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EUROPEAN CENTRAL BANK

EUROSYSTEM

Financial instruments

Session V

Issues related to financial instruments and specific transactions

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Financial instruments - overview

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Basic concepts

Financial instruments

Basic concepts – financial assets and liabilities

Assets: Stores of value that can be carried into the future.

Financial assets: all financial claims, equity and the gold bullion component of monetary gold. A financial claim is the right of a creditor to receive a payment or series of payments from a debtor. Each financial asset has a counterpart liability (except of the gold bullion component of monetary gold).

Liabilities: are established when debtors are obliged to provide a payment or a series of payments to creditors.

Symmetry: Matching recordings for debtors and creditors of a financial position/transaction

1. Is gold held by households a financial asset?

Basic concepts - consolidation

Consolidation: offsetting (deducting) of financial positions/transactions within a certain group of institutional units, or between sectors

Choice may depend on:

- User preferences e.g.: non-consolidated and consolidated non-financial corporations (NFC) debt

  Non-consolidated NFC debt includes loans between NFCs – more comprehensive measure
  It also includes loans between resident enterprises of the same enterprise group!
  ➔ Some users prefer consolidated debt covering only loans from other sectors

- Data availability

  Loans between households – generally no data source => consolidated in practice

Basic concepts – net or gross recording

Netting only within financial instruments

- **Separately for assets and liabilities, e.g.:**

Acquisitions of long-term debt securities are shown net of disposals

Incurrences of short-term loans are shown net of repayments

Gross recording, i.e. no offsetting between assets and liabilities – generally recommended!

But: depends on data availability

- Financial derivatives assets minus liabilities?

Net lending/borrowing is not affected by choice

Basic concepts - time of recording, negotiability

Time of recording: accrual basis

For purposes of national accounts transactions should be recorded when the economic value is created, transferred or extinguished and the financial transaction is due **as opposed to when paid (cash basis)**

Negotiable instruments: Instruments designed to be traded on an organised exchange or 'over-the-counter', taking into account that they should be transferable (or offsetable in the case of financial derivatives)

- Ex-ante criteria, no need to check trading takes place

Basic concepts – contingent assets/liabilities

Contingent assets/liabilities: Arrangements which are conditional rights or obligations, occurring only when specific conditions prevail.

They are **not considered financial assets or liabilities** in the accounts up to the moment they actually occur. Some examples are:

- One-off guarantee
- Loan commitment where there is a promise to make available certain liquidity amounts

Pension entitlements on unfunded government pension schemes and social security schemes are not recorded in core financial accounts, only in supplementary ESA 2010 Table 29.

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Instrument classification

Financial instruments

Instrument classification – main instruments

Total financial assets/liabilities **(F)**

- Monetary gold and special drawing rights **(F.1)**
- Currency and deposits **(F.2)**
- Debt securities **(F.3)**
- Loans **(F.4)**
- Equity and investment fund shares or units **(F.5)**
- Insurance and pensions **(F.6)**
- Financial derivatives and employee stock options **(F.7)**
- Other accounts payable/receivable **(F.8)**

Delineation is based mainly on **liquidity, negotiability, and legal characteristics.**

Monetary gold and special drawing rights (F.1)

Broken down in two sub-instruments

Monetary gold (F.11) – is "physical" gold (gold bullion as well as allocated gold accounts) and unallocated gold accounts, which give title to claim the delivery of gold, held by monetary authorities as reserve assets. Physical gold held as monetary gold is the only financial asset for which there is **no counterpart liability.**

Special drawing rights (SDRs) (F.12) – international **reserve assets created by the International Monetary Fund** (IMF) and allocated (liabilities) to its members to supplement existing reserve assets.

SDR allocations are recorded on a gross basis as liabilities of the NCB or government depending on national institutional arrangements. SDR holdings are recorded as assets of the NCB.

Currency and deposits (F.2)

Broken down in two sub-instruments

Currency (F.21) – currency comprises notes and coins that are issued or authorised by monetary authorities. It includes national as well as foreign currency but it does not include commemorative coins.

Deposits (F.2M) – standardised, non-negotiable contracts with the public at large, offered by **deposit-taking corporations** and, in some cases, by central government as debtors, and allowing the placement and later withdrawal of the principal amount by the creditor.

Currency and deposits (F.2)

Deposits are then subdivided in:

Transferable deposits (F.22) – deposits exchangeable for currency on demand, at par, and directly usable for making payments without any penalty or restriction.

This category includes interbank positions between Monetary Financial Institutions (MFIs), MFIs' excess reserves placed with the central bank which can be used without notice and the 'reserve tranche' with the IMF.

Other deposits (F.29) – deposits which cannot be considered as transferable.

This category includes compulsory reserves held by MFIs with the central bank.

Debt securities (F.3)

Negotiable financial instruments serving as evidence of debt.

Debt securities can be characterized as:

- **Tradeable** financial instruments
- A relation between **one borrower and multiple lenders** with similar contracts

There are several types of financial products within this category which for financial accounts purposes are **grouped by maturity**.

- **Short-term debt securities (F.31) –** original maturity up to one year
- **Long-term debt securities (F.32) –** original maturity of more than one year

Loans (F.4)

Main features

- Conditions governing a loan are either fixed by the financial corporation granting the loan or agreed by the **lender** and the **borrower** directly or through a broker
- A loan is an **unconditional debt** to the creditor which **has to be repaid** at maturity and which is **interest-bearing**
- A loan involves normally one borrower and one lender, and the financial operation is defined in only one contract

For financial accounts purposes loans are **grouped by maturity:**

- **Short-term loans (F.41)** – loans with an original maturity of up to one year
- **Long-term loans (F.42)** – loans with an original maturity longer than one year

Loans (F.4)

Further information

Borderline cases of loans and deposits:

- **Deposit-taking corporations (bank)** record short-term liabilities as **deposits**
- On the contrary, **non-banks**(e.g. payment institutions) record short-term liabilities as **loans**

In addition, loans include:

- **Repos and securities lending,** when it is considered that the economic ownership is not changed, and the debtor is a non-bank
- **Financial leases** – as it is considered that the lessor grants a loan to the lessee by which the lessee acquires the asset
- **Repayable margin payments** related to financial derivatives which are liabilities of non-banks

Equity and investment fund shares or units (F.5)

Residual **claims on** the **assets** of the institutional **units that issued** the shares or units.

In other words, the owner does not have a right to a predefined amount, but instead to a portion of what is left (residual value) after other claims have been paid for.

Equity and investment fund shares or units (F.5)

Equity (F.51) has three sub-instruments

Listed shares (F.511) – equity securities **listed on an exchange,** which may be a stock exchange or another form of secondary market. Also known as quoted shares.

Unlisted shares (F.512) – equity securities not listed on an exchange.

Other equity (F.519) – comprises **all other forms of equity in corporations.** Includes the capital of the central bank or international organizations and the **capital of quasi-corporations.** Corporations that issue shares or units may additionally have other equity amounts.

Equity and investment fund shares or units (F.5)

Investment fund shares or units (F.52)

Investment funds are **collective investment undertakings** through which investors pool funds for investment in financial and/or non-financial assets.

Shares if the fund has a corporate structure and **units** if the fund is a trust.

Investment fund shares are subdivided in:

- Money market fund shares or units (F.521) – issued by money market funds (MMFs), i.e. investment funds that invest only or primarily in short-term debt securities. They can be transferable and are often regarded as close substitutes for deposits.

- Non-money market fund shares or units (F.522) – represent a claim in an investment fund other than a money market fund.

Insurance, pension and standardised guarantee schemes (F.6)

Non-life insurance technical reserves (F.61) – financial **claims that policy holders have against non-life insurance corporations** or reinsurance corporations in respect of **unearned premiums and claims incurred.**

Life insurance and annuity entitlements (F.62) – consist of financial claims that policy holders and beneficiaries of annuities have against life insurers. Reinsurance of life insurance is recorded as non-life insurance.

Pension entitlements (F.63) – claims that current employees and former employees hold against either the employer or a pension scheme, which can take the form of a pension fund or a contract with an insurance company.

This instrument does not include claims on unfunded government pension schemes and social security schemes.

Insurance, pension and standardised guarantee schemes (F.6) – allocation by investment risk

In the case of **unit-linked** life insurance (**F62A**) and **defined contribution** pensions (**F63A**) the **investment risk is borne by households** (similar investment fund shares/units in this regard)

In the case of **non-unit linked** life insurance (**F62B**) and **defined benefit** pensions (**F63B**) the benefits are largely specified in nominal terms, and the **investment risk is primarily borne by the insurance corporation and the pension fund or employer (or other pension sponsor)**. They may also include some hybrid schemes.

In the euro area **about 75%** of life insurance and pension entitlements consist of **non-unit linked** life insurance and **defined benefit** pensions.

Insurance, pension and standardised guarantee schemes (F.6) - continuation

Claims of pension funds on pension managers (F.64) – the **difference between the liabilities** of pension schemes and **the assets that are placed to cover them** whenever the employer contracted a third entity to manage the scheme but ultimately keeps the responsibility to meet these claims.

Entitlements to non-pension benefits (F.65) – Entitlements to employees (or former employees) which are not pension entitlements (e.g. healthcare schemes) or due to excess of contributions over benefits. This item is likely to occur only rarely and, for pragmatic reasons, changes in such non-pension entitlements may be included with those for pensions.

Insurance, pension and standardised guarantee schemes (F.6) - continuation

Provisions for calls under standardised guarantees (F.66) – guarantees that are issued in large numbers, usually for fairly small amounts, along identical lines. Such arrangements involve three parties: **the borrower, the lender and the guarantor.** Either the borrower or the lender may contract with the guarantor to repay the lender if the borrower defaults. Examples are **export credit guarantees** and **student loan guarantees.**

These guarantees can cover deposits, loans, debt securities or trade credits and they are provided by financial corporations, not exclusively insurance corporations, and the general government.

Financial derivatives and employee stock options (F.7)

Financial derivatives (F.71) – instruments linked to a specified financial instrument or indicator or commodity, through which **specific financial risks can be traded** in financial markets in their own right.

They have to be either negotiable or offsetable on the market. They are also characterized by non-existence of a principal amount delivered. **The value of the underlying assets determines the value of the financial derivative,** and trading in financial derivatives usually does not involve the exchange of the primary instrument.

Financial derivatives do not include neither the underlying asset nor complex financial products where the derivative part is minor.

Netting is accepted for financial derivative transactions (ESA 2010 5.31).

Financial derivatives and employee stock options (F.7) - continuation

Employee stock options (F.72) – agreements made on a given date under which an **employee has the right to purchase** a given number of shares of the employer's stock **at a stated price** either at a stated time or within a period of time immediately following the vesting date.

To improve the data coverage and quality, **ESCB TF Financial Derivatives** recommended that NCBs conduct comprehensive reviews of national collection and compilation systems to ensure **direct reporting by main players**, ensure **stock-flow consistency**, confirm correct recording of **post-trading activities** (clearing, netting, novation) and take advantage of **business accounting** data.

Expected implementation: BR 2024

Other accounts receivable/payable (F.8)

Broken down in two sub-instruments

Trade credits and advances (F.81) – represent **time differences** between the **exchange of ownership** of goods or the **provision of services** and **cash flows associated with non-financial transactions.** These instruments typically involve suppliers and customers. Trade finance provided by third parties, and loans to finance trade credit are not included.

Other accounts receivable/payable, except trade credit and advances (F.89) – are claims arising from **time differences** between **distributive transactions or financial transactions** and **the corresponding payments.**

F.89 should not include statistical discrepancies!

Relevance of instrument-sector combinations – Assets

Assets	Non-financial corporations (S.11)	MFIs (S.121 - S.123)	Non-MMF investment funds (S.124)	Other financial institutions (S.125+...+S.127)	Insurance corporations (S.128)	Pension funds (S.129)	General government (S.13)	Households (S.14)	NPISHs (S.15)	Rest of the world
Monetary gold (F.11)										
SDRs (F.12)										
Currency (F.21)										
Transferable deposits (F.22)										
Other deposits (F.29)										
Lont-term debt securities (F.32)										
Short-term debt securities (F.31)										
Short-term loans (F.41)										
Long-term loans (F.42)										
Listed shares (F.511)										
Unlisted shares (F.512)										
Other equity (F.519)										
Money market fund shares (MMFs; F.521)										
Non-MMF investment fund shares (F.522)										
Non-life insurance technical reserves (F. 61) and Provision for calls under standardised guarantees (F.66)										
Life insurance and annuity entitlements (F.62)										
Pension entitlements (F.63), Claims of pension funds on pension managers (F.64), Entitlements to non-pension benefits (F.65)										
Financial derivatives and employee stock options (F.7)										
Trade credits and advances (F.81)										
Other accounts ex. trade credits(F.89)										

Non-applicable:

Allowed in certain cases:

Relevance of instrument-sector combinations – Liabilities

Liabilities	Non-financial corporations (S.11)	MFIs (S.121 - S.123)	Non-MMFinvestment funds (S.124)	Other financial institutions (S.125+...+S.127)	Insurance corporations (S.128)	Pension funds (S.129)	General government (S.13)	Households (S.14)	NPISHs (S.15)	Rest of the world
Monetary gold (F.11)										
SDRs (F.12)										
Currency (F.21)										
Transferable deposits (F.22)										
Other deposits (F.29)										
Lont-term debt securities (F.32)										
Short-term debt securities (F.31)										
Short-term loans (F.41)										
Long-term loans (F.42)										
Listed shares (F.511)										
Unlisted shares (F.512)										
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Life insurance and annuity entitlements (F.62)										
Pension entitlements (F.63), Claims of pension funds on pension managers (F.64), Entitlements to non-pension benefits (F.65)										
Financial derivatives and employee stock options (F.7)										
Trade credits and advances (F.81)										
Other accounts ex. trade credits (F.89)										

Non-applicable:

Allowed in certain cases:

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Valuation

Financial instruments

Valuation – overview

Valuation at current price of transactions and financial positions

- **Nominal values for deposits and loans**

Nominal value: funds advanced plus accrued interest

- ≠ face value, i.e. amount to be repaid at maturity, e.g. relevant in the case of deep-discounted zero-coupon bonds:

	T: Issuance	T+1 (accrual of interest)	T+2: Maturity
Nominal value	90	95	100
Face value	100	100	100

Valuation – overview

Valuation at current price of transactions and financial positions

- **Market prices for negotiable instruments**

If not available at estimated market price.

- **Conversion to domestic currency:** For transactions the exchange rate used on the operation or the one prevailing at the moment the operation is performed. For stocks the end-of-period exchange rate.

Valuation by instrument - overview

Instrument	Valuation
Monetary gold	Gold price in organised markets
SDRs	Determined by IMF (based on currencies basket)
Currency and deposits	Nominal value
Debt securities	Market price
Loans	Nominal value
Listed shares and listed Investment fund shares	Market price

Instrument	Valuation
Unlisted shares, unlisted IFs (Other equity)	Market values to be estimated
Other equity of quasi-corporations	Own funds = Assets - Liabilities other than equity
Insurance, defined benefit pensions, standardised guarantees	Actuarial values
Defined contribution pensions	Market value of funds' assets
Financial derivatives	Market prices (or offsetting amount)
Other accounts payable	Nominal value

Symmetric valuation

The same value is to be used for creditors and debtors of a financial position

- **Loans**

No recording of unilateral write-downs by creditors

Debtor still owes nominal value!

Nominal value irrespective of performing or not!

- **Securities: Assets and Liabilities are affected by price changes**

Liabilities from debt securities are affected by interest changes and market perceptions

Market value of outstanding shares fluctuates with share prices

Valuation – listed shares

Listed shares are valued at their market values

The market values of the outstanding shares of a corporation may differ substantially from the sum of Capital & Reserves, and from Own funds (Assets – Liabilities other than equity), as the market valuations of a corporation may differ from the sum of recorded assets minus debt

Corporate balance sheet		FA balance sheet		Own funds	
Cash 5	Bonds 20	Deposits 5	Debt securities **21**	Assets (market value) 5+6+30+70	Minus
Bonds 5	Payables 30	Debt securities **6**	Payables 30		Liabilities ex Shares 21+30
Shares 20	Capital & Reserves 50	Shares **30**	Shares **?**	=111-51 = 60	
Non-FA 70		Non-FA 70			

Example Apple:
Own funds = A 350 – L 290 = 60 bn
Market cap: 3000 bn!

Valuation – unlisted shares and other equity

The market value of unlisted shares and (in general) Other equity should be estimated, preferably with reference to market prices of listed shares of similar corporations

Methods specified in ESA: Value (price) of unlisted shares

= market price similar listed shares x (own funds unlisted shares) / (own funds similar listed corporations), **or**

= market price to earnings ratio of similar corporations x expected earnings (est.)

Other equity in quasi-corporations

Equity = Own funds (Assets – Liabilities other than equity)

I.e. net worth of quasi-corporations is by convention equal to zero

Valuation – unlisted shares and other equity

Negative equity

Estimates of unlisted equity valuation may result in **negative amounts**. This may be due to, i.a.:

- cumulated losses,
- debt financing substituting equity financing,
- insolvency.

Current guidance recommends **zeroing out negative equity** when the **liability** is **limited**.

Central banks can also have negative equity.

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Special cases

Financial instruments

Mergers and acquisitions (M&A)

ESA specifies 3 types of flows relate to M&A:

1. the purchase of shares and other equity of a corporation is recorded as financial transaction between the acquiring corporation and the previous owner(s) (ESA 2010 paragraph 21.26)

In case of a full merger (disappearance of the acquired company as independent legal unit):

2. financial assets/liabilities between acquiring and absorbed company "disappear" – recorded as other change in volume (ESA 2010, 21.25)
3. financial assets/liabilities of the absorbed company against third parties "pass" to the acquiring company – recorded as other change in volume (ESA 2010, 21.25)

Merging two companies – debt financed

Y issues debt (F3) to finance purchase of X shares

Y balance sheet		X balance sheet	
A	L	A	L
AF2 20		AF2 10	
	AF4 30		AF4 50
Non-FA 80	AF5 90	Non-FA 80	AF5 40

Y+X balance sheet non-consolidated		Y+X balance sheet consolidated	
A	L	A	L
AF2 30	AF3 **+40**	AF2 30	AF3 40
AF5 40	AF4 80		AF4 80
Non-FA 160	AF5 90+40	Non-FA 160	AF5 90

Merging two companies – share swap

Enterprise Y buys enterprise X by a share swap

Shareholders of X receive 40 new Y+X shares

Y balance sheet		X balance sheet	
AF2 20		AF2 10	
	AF4 30		AF4 50
Non-FA 80	AF5 90	Non-FA 80	AF5 40

Y+X balance sheet non-consolidated		Y+X balance sheet consolidated	
AF2 30		AF2 30	AF3 40
AF5 40	AF4 80		AF4 80
Non-FA 160	AF5 90+40**+40**	Non-FA 160	AF5 90**+40**

Listing and de-listing of shares

Financial transactions are defined as interactions between institutional units.

One borderline/apparent exception from this general rule is the recording of the (de-) listing of shares as specified in ESA10 (paragraph 5.150):

Listing refers to the corporation's shares being on the list of stocks that are officially traded on a stock exchange. … De-listing refers to the practice of removing the shares of a corporation from a stock exchange….

Listing is recorded as an issuance of listed shares, and as a redemption of unlisted shares, while de-listing is recorded as a redemption of listed shares, and an issuance of unlisted shares … .

Recording of transactions even if no interactions between the corporation and its shareholders!

Short-selling of securities

Sale of a borrowed security (also in a repo transaction)

Security continues to be recorded by the original owner/lender

Short sale leads to a short position, shown as a **negative asset** (rather than a liability)

T	Issuer	Owner/lender		Borrower/short seller		Purchaser	
	AF3 100	AF3 100		F3 -100		F3 +100	
		F2: +1 (lending fee)		F2 -1 (lending fee)			
				F2 +100		F2 -100	

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Exercises

Financial instruments

Financial instruments - Exercises

1. **What is included in consolidated NFC sector debt:**
   a. loans from MFIs, other financial intermediaries (OFIs),…, rest of the world?
   b. loans between NFCs?
   c. loans from non-resident NFCs belonging to the same group?

2. **How would you deal with the following when compiling financial accounts?**
   a. the payment for a service is due but not paid
   b. a bank makes a loss provision as the repayment of a loan becomes doubtful
   c. a short-term repurchase agreement (repo) between two banks
   d. the “transfer of a loan portfolio from a subsidiary to the parent company
   e. the “transfer of assets from the absorbed company to the absorbing company

Questions and comments?