COMILLAS
UNIVERSIDAD PONTIFICIA
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3ºE2 - Spring 2026

Mercados Financieros

L1 – The Financial System

January 20th, 2026

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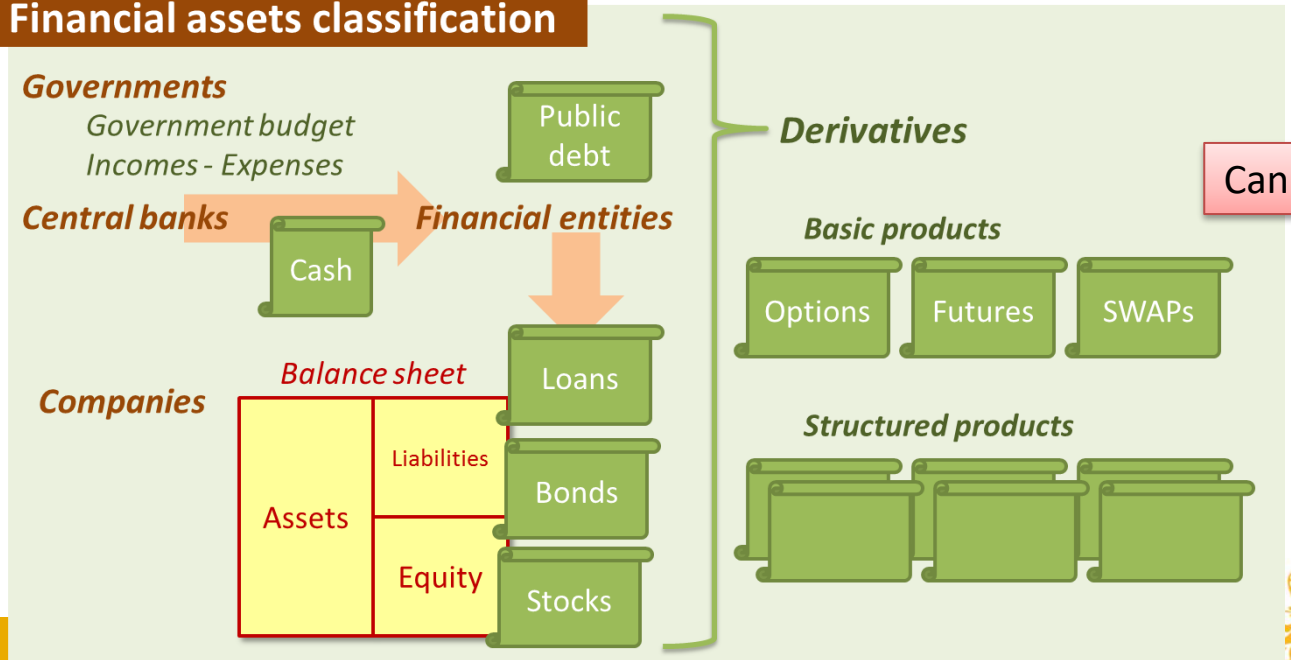
Summary of previous class

Principal aim: to know and understand the financial system
Structure: 9 lessons
Methodology: The importance of participation

#	Lesson
1	The financial system (1 week)
2	Central Banks (1 week)
3	Money markets and interest rate risk (1 week)
4	Credit institutions (2 week)
5	Other financial institutions (1 week)
6	Capital markets and fixed income (3 week)
7	Equity markets (2 week)
8	Sovereign debt market (1 week)
9	Derivatives (1 week)

For next week I need three voluntaries:
- From Bretton Woods to Vietnam.
- Germany hyperinflation
- How did George Soros "break the Bank of England"?

Financial assets classification



Can we predict the future?
- Classical models
- Cycles
- Chaos theory
- Behavioral finance
- Black swans

What we are going to do today?

L1. The financial system (I)

- **The importance of information**
  - Efficient markets
  - Arbitrage

What is an instant?

- Technical analysis
- Fundamental analysis
- Insiders

- **First steps with accounting**
- **Spanish financial system**
- **Time and money**
  - First steps

Before starting

Calendar:

Midterm?

	L	M	X	J	V	S	D
Enero	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30	31	1
Febrero	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	1
Marzo	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
	30	31	1	2	3	4	5
Abril	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26

Information. Efficient-market

- **Efficient-market hypothesis (Fama, 1965).**
  - A market in which prices always **"fully reflect"** available information is called **"efficient"**. Nobody can know the future price
  - **Weak form:** market reflect all information regarding **historical prices**. **Technical analysis** doesn't work.
  - **Semi-strong form:** market reflect also all public information regarding the company. **Fundamental analysis** doesn't work.
  - **Strong form:** market reflect all information… **There are no insiders.**

Technical analysis.
With the historical prices it is possible to know the future

Now

Stock A
Price = 12,3€

Profit and Loss Statement
Expenses
Incomes
Profits

Balance sheet
Assets
Liabilities

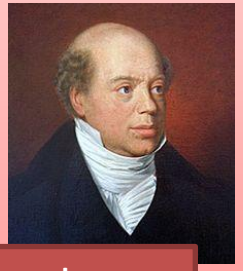
Fundamental analysis
Compares real value (ej: books value) with market value.

Information. Arbitrage

- **What is arbitrage?**
  - Stocks of the same company are traded in two different markets. ¿What if the stock have different prices in each market? An example of arbitrage is to take advantage of the situation and get a gain without risk.
- **Is there any relationship between arbitrage and efficient markets?**

Nathan Rothschild
Waterloo legend (18 June 1815)
After Waterloo battle a Rothschild agent fly to London (beating Wellington's envoy by **many hours**)

Nathan made the market believe that Waterloo was lost, and took advantage of his exclusive Information.



1815 – Many hours

How long does an instant take?

Flash Boys
Spread Networks (2010)
The construction of $300 million project, a 827-mile cable running as straight as possible, through mountains and under rivers, from Chicago to New Jersey, that would reduce the journey time for data from 17 to 13 milliseconds.

High-frequency trading

They connected the Chicago Mercantile Exchange (futures and options) to Carteret, New Jersey (home to the Nasdaq data center)

2010 – 4 milliseconds

First steps with accounting

How do we create a company?

1. Register the name in the business register.
2. In the case of a limited liability company (S.L), we need, at least an equity of 3.000€.
3. We go to the notary with the **statutes**.
4. Tax authorities: inscription (IAE) and fiscal number.
5. Inscription in the **business register**.

Accounting

Assets	Liabilities & Equity
Cash: 3.000€	Equity: 3.000€

We ask for a 2.000€ loan

2.000€	Cash	Loan	2.000€

Assets	Liabilities & Equity
Cash: 5.000€	Loan: 2.000€
	Equity: 3.000€

We buy an asset A for 4.000€

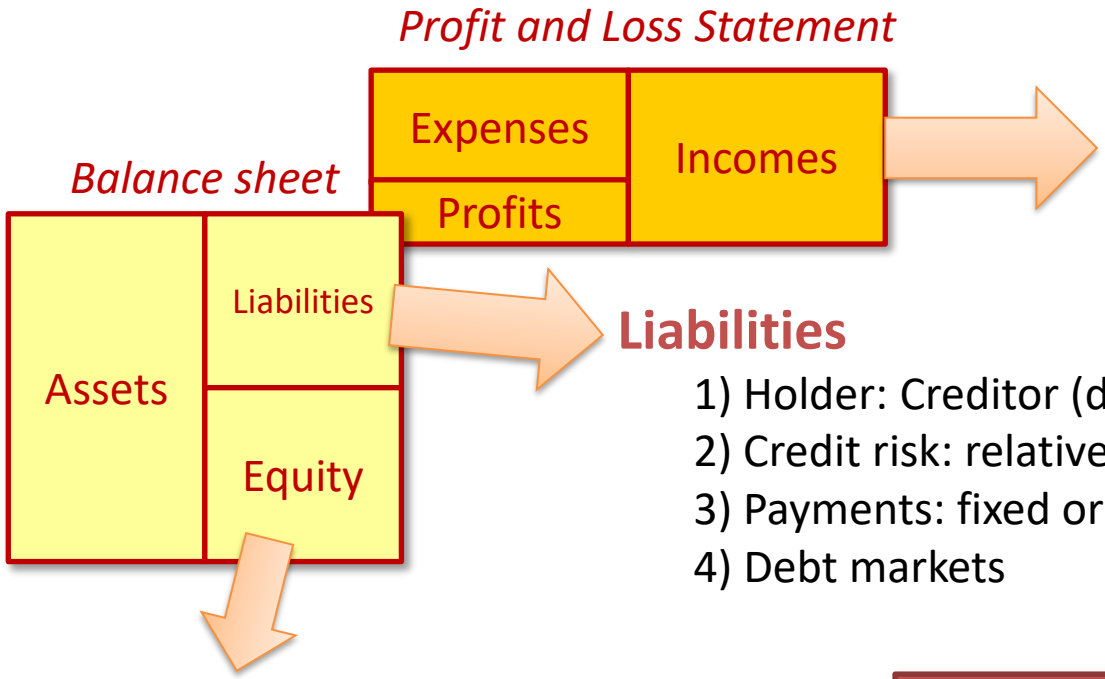
4.000€	Asset A	Cash	4.000€

Assets	Liabilities & Equity
Cash: 1.000€	Loan: 2.000€
Asset A: 4.000€	Equity: 3.000€

¿What is the difference between Equity & Liabilities?

First steps with accounting

Differences between Stocks and Liabilities



5) Taxes

Dividend is paid (when paid) after Company taxes. Bonds payments are paid as financial expenses.

6) Return and risk

Liabilities

1) Holder: Creditor (debt)
2) Credit risk: relative priority
3) Payments: fixed or at least certain payment
4) Debt markets

Stocks

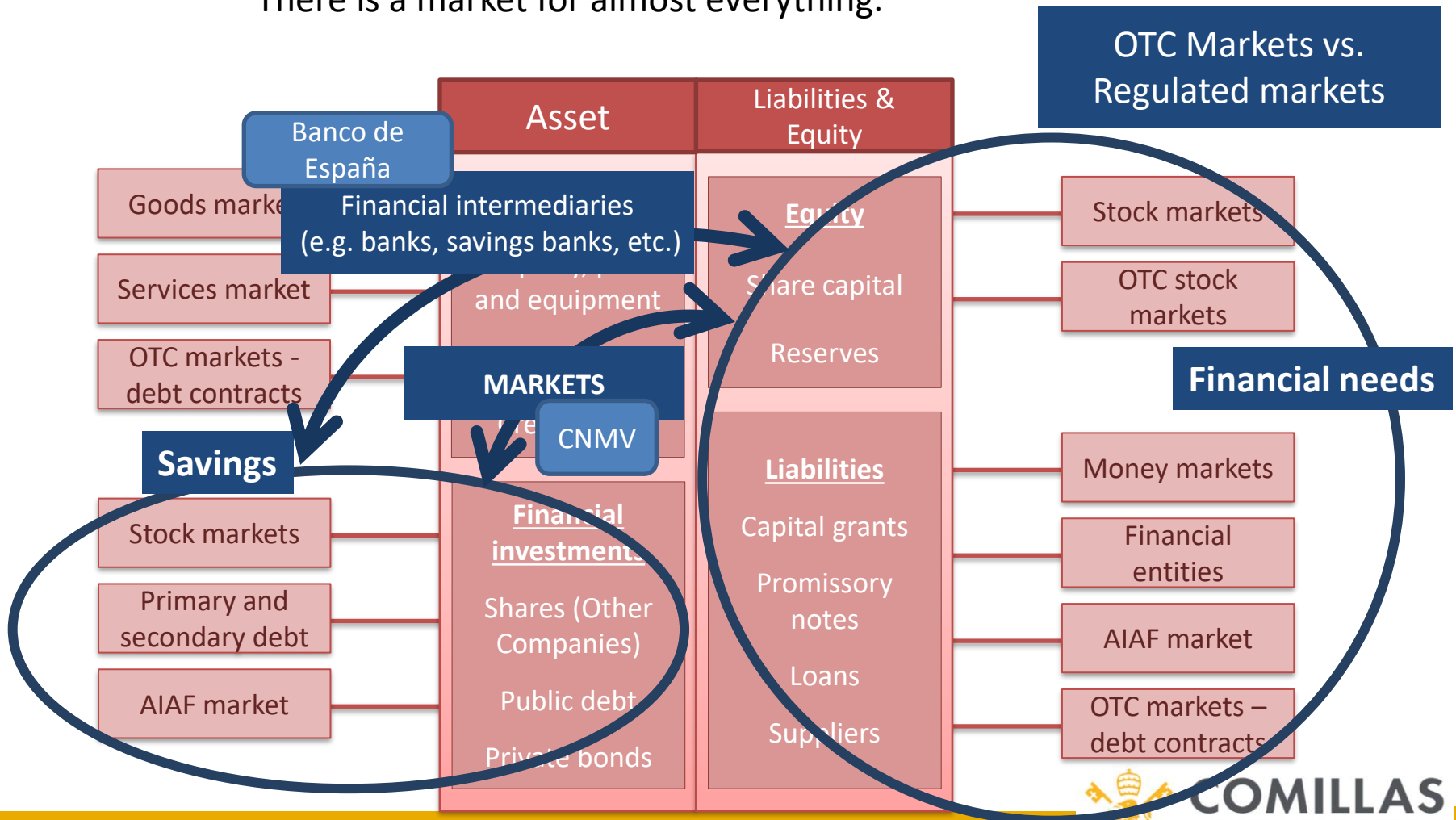
1) Holder: Ownership
2) Credit risk: last on the list
3) Payment: dividends
4) Stock markets

Liabilities: The creditor has to be paid.
Stocks: There is no obligation to pay out dividends

First steps with accounting

Which balance sheet elements could be traded in a market?

There is a market for almost everything.



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First steps with accounting

How is the balance sheet of a credit institution (banks and equivalents)?

Assets

- Cash
- Central Bank deposits
- High liquidly products (ej: gob. bonds)
- **Loans** (secured –eg: mortages– or unsecured –consumer loans –)
- Other Investment products

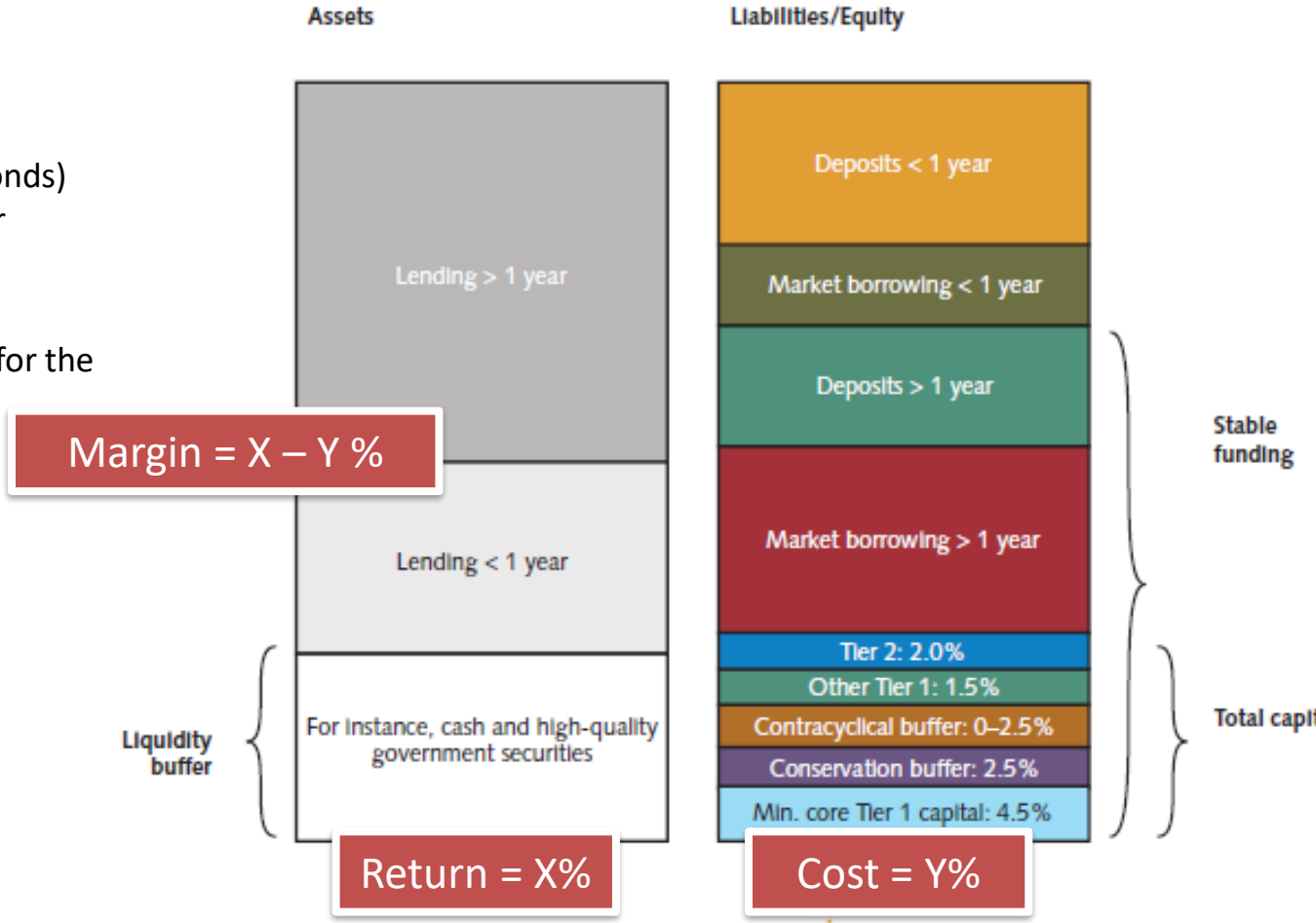
A liability for a company is an asset for the creditor bank.

Liabilities

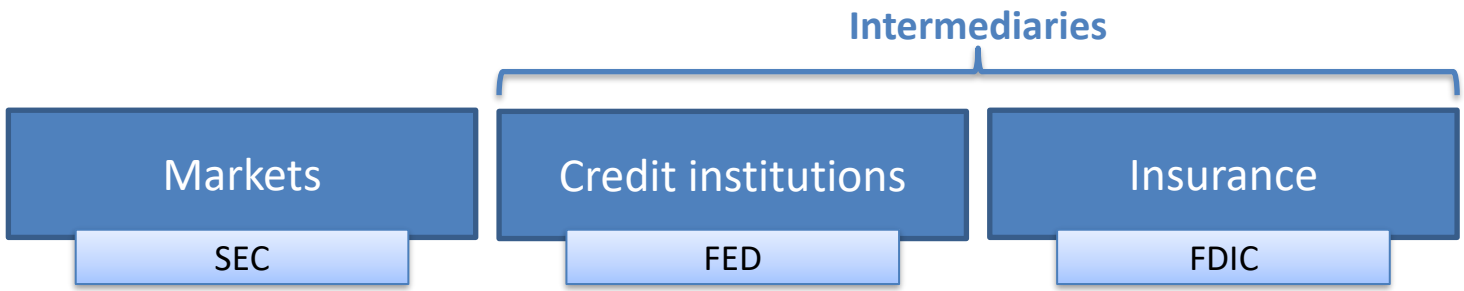
- Customer deposits on demand
- Customer saving deposits
- Central bank loans
- Interbank market funding
- Issued bond and debt certificates

Equity

- Social capital & reserves

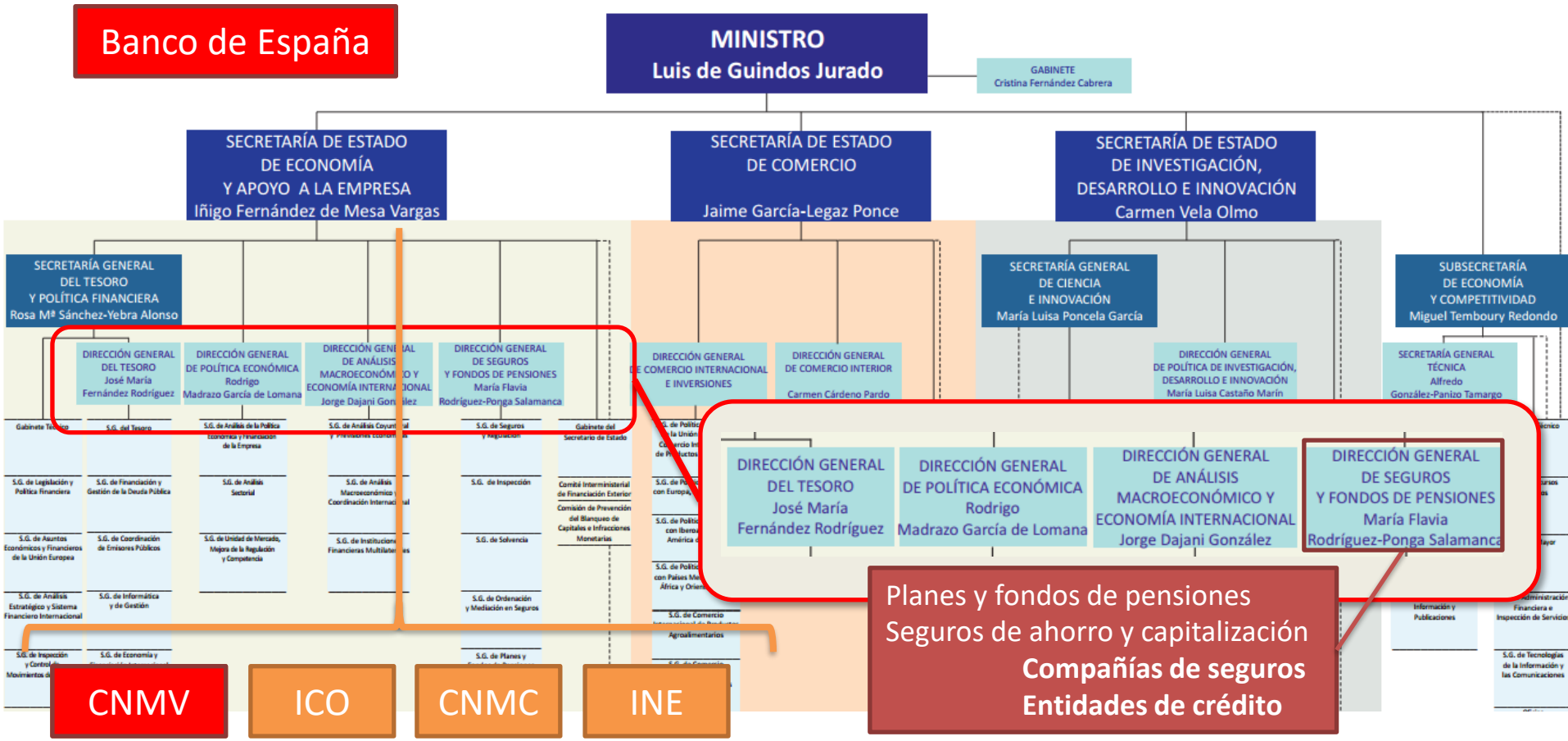


Summary



Who supervises what?	Credit institutions	Markets	Insurance companies
FED	**Practically all their activity is supervised by the Federal Reserve (FED) except when…**	…the interbank market and the public debt market.	
SEC	…they operate as Investment Services Firms (ISFs)	**The SEC (Securities Exchange Comission) supervises all markets except…**	…except when they operate as Investment Services Firms (ISFs)
FDIC	……or sell insurance or pension funds.		**Insurance companies are supervised by the FDIC (Federal Deposit Insurance Corporation)…**

Spanish financial system



CNMV: Comisión Nacional del Mercado de Valores

Spanish financial system

Banco de España. Competences

As member of the EBS

- Defining and implementing the Eurosystem's monetary policy
- Foreign exchange transactions consistent
- Payment systems in the euro area
  (emergency liquidity assistance (ELA) operations.
- Issuing legal tender banknotes (emision de billetes)

To be seen in Lesson 2 and 3

As central bank

Markets

Interest rate risk

Interbank market

- € market
- Other currency

EURIBOR

Financial assets

- Public debt
- Mortgage market

Term Structure of Interest Rates (TSIR)

Financial entities related with markets

- mutual guarantee societies.
- counterguarantee societies
- appraisal companies

Financial institutions

Banks

- Spanish banks
- EU bank branches
- Non EU bank branches

Official Lenders

- ICO

Saving banks

- Saving banks (cajas de ahorro)
- CECA (now banking asoc.)

Most savings banks are bailed out and transformed into banks

Corporate saving

- Cajas Rurales
- Credit unions (cooperativas de crédito)

financial establishments

- Mortage loans companies.
- Leassing companies.
- Renting companies
- Funding agencies

As a Central Bank is responsible for overseeing things related to **currency**, **Interest Rate Risk** and **financial intermediaries** (banks , saving banks ...) (Link)

Spanish financial system

CNMV (Comisión Nacional del Mercado de Valores). Competences

The purpose of the CNMV is to ensure the **transparency** of the Spanish market and the **correct formation of prices** in them, and to **protect investors**.

Financial assets markets

- Stock market
- Public debt (national issues performance and supervision is competence of Banco de España)
- AIAF: Corporative debt.
- MEFF: Option and futures
- MEFF: Option and futures of companies

Investment services companies

- Sociedades de valores (brokers and servicers that can operate on their own – they can buy)
- Agencia de valores (brokers and servicers that can not operate on their own)
- Portfolio management company (they can only do portfolio management)
- EU and non EU investment services companies.

Credit institutions

- Spanish credit institutions
- EU credit institutions
- Non EU credit institutions

Credit institutions give also investment services.

Other financial institutions

- Collective Investment Institutions
- Sociedades y fondos de capital riesgo (Venture Capital and Private Equity)
- Securitization funds (Gestoras de fondos de Titulización)
- Investment guarantee funds.

Spanish financial system

FUENTE: Bolsa de Madrid

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First steps. Time and money

What do you prefer? 100€ now or 100€ within a year.

Simple interest: $I = P \cdot r \cdot n$

n	1	2	3	4	5
Deposit	100,00	100,00	100,00	100,00	100,00
Interest	10,00	10,00	10,00	10,00	10,00
Take out	10,00	10,00	10,00	10,00	10,00

Compound interest: $S = P.(1 + r)^n$

n	1	2	3	4	5
Deposit	100,00	110,00	121,00	133,10	146,41
Interest	10,00	11,00	12,10	13,31	14,64
Take out	-	-	-	-	14,64

Example:

rate (r): 10%
periods (n): 5
amount (P): 100€

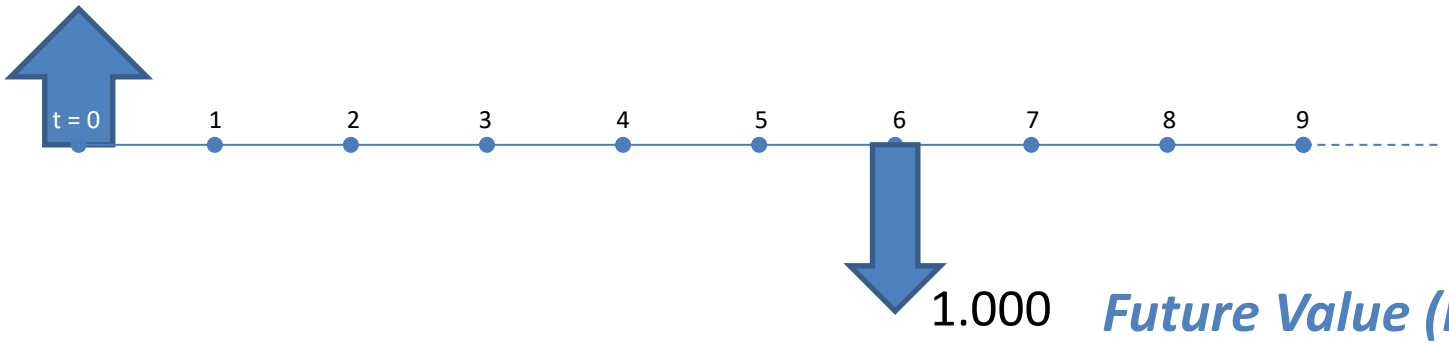
Non-annual compounding: the effective rate of interest.

Annual Percentage Rate (APR – TAE in spanish)

i_x: **Nominal rate** payable in *x* periods.

$$1 + r = \left(1 + \frac{i_x}{x}\right)^x$$

First steps. Time and money



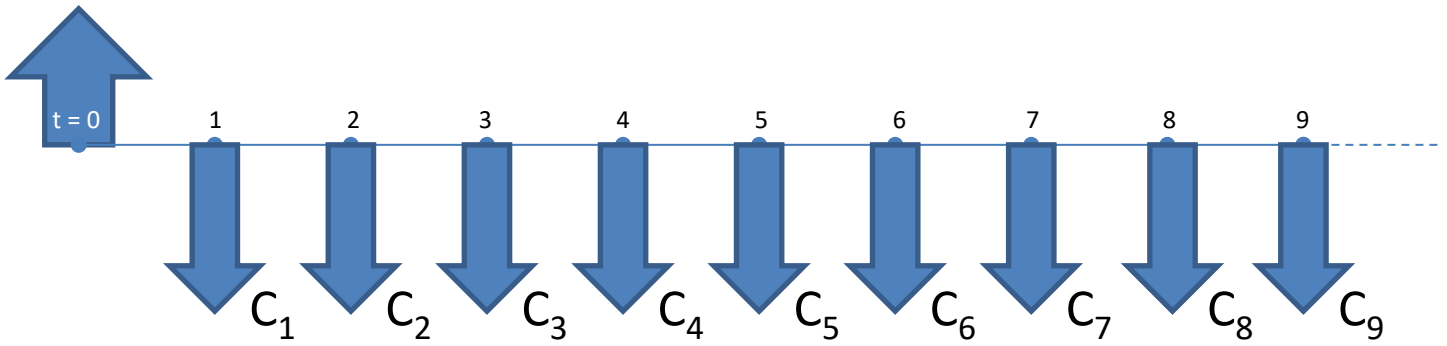
Future Value (FV)

How much must I invest at a rate of 6% payable annually to obtain 1.000€ after 6 years?

$$I = \frac{1.000}{(1+0,06)^6} = 704,96$$

Present Value (PV)

First steps. Time and money



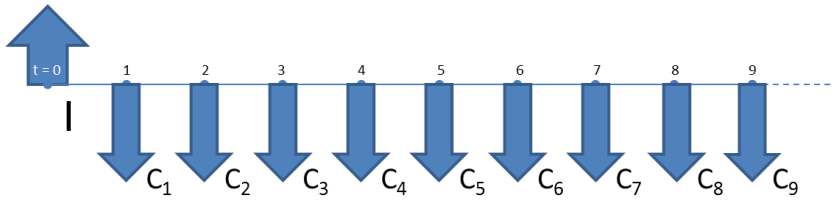
Cash flow

$$PV = \frac{C_1}{1+r} + \frac{C_2}{(1+r)^2} + \ldots + \frac{C_9}{(1+r)^9} = \sum_{n=1}^{9} \frac{C_n}{(1+r)^n}$$

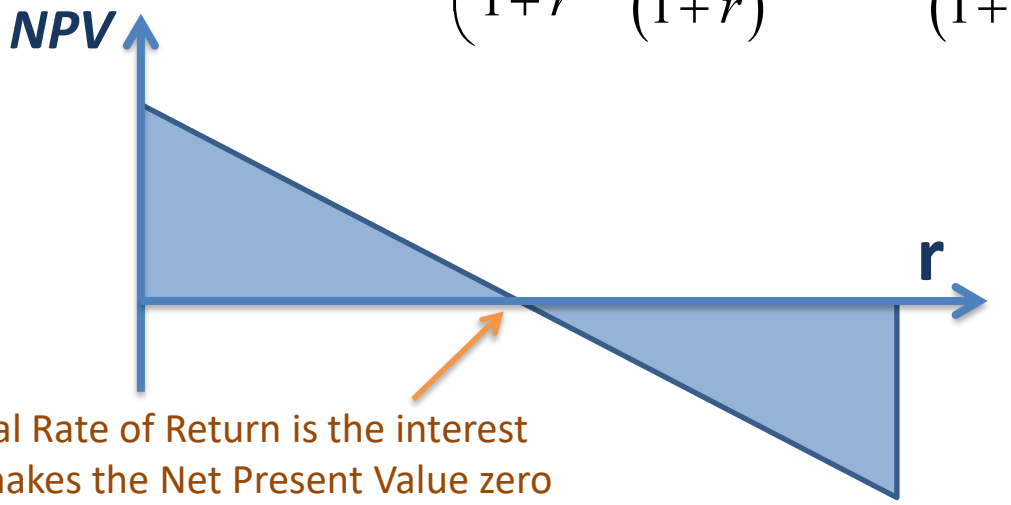
$$\sum_{n=1}^{13} \frac{1}{(1+r)^n} = \frac{1-(1+r)^{-13}}{r}$$

Continuing with the time

Internal rate of return (IRR)



$$NPV = \left(\frac{C_1}{1+r} + \frac{C_2}{(1+r)^2} + \ldots + \frac{C_9}{(1+r)^9} \right) - I$$



The Internal Rate of Return is the interest rate that makes the Net Present Value zero

What will we do next week?

We will talk about money

How does the monetary policy work?

Both in theory and in practice

Also, we will talk about the instruments of the Eurosystem

I need three voluntaries:

- From Bretton Woods to Vietnam.
- Germany hyperinflation
- How did George Soros "break the Bank of England"?

- No more than 5 minutes.
- It has to fit with the subject.
- We have to learn a moral.
- It has to be exciting.

Thanks