



# Issues in reflecting digital assets in the Flow of Funds Accounts

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## Motivation

- No consensus on what digital assets should or should not be included in statistics.
- A guidance note (GN) on the recording of crypto-assets in macroeconomic statistics has been developed, as an updating process towards the 2025 SNA.
- The Flow of Funds Accounts (FOF) — as the essential source data for financial accounts in the SNA — needs to reflect digital assets in an appropriate, feasible and consistent manner.
- This paper presents an idea for the classification of digital assets used as a means of payment (CBDCs, stablecoins, and other types of crypto-assets), with some numerical examples for discussion.

# Attributes that matter in the classification of financial assets

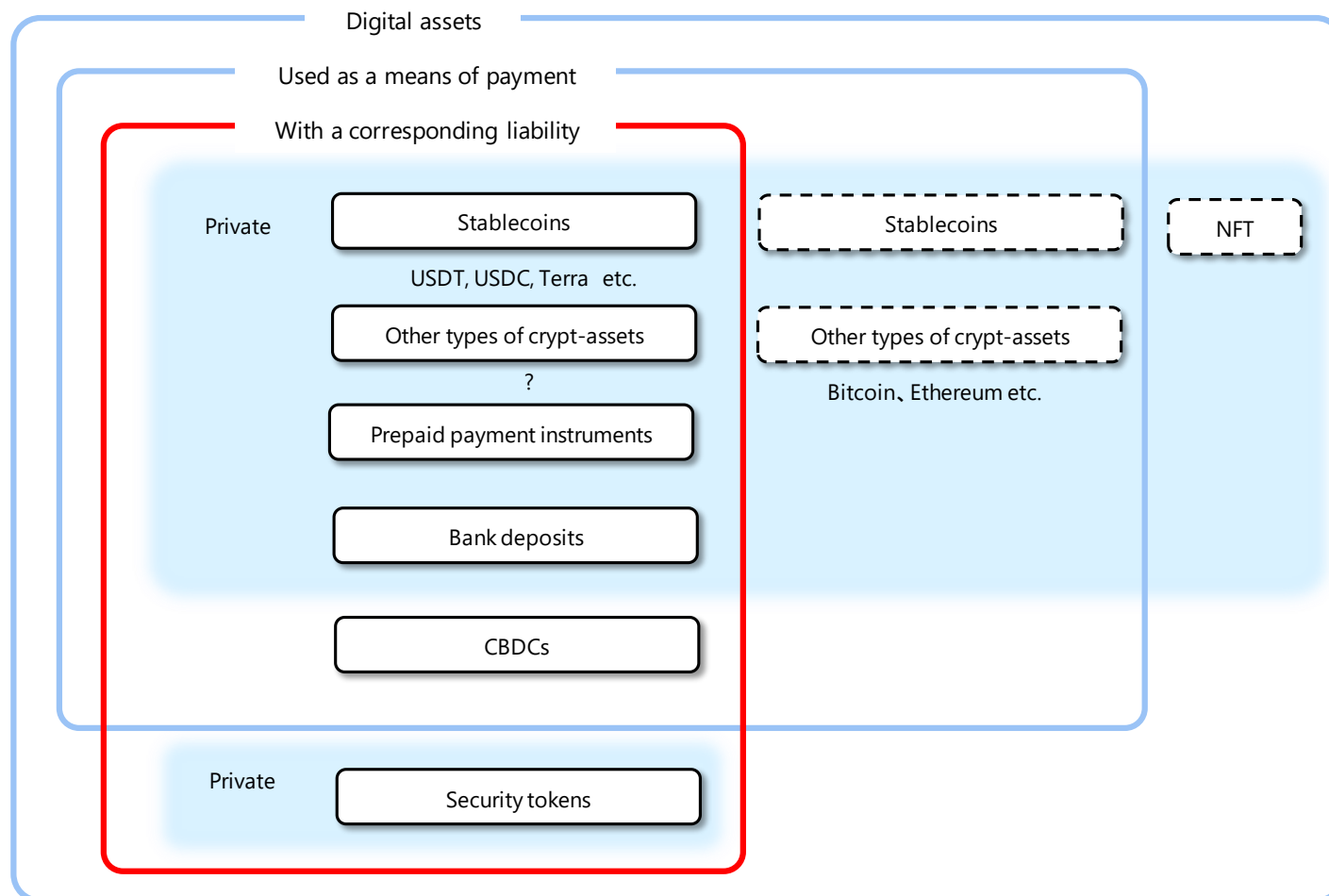
- Several common attributes of digital assets are observed in literature from academia and international organizations.

Attributes	Examples
Issuer	Existence or absence of issuer. Liability of the issuer corresponding to the asset.
Type	Claim -based or object -based. Account -based or token -based.
DLT usage	Use of Distributed Ledger Technology (DLT).
Value	Redemption value is guaranteed by the issuer at a fixed rate of a certain asset (typically fiat currency), or variable at the time of redemption.
Mean of payment	Playing as a means of payment.
Governance / operation	Centralized or distributed. Permissioned or permission -less.
Cryptography	Use of cryptographic validation technique.
Public / private	The issuer is public or private entity. The redemption is partially or fully guaranteed by the government.

Sources: Adrian and Mancini-Griffoli (2021), CPMI-MC (2018), G7 Working Group on Stablecoins (2019)

- Financial assets in the SNA, in principle, should have a counterpart liability (¶11.5, ¶11.7).
- Recognizing this current SNA criteria for financial assets, all digital assets which seem to act as a means of payment will not necessarily be categorized in financial assets. Among the attributes, special attention should be paid to the existence of liability.

# Proposed digital assets classification



Digital assets with a corresponding liability are to be treated as financial assets.

The GN's options:

Crypto-assets without a corresponding liability, designed to act as a general medium of exchange (e.g., Bitcoin) are

- "Financial" assets?
- "Non-financial" assets?
- "Hybrid" assets – to be recorded in the newly created hybrid account?

...Discussions are still ongoing.

# Reflecting digital assets in the Flow of Funds Accounts: **Stablecoins**

- An idea of recording -

	FC		HH • NFC	
Initial holding			Currency 1,000	

With collateral on the issuers' balance sheet

	FC		HH • NFC	
After purchase	Currency 400	Deposits money 1,000	Deposits money 1,000	
	Deposits 300			
	CP 300			

With collateral segregated from the issuers' balance sheet

	TC		FC		HH • NFC	
After purchase	Currency 400	Trust beneficiary certificates 1,000	Trust beneficiary certificates 1,000	Deposits money 1,000	Deposits money 1,000	
	Deposits 300					
	CP 300					

Without collateral (algorithm type) - provisional idea -

	FC		FC		HH • NFC	
After purchase		Deposits money 1,000	Deposits money 1,000	Deposits money 1,000	Deposits money 1,000	

There are a variety of so-called stablecoins.

With a corresponding liability: appear in the FOF

Without a corresponding liability: not appear in the FOF

- Represented in "Deposits money" by convention
- Assumed to be issued by FC

Different ways of recordings, depending on the methodologies used to maintain stable value.

- With/without collateral
- On/off issuers' balance sheet
- Algorithmically controlled

# Reflecting digital assets in the Flow of Funds Accounts: **CBDCs**

- An idea of recording -

	CB	DC	HH•NFC
Initial holding	<div>Currency 700</div> <div>Deposits with CB 500</div>	<div>Deposits 1,000</div> <div>Deposits with CB 500</div>	<div>Currency 700</div> <div>Deposits 1,000</div>
Issuance	<div>Currency 700</div> <div>Deposits with CB 300</div> <div>CBDC 200</div>	<div>Deposits 1,000</div> <div>Deposits with CB 300</div> <div>CBDC 200</div>	<div>Currency 700</div> <div>Deposits 1,000</div>
Withdrawal (against currency)	<div>Currency 500</div> <div>Deposits with CB 500</div> <div>CBDC 200</div>	<div>Deposits 1,000</div> <div>Deposits with CB 500</div>	<div>Currency 500</div> <div>Deposits 1,000</div> <div>CBDC 200</div>
Withdrawal (against deposits)	<div>Currency 700</div> <div>Deposits with CB 300</div> <div>CBDC 200</div>	<div>Deposits 800</div> <div>Deposits with CB 300</div>	<div>Currency 700</div> <div>Deposits 800</div> <div>CBDC 200</div>

CB: Central bank, DC: Depository corporations

Currently, only a very limited number of countries have introduced CBDCs.

A case of retail CBDCs is described.

There are two options for HH•NFC to withdraw CBDCs against:

- currency
- deposits



## Difficulties in the collection of source data

- Identification of holders' sector.
  - Particularly relevant to crypto-assets. Since most crypto-assets work on the public DLT platforms, transactional data are publicly available. Nevertheless, because of their anonymous nature, identification of holders is impossible by design.
  - The Flow of Funds Account could rely on estimation. Although some academic research has shed light on the ownership of crypto-assets, more detailed information is required.
  - Experiences of using big data safely while protecting confidentiality may provide a hint.
- Striking a balance between feasibility and ideal coverage in the statistics.
  - With lack of source data, compilers might ask themselves "what crypto-assets should actually be reflected?"





# Thank you for your attention

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