



EUROPEAN CENTRAL BANK

EUROSYSTEM

A characterization of financial assets based on their cash-flow structure

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What is this paper proposing?

- ✓ taxonomy of cash-flow structures
- ✓ characterization of financial assets on that basis ...
to provide new classification criteria and contribute to the resolution of borderline cases

Financial asset in the International Economic Accounting Statistical Standards

Designed to carry forward economic value

Encompasses:

- ✓ Financial claims
- ✓ Equity
- ✓ Financial Gold

- *Currency and deposits*
- *Debt securities*
- *Loans*
- *Insurance technical reserves*
- *Financial derivatives*
- *Other accounts*

Individual assets classified on the basis of economic substance (no legal form) and economic effects (no economic purpose)

No (much) explicit mentioning to cash flow characteristics

Assets seen as cash flows

Arrays of expected cash flows

$$a^t = \{a_{t+i}^t\}, i = 0, 1, 2 \dots$$

Also arrays of expected cash flows

$$a_{t+i}^t, \text{ expected flow in } t+i$$

$$a^t = \alpha_1 u_1^t + \alpha_2 u_2^t + \dots + \alpha_n u_n^t + \dots$$

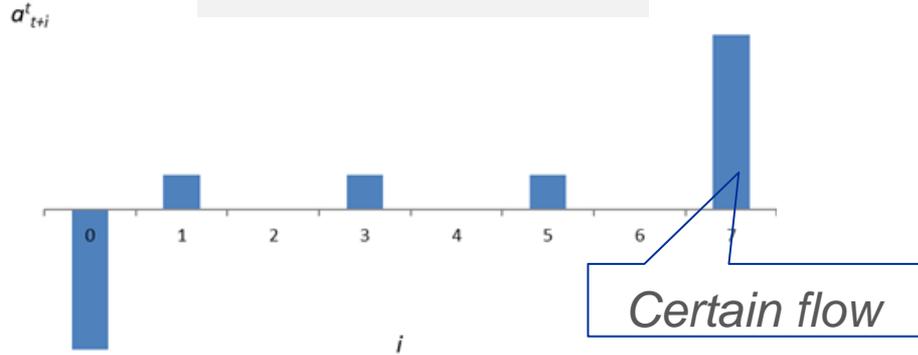
Assets can be expressed as linear combinations of other (linearly independent) assets

$$l^t = -a^t ; l_{t+i}^t = -a_{t+i}^t$$

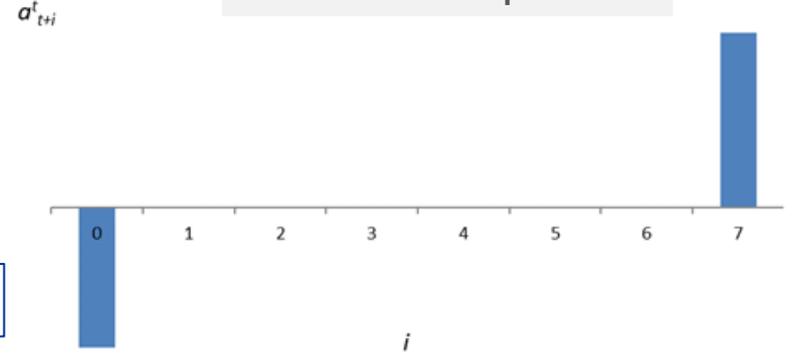
For financial claims, a “mirror” cash flow exists (a liability)

Taxons

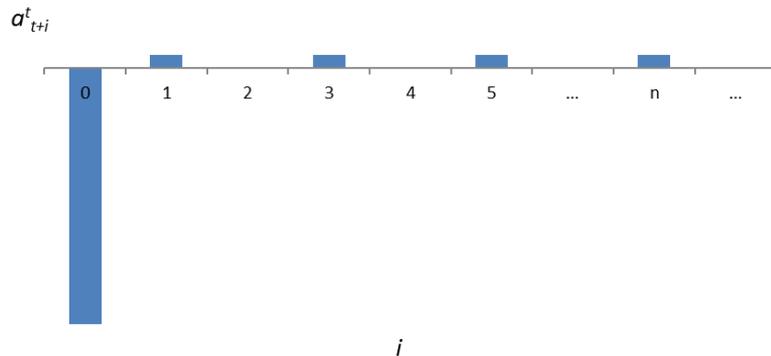
Generic claim



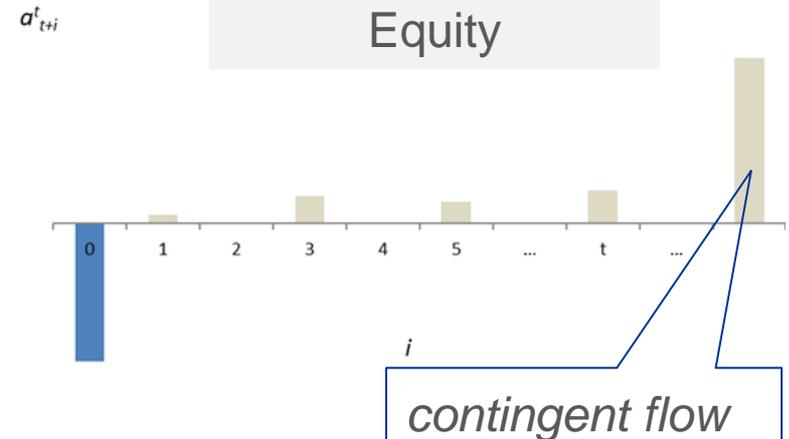
Zero coupon



Perpetual debt



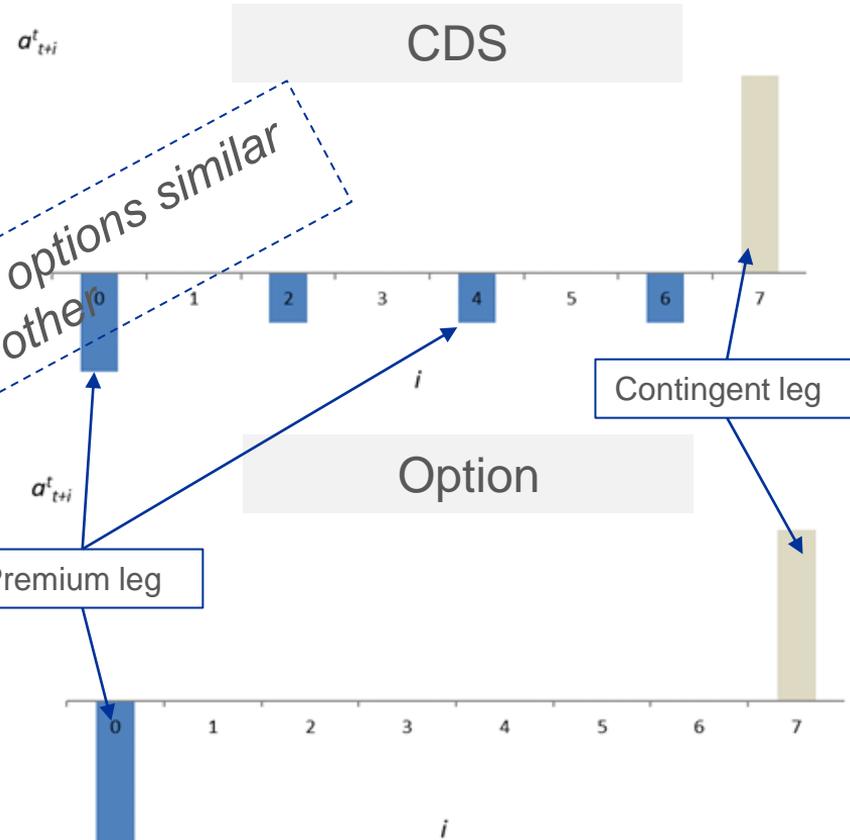
Equity



The case of CDS

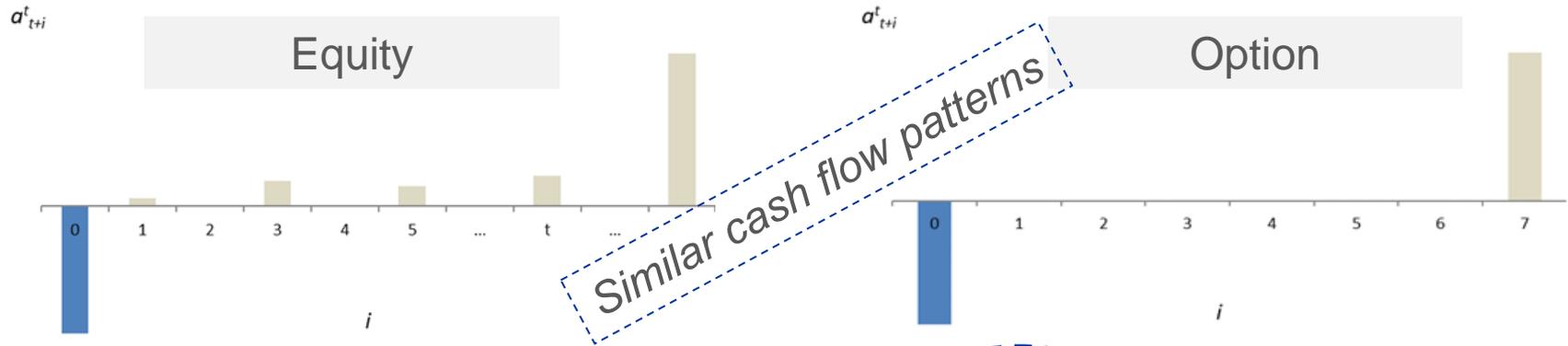
Are CDS **forwards** (market value switching from positive to negative, multiple payments along the life of the contract) or **options** (payment at inception, presence of a contingent non-negative payment in any case)?

CDS and options similar to each other



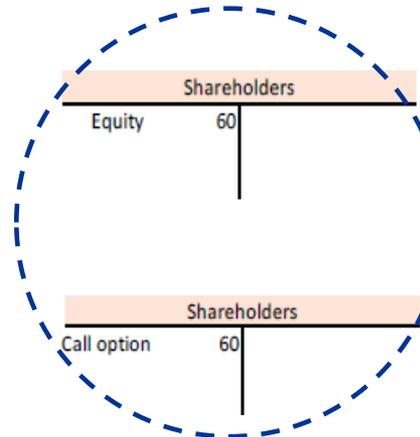
Options and equity

Are options and equity the same kind of assets?



Corporations		
Assets	100	40
	60	Debt
		Equity

Debt holders	
Debt	40



Shareholders	
Equity	60

Corporations		
Assets	100	100
		Equity

Debt holders		
Equity	100	60
		Call option

Shareholders	
Call option	60

Indeed, these two asset-liability configurations reflect the same economic substance, the same corporate structure

- ✓ *Cash flow structures give relevant information on the economic substance of financial assets*
- ✓ *A taxonomy of cash flows can give answers to borderline classification problems and inform alternative asset classification systems*
- ✓ *Further research is needed to formalise the mathematical structure of cash flows (vector space) , including its extension to the continuous case*