - Miners receive an explicit validation fee and newly mined CAWLM
- Non-mineable coins can be regarded as being created and brought into circulation **by their designer**
- This approach would be rather straightforward, whereas the alternative approach may require various assumptions



Approach 2: Nonproduced assets

- Miners are not producing a coin but are involved in **validation services** and/or **maintenance** of the network
 - New coins can be brought into circulation via **other ways than mining**
 - **Designer determines** way and pace for releasing new coins
 - Validation of mineable and non-mineable coins should be treated the same
 - Remuneration via a new coin is way to keep explicit fees low and to bring new coins into circulation
 - Miners receive an explicit fee and an implicit fee (i.e., new coin)
- This means that CAWLM is created '**off production**'
- **Designer** should be seen as initial owner in case of explicit sale
- **Owners of existing CAWLM** as initial owner in case of release in exchange for production activities (they benefit from mining)
 - This may require assumptions to derive the exact owners of existing coins



Statistical measurement



Statistical measurement

- It is clear that the recording of crypto assets (regardless of the options presented) will **require detailed information** on the emergence, ownership and use of crypto assets
- **Pseudo-anonymous nature** may complicate this
- Countries are **encouraged to start collecting** relevant data
- Reliable data would be needed on:
 - Mining activities
 - Stocks of crypto assets
 - Flows of crypto assets, including use as medium of exchange
- Data may be obtained via tax authorities, retailers, mining companies, designers, trading platforms and wallets
- It will be important to **share data across countries**, filling data gaps and ensuring cross-country consistency



Next steps



Global consultation

- Paper is based on **guidance note** prepared in the context of the updates of macroeconomic statistical manuals (e.g., BPM6 and 2008 SNA)
- Guidance note will be published for **global consultation** early 2022
- Aim is to **obtain feedback** from compilers and users, both from a conceptual and practical perspective
- We would **appreciate your feedback** on the proposals!
- The consultations will be available here:
 - <https://unstats.un.org/unsd/nationalaccount/RAConlist.asp>
 - <https://www.imf.org/en/Data/Statistics/BPM/FITT>



Thank you for your attention

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