



**COMILLAS**

UNIVERSIDAD PONTIFICIA

ICAI

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# 5º E2 + Analytics

## ITINERARIO DE ECONOMICS & FINANCE

### Análisis de Servicios Financieros

Sesión 6. Entidades financieras

10 de octubre de 2024

**comillas.edu**

# ¿Dónde estamos?

#	Fecha	Tema
1	4 S	Situación actual y primeros pasos
<b>Bloque 1 - Situación de partida</b>		
2	11 S	El mapa: competencias y supervisores
3	18 S	Regulación e innovación
4	25 S	Instrumentos financieros
5	2 O	Rentabilidad, riesgo y liquidez
<b>Bloque 2 - Análisis de entidades</b>		
6	9 O	CAMELS y Capital
7	16 O	Rentabilidad y eficiencia
8	23 O	Liquidez bancaria
9	30 O	Riesgos y riesgo de mercado
<b>Bloque 3 - Fintech y disrupción</b>		
10	6 N	Bitcoin, medios de pago y blockchain
11	13 N	Ethereum, smart contracts y automatización de procesos
12	20 N	DeFi - El modelo User to Contract y Money Legos
13	27 N	DeFi - Innovación incremental
14	4D	DeFi - Innovación disruptiva

30 de octubre – Midterm:

- 8 preguntas de test
- 8 preguntas cortas de desarrollo
- 2 preguntas largas de desarrollo



# What are we going to do this week?

- **Introduction to credit institutions**
  - What is a bank?
  - A Bank balance sheet
  - What are the risks Banks have to manage? –first approach–
- **Credit institutions' products**
  - Loans
  - Line of credit
  - Bills of exchange
  - Letter of credit
- **Capital adequacy and Asset Quality**
  - Regulation of credit institutions
- **Evolution of the Spanish banking sector**

# ¿Qué es un banco?

Un banco es un intermediario entre ahorradores y personas que necesitan financiación.

- **Licencia bancaria emitida por el Banco de España (BdE):** La licencia bancaria es un permiso que autoriza a una entidad a operar como banco y por lo tanto captar depósitos del público.

Así se asegura que la entidad cumple con los requisitos regulatorios para proteger los intereses de los depositantes.

**Gestión del riesgo:** El negocio de un banco se basa fundamentalmente en la gestión de riesgos. Su negocio es una **prolongación de la política monetaria**.

- Préstamos y líneas de crédito: Al financiar el banco “está confiando”.
- Avaluos: Con un aval bancario el banco asume directamente el riesgo.

# Time Value of Money

TIR
11,03%

Año	0	1	2	3	4	5	6	7	8	9	10
FCF	- 1.000.000	170.000	170.000	170.000	170.000	170.000	170.000	170.000	170.000	170.000	170.000

TIR
6,00%

Año	0	1	2	3	4	5	6	7	8	9	10
FCF	- 500.000	118.698	118.698	118.698	118.698	118.698	-	-	-	-	-

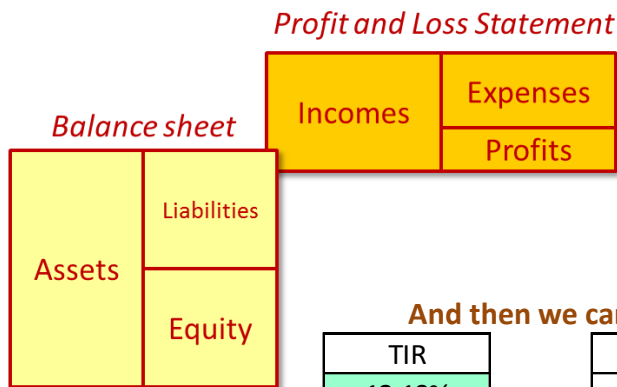
TIR
13,19%

Año	0	1	2	3	4	5	6	7	8	9	10
FCF	- 500.000	51.302	51.302	51.302	51.302	51.302	170.000	170.000	170.000	170.000	170.000

## What investment do you prefer?

Depends on the risk... imagine 6% investment is less risky... and 11,03% or 13,19% depends on your performance and work.

We are anticipating several classes:



Company project:

TIR
11,03%

Año	0	1	2	3
FCF	- 1.000.000	170.000	170.000	170.000

We go to the bank and we ask for a 6% loan of 0,5M€

TIR
6,00%

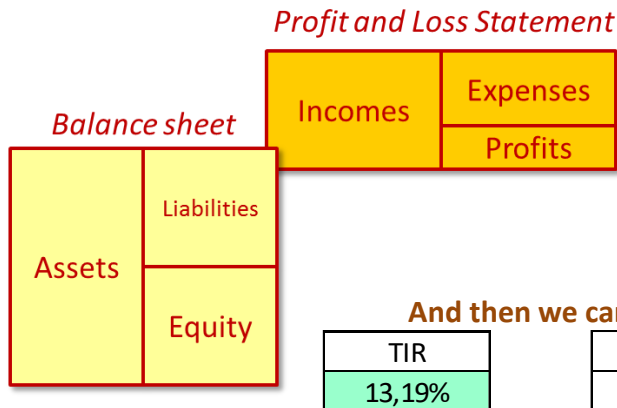
Año	0	1	2	3
FCF	- 500.000	118.698	118.698	118.698

And then we can get:

TIR
13,19%

Año	0	1	2	3	4	5	6
FCF	- 500.000	51.302	51.302	51.302	51.302	51.302	170.000





Company project:

TIR
11,03%

Año	0	1	2	3
FCF	- 1.000.000	170.000	170.000	170.000

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And then we can get:

TIR
13,19%

Año	0	1	2	3	4	5	6
FCF	- 500.000	51.302	51.302	51.302	51.302	51.302	170.000

## Talking about the **Past**

**ROA: 11,03%**

Return of Asset

**Kd: 6%**

Cost of debt

**ROE: 13,19%**

Return of Equity

## Talking about the **Future**

**We know:**

- Equity (E): 0,5M€
- Debt (D): 0,5M€
- Cost of debt (Kd): 6%
- Taxes rate (t)

**We don't know:**

- WACC
- Ke (Expected return)

$$WACC = K_e \frac{E}{D + E} + K_d (1 - t) \frac{D}{D + E}$$

(WACC): Weight Average Cost of Capital



# We go to the bank and ask for money

## What is a bank?

Some general notions:

- Commercial banking, retail banking, corporate banking, and private banking... and investment banking,
- Who do you think you are talking with? regional office, committees, decision makers...
- Importance of the procedure: follow the procedure is often more important than not taking risks.
- Business plan: make it easy to them and let them chalk it up (*que se apunten un tanto*).



5\* hotel built in 2007

Inversion cost: 50M€

25.500sqm built + Golf + Spa

2011 – Bankruptcy procedure

€49M debt with Privileged senior debt Claims of 34,7m€

34,7M€ privileged senior debt.

27M€ syndicated credit (5 banks) sled cats

Offer: Cash vs assumption debt

**Lets review what is a loan...**



# Loan calculation

## Loan repayments

- **Initial loan** = 1.000.000€
- **Interest rate** = 6%
- **Loan term** = 10 years
- Fully-amortized, level annual debt service payments consisting of interest and principal payments payable at the end of each year
- **Annual Constant** to be calculated using excel

According to the **type of collateral**, lending can be divided into:  
Unsecured lending – e.g. consumer loans  
Secured lending – e.g. mortgage loans  
According to the **interest rate**: fixed or floating rate

Calculate for each year using excel:

- Annual constant to be paid.
- Financial expenses to be paid each year.
- Principal payments to be paid each year.

PAGO(rate; term; Initial Value; Final Value)

X ✓ fx =PAGO(rate;10;\$D\$5;0)			
	C	D	E
		Interés	6%





# Loan calculation

## Loan repayments

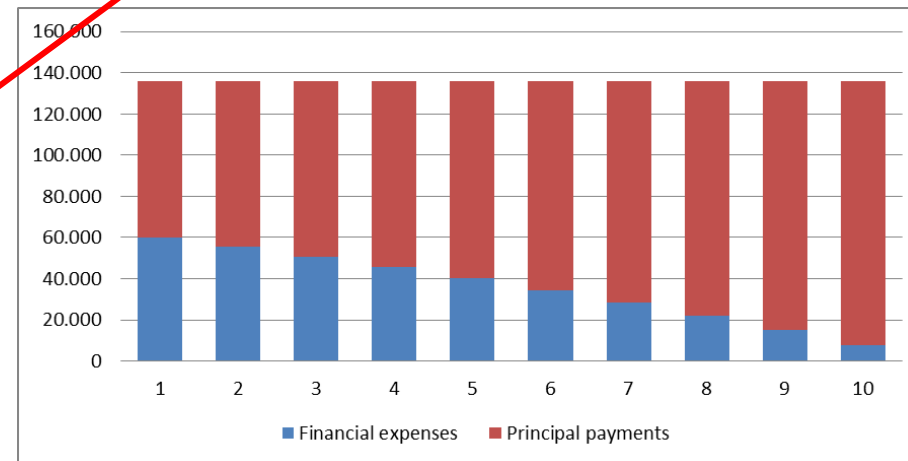
Time	0	1	2	3	4	5	6	7	8	9	10
Cash flow / Debt service	- 1.000.000	135.868	135.868	135.868	135.868	135.868	135.868	135.868	135.868	135.868	135.868
Financial expenses		60000	55447,923	50622,72	45508,006	40086,409	34339,616	28247,809	21790,601	14945,959	7690,6391
Principal		75.868	80.420	85.245	90.360	95.782	101.528	107.620	114.077	120.922	128.177
Outstanding debt	1.000.000	924.132	843.712	758.467	668.107	572.325	470.787	363.177	249.099	128.177	- 0

What is the IRR of the Cash Flow/Debt Service?

What is the relation between financial expenses and principal payments?

Why is it important to separate financial expenses and principal payments?

Debt Service	135.868
Financial expenses	28.248
Principal payments	107.620



# Other banking products

- **Line of credit:** An arrangement between a financial institution and a customer that establishes a maximum loan balance that the bank will permit the borrower to maintain. The borrower can draw down on the line of credit at any time, as long as he does not exceed the maximum set in the agreement.
- **Credit cards**

## Example:

New debt<sub>t</sub>

Quota

Financial Expenses<sub>t</sub> = Od<sub>t-1</sub> · Kd

Od<sub>t</sub> = Od<sub>t-1</sub> + New debt<sub>t</sub> – Quota + Financial Expenses<sub>t</sub>

Od = Outstanding debt = Total owed

Maintenance cost	0,10%	0,008% (monthly)
Interest rate	10%	0,797% (monthly)
Quota	5.000 €	
Drawable limit	60.000 €	

Month	1	2	3	4	5	6	7	8	9	10
Disposal	0 €	10.000 €	20.000 €	0 €	0 €	30.000 €	0 €	0 €	0 €	0 €
Total owed	0 €	10.000,00 €	25.079,74 €	20.279,73 €	15.441,44 €	40.564,58 €	35.888,04 €	31.174,22 €	26.422,81 €	21.633,51 €
Financial expenses	0 €	0,00 €	79,74 €	199,99 €	161,71 €	123,13 €	323,47 €	286,18 €	248,59 €	210,70 €
Quota	0 €	0 €	5.000 €	5.000 €	5.000 €	5.000 €	5.000 €	5.000 €	5.000 €	5.000 €
Maintenance cost	5,00 €	5,00 €	5,00 €	5,00 €	5,00 €	5,00 €	5,00 €	5,00 €	5,00 €	5,00 €



# Other banking products

- **Bills of Exchange (letra de cambio):** A non-interest-bearing written order that binds one party to pay a fixed sum of money to another party at a predetermined future date. They are generally transferable by endorsements. Bills of exchange can be discounted at banks.
  - The person who writes out the order to pay is called the drawer (librador)
  - The person upon whom the bill of exchange is drawn (who is ordered to pay) is called the drawee (librado o aceptante).
  - The drawee may "accept" the bill.
  - The person who is entitled to receive the money from the acceptor is called the "payee" (beneficiario o tomador)

Check, commercial paper  
(pagarés), bank endorsement...

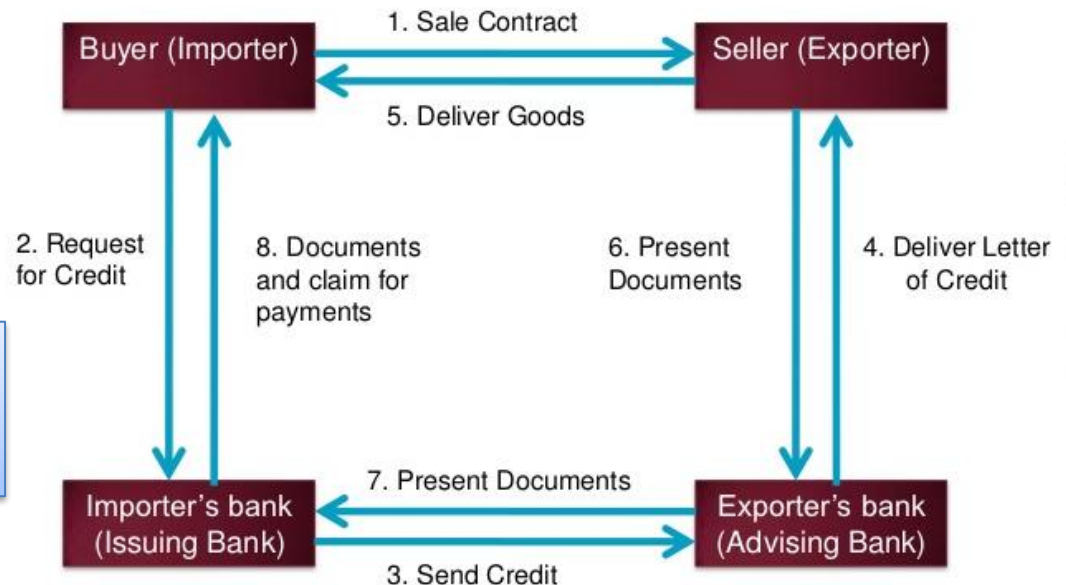
Regarding bank endorsements: it has to  
be written: "payable on first demand"

The image shows a sample form for a 'LETRA DE CAMBIO' (Bill of Exchange). The form is titled 'LETRA DE CAMBIO' and includes the phrase 'SIN PROTESTO'. It contains several fields for information: 'REFERENCIA:', 'LUGAR Y FECHA', 'El día', 'orden de:', 'Nombre del Librado', 'Dirección', and 'Firma del Librador'. There is also a box for 'Nº' (Number). The form is in Spanish and includes instructions for the acceptor and the drawer.

# Other banking products

- **Letter of credit.** A letter of credit is a letter from a bank guaranteeing that a buyer's payment to a seller will be received on time and for the correct amount.
- **Documentary letter of credit.**

It is recommended to be unconditional, irrevocable and payable at sight, issued by a Spanish bank.



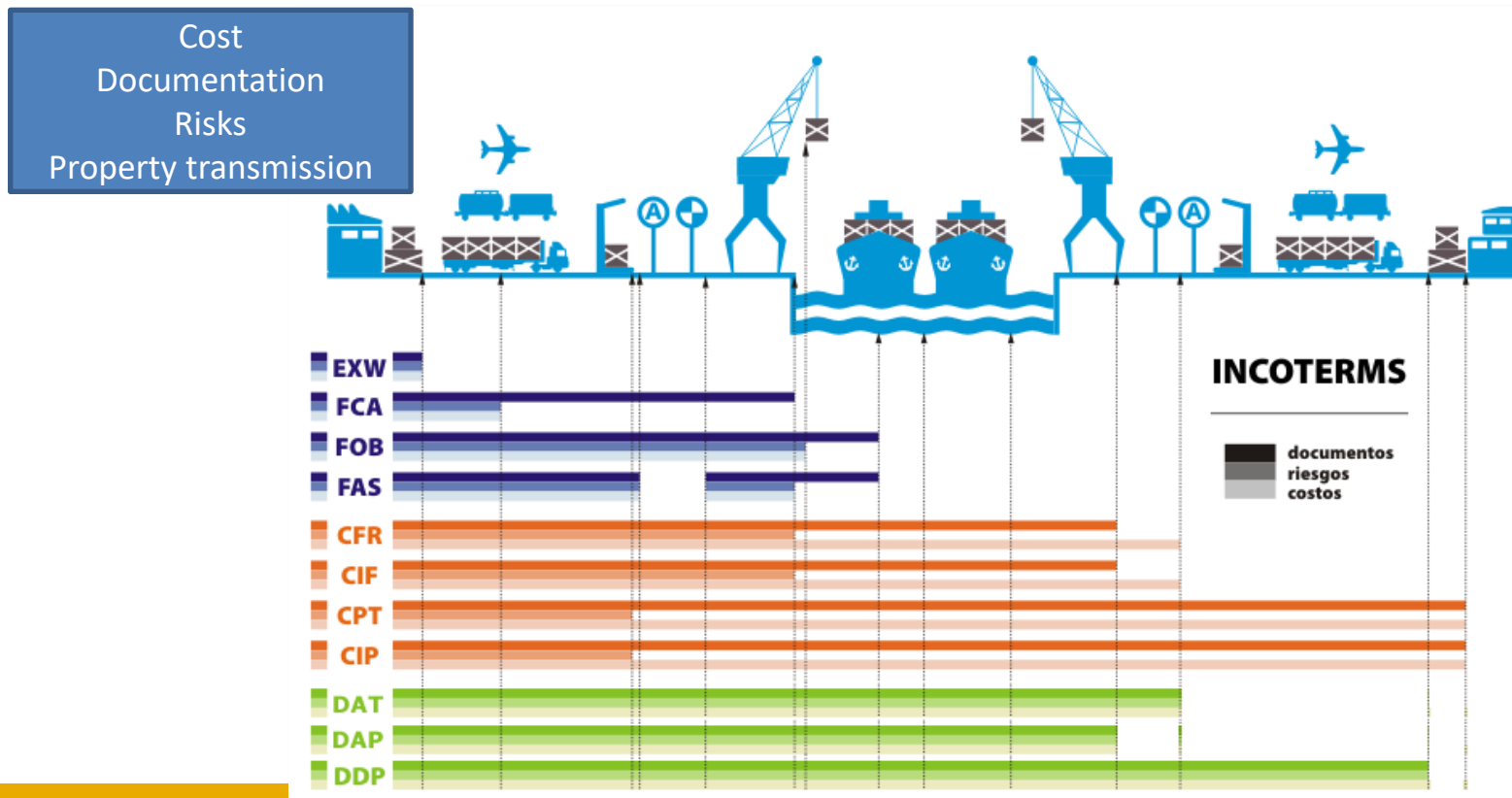
These contracts could include following documents:

- Bill of lading (BOL) is normally the document accepted by banks as proof that goods have been shipped
- Insurance documents
- SGS, AENOR, Bureau Veritas certificate



# Other banking products

- **Documentary letter of credit.** (Annex: INCOTERMS)
- INCOTERMS (International Commercial Terms) are a series of pre-defined commercial terms published by the International Chamber of Commerce relating to international commercial law.



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# Liquidez y estandarización: Commodities

## Contratos de commodities comunes:

- **Petróleo Crudo WTI (West Texas Intermediate) - CL:** Benchmark estadounidense para el petróleo.
- **Petróleo Crudo Brent - BZ:** Referencia internacional para los precios del petróleo.
- **Gas Natural - NG:** Esencial para la calefacción, electricidad y como combustible.
- **Oro - GC:** Metal precioso utilizado como cobertura financiera.
- **Plata - SI:** Metal precioso con aplicaciones industriales y de inversión.
- **Soja - ZS:** Incluye futuros de la soja en grano.
- **Aceite de Soja - ZL:** Derivado de la soja, usado en alimentación y biocombustibles.
- **Azúcar No. 11 - SB:** Estándar para el comercio de azúcar crudo a nivel mundial.

## Otros contratos:

- **Café C Arábica - KC:** Representa el café de alta calidad en el mercado de futuros.
- **Cacao - CC:** Importante para la industria del chocolate y productos alimenticios.
- **Algodón No. 2 - CT:** Esencial para la industria textil.
- **Jugo de Naranja Congelado Concentrado - OJ:** Para la industria de bebidas.
- **Vientres de Cerdo - HE:** Importante para el sector cárnico, reflejando el precio del cerdo.
- **Madera - LB:** Indicador del sector de la construcción y manufactura de papel.

# Liquidez y estandarización: Commodities

Los contratos de commodities están altamente estandarizados para facilitar la negociación en los mercados globales. Esta estandarización incluye especificaciones técnicas detalladas, condiciones de entrega, y modalidades de negociación.

## Azúcar No. 11

### Especificaciones Técnicas:

- **Producto:** Azúcar crudo.
- **Calidad:** Mínimo de 96 grados de polarización.
- **Tamaño del Contrato:** 112,000 libras (aproximadamente 50.8 toneladas métricas).
- **Cotización:** Centavos de dólar por libra.

### Detalles de Negociación:

- **Mercado:** Intercontinental Exchange (ICE).
- **Horario de Negociación:** Varía, con sesiones abiertas durante las horas de mercado principales.
- **Meses de Contrato:** Contratos disponibles para meses específicos, facilitando coberturas y especulaciones a lo largo del año.
- **Liquidación:** Puede ser física (entrega del producto) o por diferencias (compensación en efectivo).



# Liquidez y estandarización

*“Confirmando la compra de 1000 toneladas de Azúcar No. 11, FOB Puerto de Santos por \$600.000. Entrega en contenedores de 40 pies, para el mes de noviembre. Te mando la carta de crédito irrevocable y confirmada.”*

Uniendo todas las piezas del puzzle:

- **INCOTERMS:** Facilitan la comprensión común de las responsabilidades de carga y descarga, costos y riesgos.
- **Cartas de Crédito:** Estándares bancarios que aseguran el pago, reduciendo el riesgo de transacciones.
- **Contratos de Commodities:** Precisos y estandarizados para el azúcar (ejemplo: Azúcar No. 11), que especifican calidad, cantidad y otros términos relevantes.
- **Contenedores (20 y 40 pies):** Estandarización en el transporte de mercancías, simplificando la logística.

**...si además sumamos las plataformas de trading electrónico...**





# Credit institutions

- In groups of two:

**What are the main tasks performed by Banks?**

**What relations do these task have with their balance sheet?**

**What are the risk Banks have to manage?**



# Credit institutions

Credit institutions collect deposits from the public and channel these resources towards investment projects, i.e. lending to companies and individuals.

**Credit institutions in Spain:** Banks, Savings Banks – have almost disappeared following the 2008 financial crisis- and Credit Cooperatives.

**What are the main tasks performed by credit institutions?**

## Assets

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

### Off-Balance Sheet products

- Bank endorsements
- Letters of Credit

## Liabilities

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

### Securitizations

## Equity

- Social capital & reserves

### Banking services

Payment services: bank transfers, credit and debit cards, etc. “Universal banking”: distribution and even manufacturing of non-lending products: mutual funds, pension funds, insurance products, etc.

What risks do you see?  
How to control the risk?

# What are the risk Banks have to manage?

- **Liquidity risk.** Caused by the bank's inability to meet all its due obligations
- **Credit risk.** Caused by borrower's default on its obligations to the bank.
- **Market risk.** includes interest rate and foreign exchange risk.
  - **Interest rate risk.** Changes in interest rates.
  - **Foreign exchange risk.** Caused by changes in exchange rates.
- **Reputational risk** is the risk of loss caused by a negative impact on the market positioning of the bank.
- **Exposure risks.** Bank's exposure to a single entity or to a group of related entities.
- **Operational risk** caused by omissions in the work of employees, inadequate internal procedures and processes, inadequate management of information and other systems, and unforeseeable external events.
- **Investment risks** Bank's investment in non-financial sector entities, fixed assets and investment real estate.
- **Country risk.** Includes political and economic risk, and transfer risk.
- **Legal risk** from court disputes due to breach of contractual and legal obligations, and penalties and sanctions pronounced by a regulatory body.
- **Strategic risk** is the risk of loss caused by a lack of a long-term development component in the bank's managing team.

Basel II – June 2004

Source: [http://www.nbs.rs/internet/english/55/55\\_6/](http://www.nbs.rs/internet/english/55/55_6/)

# 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: mortgages– or unsecured –consumer loans –)
- Other Investment products

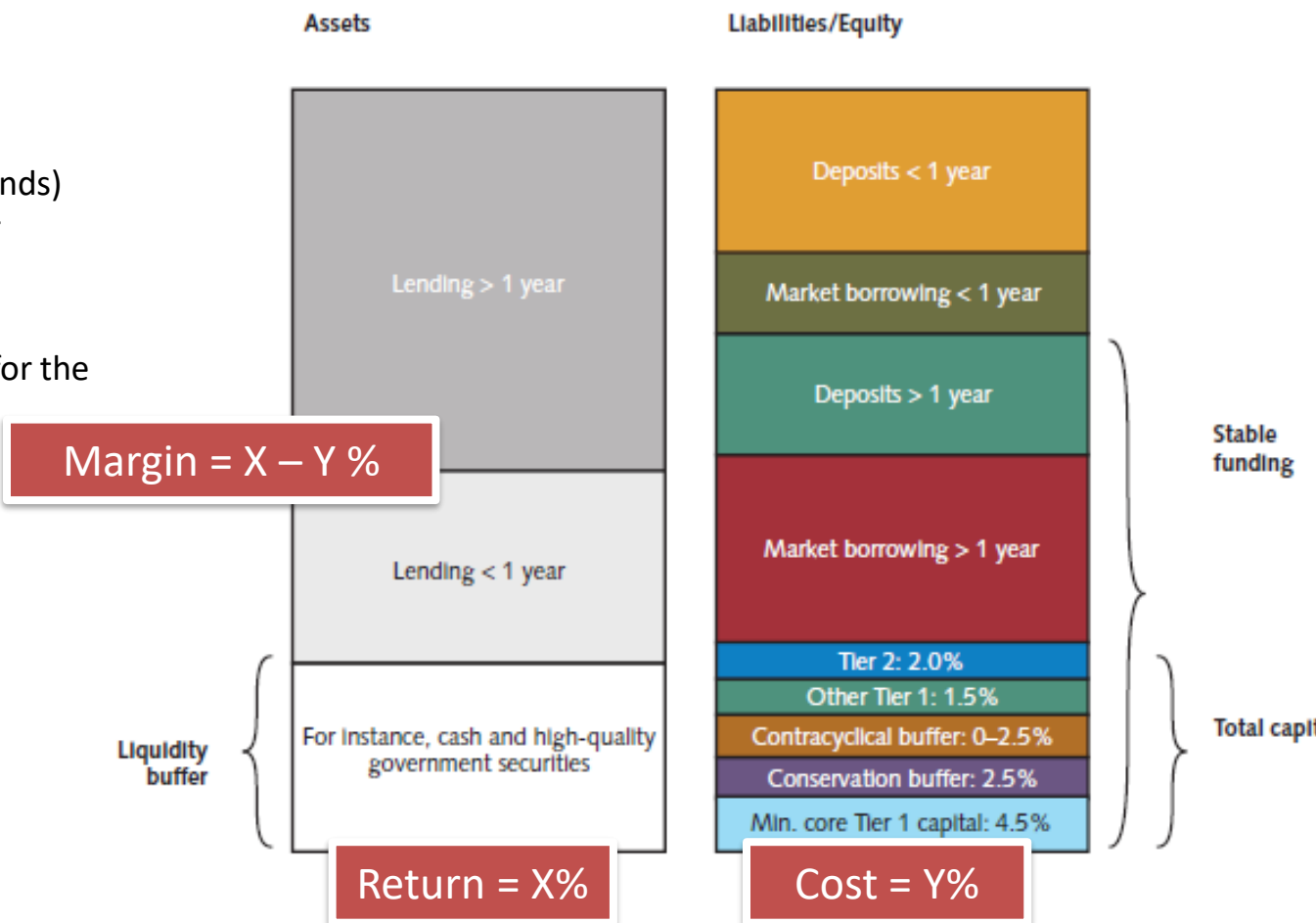
A liability for a company is an asset for the creditor bank.

### Liabilities

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

### Equity

- Social capital & reserves



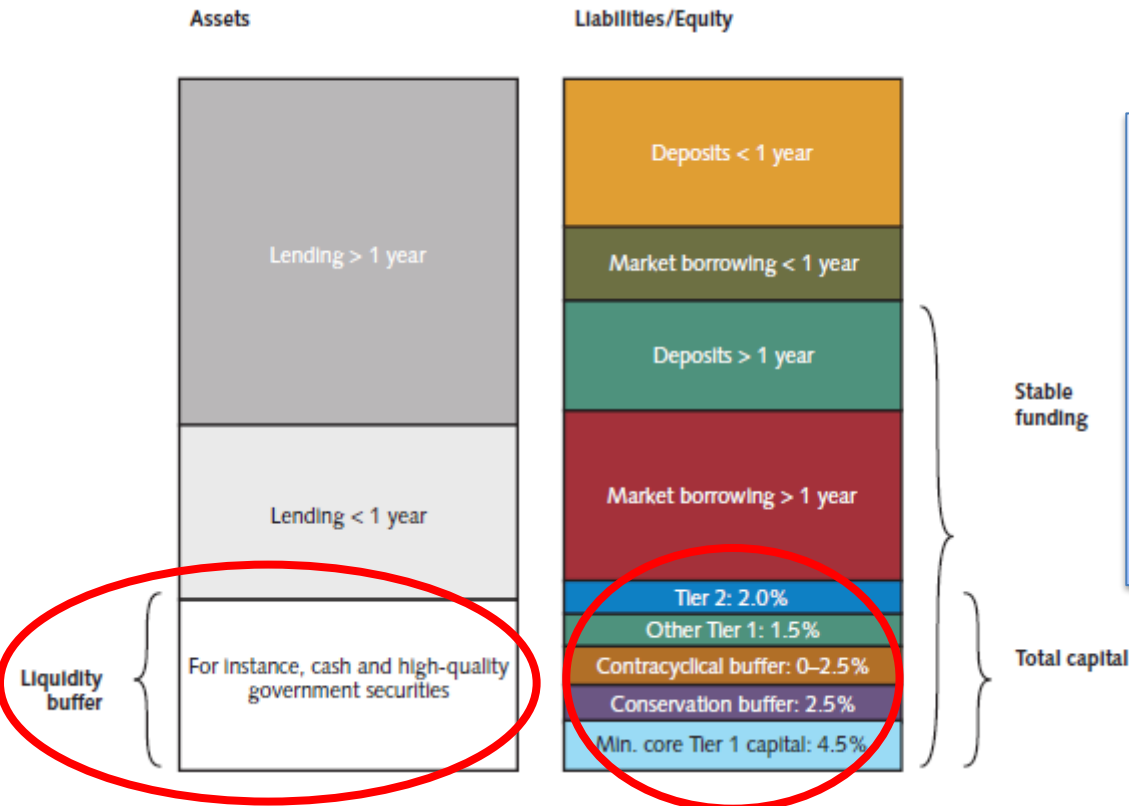
# CAMELS

- **C**apital adequacy
- **A**sset quality,
- **M**anagement capabilities,
- **E**arnings sufficiency,
- **L**iquidity position, and
- **S**ensitivity to market risk



# What are the risk Banks have to manage?

Basel III – Dec 2010



## Liquidity and credit risk.

- Requirements for common equity and Tier 1 capital will be 4.5% and 6%, respectively.
- The liquidity coverage ratio (LCR) will require banks to hold a buffer of high quality liquid assets sufficient to deal with situations like "Bank Run".
- Leverage Ratio > 3%: The leverage ratio was calculated by dividing Tier 1 capital by the bank's average total consolidated assets;

*Just an introduction, we will see it with more detail.*

Source: Asymptotix (The Riksbank: Basel III - tougher rules for banks)



# Regulation of credit institutions – Basel

And other central banks...



## Who control Central Banks?

They control themselves through the BIS

Formerly, the Basel Committee consisted of representatives from central banks and regulatory authorities of several countries. The committee does not have the authority to enforce recommendations. A summary of its recent recommendations:

- **Basell I** (Publish in 1988) Minimal capital requirements depending on the risk exposure. Capital = 8% assets weighted (5 categories with different weights: 0%, 10%, 20%, 50%, 100% -)
- **Basel II international regulation** (Basel II framework agreement approved by the Basel Committee on Banking Supervision on June 26th 2004) and incorporated into Spanish law through Real Decreto 216/2008 and Circular del Banco de España 3/2008
- **Basel III framework agreement**, approved by the Basel Committee on Banking Supervision in December 2010 and partly reflected into Spanish law through RD 2/2011. Basel III is completely reflected into European Law through REGULATION (EU) N° 575/2013, issued on June 26th 2013



# Regulation of credit institutions – Basel I

**1988 - Why Basel I was needed?** The reason was to create a level playing field for “internationally active banks” Banks from different countries competing for the same loans would have to set aside roughly the same amount of capital on the loans. (Became effective at the end of 1992).

- Capital was set at 8% and was adjusted by a loan’s credit risk weight.
- Credit risk was divided into 5 categories: 0%, 10%, 20%, 50%, and 100%.

## **0% Risk Weight:**

- Cash,
- Claims on central governments and central banks denominated in national currency and funded in that currency
- Other claims on OECD countries, central governments and central banks
- Claims collateralized by cash of OECD government securities or guaranteed by OECD Governments

## **20% Risk Weight**

- Claims on multilateral development banks and claims guaranteed or collateralized by securities issued by such banks
- Claims on, or guaranteed by, banks incorporated in the OECD
- Claims on, or guaranteed by, banks incorporated in countries outside the OECD with residual maturity of up to one year
- Claims on non-domestic OECD public-sector entities, excluding central government, and claims on guaranteed securities issued by such entities
- Cash items in the process of collection





# Regulation of credit institutions – Basel I

## 50 % Risk Weight

- Loans fully securitized by mortgage on residential property that is or will be occupied by the borrower or that is rented.

## 100% Risk Weight

- Claims on the private sector
- Claims on banks incorporated outside the OECD with residual maturity of over one year
- Claims on central governments outside the OECD (unless denominated and funded in national currency)
- Claims on commercial companies owned by the public sector
- Premises, plant and equipment, and other fixed assets
- Real estate and other investments
- Capital instruments issued by other banks (unless deducted from capital)
- All other assets

## At National Discretion (0,10,20 or 50%)

- Claims on domestic public sector entities, excluding central governments, and loans guaranteed by securities issued by such entities

- The approach in setting credit risk weights is too simplistic
- it ignored other types of risk

# Regulation of credit institutions – Basel II

Implementation of the Basel II Framework took place between 2007 and 2009.

Basel-II consisted of three pillars:

- **Minimum capital requirements** for credit risk, market risk and operational risk—expanding the 1988 Accord (Pillar I)
- **Supervisory review** of an institution's capital adequacy and internal assessment process (Pillar II)
- **Effective use of market discipline** as a lever to strengthen disclosure and encourage safe and sound banking practices (Pillar III)

## PILLAR I: Minimum Capital Requirement

- 1) Capital Measurement: New Methods
- 2) Market Risk: In Line with 1993 & 1996
- 3) Operational Risk: Working on new methods

$$MCR = \frac{\text{Capital}}{\text{Credit Risk} + \text{Market Risk} + \text{Operational Risk}} \geq 8\%$$

## PILLAR 2: Supervisory Review Process

- 1) Banks are advised to develop an *internal capital assessment process* and set targets for capital to commensurate with the bank's risk profile
- 2) Supervisory authority is responsible for evaluating how well banks are assessing their capital adequacy

## PILLAR 3: Market Discipline

Aims to reinforce market discipline through enhanced disclosure by banks. It is an indirect approach, that assumes sufficient competition within the banking sector.



# Regulation of credit institutions – Basel III

	Capital					Liquidity
	Pillar 1			Pillar 2	Pillar 3	
	Capital	Risk coverage	Containing leverage	Risk management and supervision	Market discipline	
All Banks	<p><b>Quality and level of capital</b> Greater focus on common equity. The minimum will be raised to 4.5% of risk-weighted assets, after deductions.</p> <p><b>Capital loss absorption at the point of non-viability</b> Contractual terms of capital instruments will include a clause that allows – at the discretion of the relevant authority – write-off or conversion to common shares if the bank is judged to be non-viable. This principle increases the contribution of the private sector to resolving future banking crises and thereby reduces moral hazard.</p> <p><b>Capital conservation buffer</b> Comprising common equity of 2.5% of risk-weighted assets, bringing the total common equity standard to 7%. Constraint on a bank's discretionary distributions will be imposed when banks fall into the buffer range.</p> <p><b>Countercyclical buffer</b> Imposed within a range of 0-2.5% comprising common equity, when authorities judge credit growth is resulting in an unacceptable build up of systematic risk.</p>	<p><b>Securitisations</b> Strengthens the capital treatment for certain complex securitisations. Requires banks to conduct more rigorous credit analyses of externally rated securitisation exposures.</p> <p><b>Trading book</b> Significantly higher capital for trading and derivatives activities, as well as complex securitisations held in the trading book. Introduction of a stressed value-at-risk framework to help mitigate procyclicality. A capital charge for incremental risk that estimates the default and migration risks of unsecuritised credit products and takes liquidity into account.</p> <p><b>Counterparty credit risk</b> Substantial strengthening of the counterparty credit risk framework. Includes: more stringent requirements for measuring exposure; capital incentives for banks to use central counterparties for derivatives; and higher capital for inter-financial sector exposures.</p> <p><b>Bank exposures to central counterparties (CCPs)</b> The Committee has proposed that trade exposures to a qualifying CCP will receive a 2% risk weight and default fund exposures to a qualifying CCP will be capitalised according to a risk-based method that consistently and simply estimates risk arising from such default fund.</p>	<p><b>Leverage ratio</b> A non-risk-based leverage ratio that includes off-balance sheet exposures will serve as a backstop to the risk-based capital requirement. Also helps contain system wide build up of leverage.</p>	<p><b>Supplemental Pillar 2 requirements.</b> Address firm-wide governance and risk management; capturing the risk of off-balance sheet exposures and securitisation activities; managing risk concentrations; providing incentives for banks to better manage risk and returns over the long term; sound compensation practices; valuation practices; stress testing; accounting standards for financial instruments; corporate governance; and supervisory colleges.</p>	<p><b>Revised Pillar 3 disclosures requirements</b> The requirements introduced relate to securitisation exposures and sponsorship of off-balance sheet vehicles. Enhanced disclosures on the detail of the components of regulatory capital and their reconciliation to the reported accounts will be required, including a comprehensive explanation of how a bank calculates its regulatory capital ratios.</p>	<p><b>Global liquidity standard and supervisory monitoring</b></p> <p><b>Liquidity coverage ratio</b> The liquidity coverage ratio (LCR) will require banks to have sufficient high-quality liquid assets to withstand a 30-day stressed funding scenario that is specified by supervisors.</p> <p><b>Net stable funding ratio</b> The net stable funding ratio (NSFR) is a longer-term structural ratio designed to address liquidity mismatches. It covers the entire balance sheet and provides incentives for banks to use stable sources of funding.</p> <p><b>Principles for Sound Liquidity Risk Management and Supervision</b> The Committee's 2008 guidance <i>Principles for Sound Liquidity Risk Management and Supervision</i> takes account of lessons learned during the crisis and is based on a fundamental review of sound practices for managing liquidity risk in banking organisations.</p> <p><b>Supervisory monitoring</b> The liquidity framework includes a common set of monitoring metrics to assist supervisors in identifying and analysing liquidity risk trends at both the bank and system-wide level.</p>
SIFIs	<p>In addition to meeting the Basel III requirements, global systemically important financial institutions (SIFIs) must have higher loss absorbency capacity to reflect the greater risks that they pose to the financial system. The Committee has developed a methodology that includes both quantitative indicators and qualitative elements to identify global systemically important banks (SIBs). The additional loss absorbency requirements are to be met with a progressive Common Equity Tier 1 (CET1) capital requirement ranging from 1% to 2.5%, depending on a bank's systemic importance. For banks facing the highest SIB surcharge, an additional loss absorbency of 1% could be applied as a disincentive to increase materially their global systemic importance in the future. A consultative document was published in cooperation with the Financial Stability Board, which is coordinating the overall set of measures to reduce the moral hazard posed by global SIFIs.</p>					



# Regulation of credit institutions – Basel III

Given the basic equation:  $\frac{\text{Capital}}{\text{Credit Risk}} \geq 8\%$

Basel III modify the definition of three concepts.  
(Capital, credit risk and the minimum level of capital)

## New definition of capital (quality)

Total capital = Tier 1 + Tier 2

**Tier 1 Capital** = Common equity Tier 1 + Additional Tier 1

**Common equity Tier 1:** common shares, retained earnings, disclosed reserves

**Additional Tier 1:** includes unsecured perpetual hybrid instruments, junior to subordinated debt

**Tier 2:** unsecured subordinated debt, minimum maturity of 5 years

	Common Equity Tier 1	Tier 1 Capital	Tier 2 Capital	Total Capital
<b>Minimum level of capital</b>	4.5	6.0	2.0	8.0
(within parentheses Basel II requirements)	(2.0)	(4.0)	(4.0)	(8.0)

**Conservation buffer:** 2.5% composed of common equity

To smooth banks' idiosyncratic pro-cyclicality: banks are not obliged to raise new capital but they re-build the buffer by limiting distribution of earnings

**Countercyclical buffer:** 0% – 2.5% of fully loss absorbing capital instruments

To smooth system-wide pro-cyclicality

## Credit risk

Enhanced coverage for:

- Securitisation.
- Trading book.
- Counterparty credit risk



# Other relevant regulation

**Single Banking License at the European Union:** The single license authorizes a bank established in a Member State to open branches without any other formalities or to propose its services in the partner countries.

## Banking Union process in the UE (Day 4)

- 1) The **Single Supervisory Mechanism (SSM)**, based in Frankfurt.
- 2) The **Single Resolution Mechanism (SRM)**
- 3) The **Single Rulebook**. One single regulation as regards capital requirements and bank insolvency procedures to be implemented throughout all member states.

### Deposit Guarantee Fund

The aim of the Deposit Guarantee Fund is to protect account holders

The Fund is a legal entity managed by a Comisión Gestora, whose members are appointed by the Bank of Spain and the member banks

Member banks contribute annually to the Fund with a percentage of their total deposits

The 2009 EU Directive unified the minimum coverage level of guaranteed deposits. Therefore, at present, all national funds must guarantee minimum deposits of €100,000 per saver and bank



# Other relevant regulation

## Credit risk and Provisions (provisiones específicas y genéricas)

- Plan general contable
- IFRS 9 Financial Instruments (replacement of IAS 39)
- Circulares del Banco de España

Importance of provisions  
in decision making

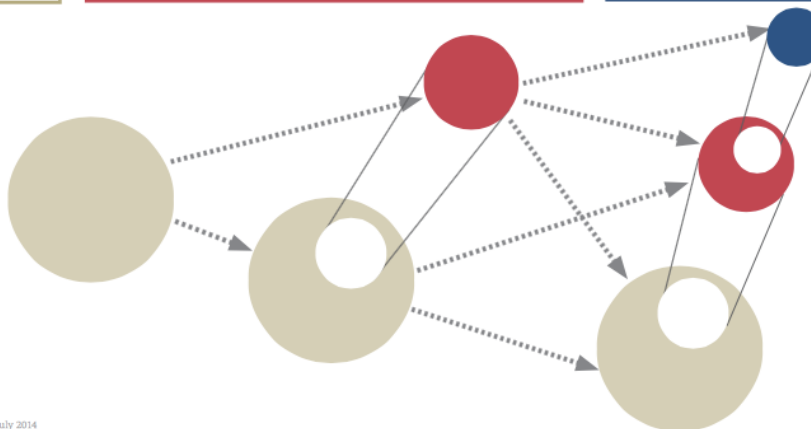
## Accounting for expected credit losses—example

Portfolio of home loans originated in a country. 12-month expected credit losses are recognised for all the loans on initial recognition (**Stage 1**).

Information emerges that a region in the country is experiencing tough economic conditions. Lifetime expected credit losses are recognised for those loans within that region (**Stage 2**) and 12-month expected credit losses, including any changes in that estimate, for other loans (**Stage 1**).

More information emerges and the entity is able to identify the particular loans that have defaulted or will imminently default (**Stage 3**). Lifetime expected credit losses continue to be recognised and interest revenue switches to a net interest basis.

- Stage 1
- Stage 2
- Stage 3



From IAS39

**LAS**  
NTIFICIA

# Other relevant regulation

El Reglamento (UE) n.º 575/2013 del Parlamento Europeo y del Consejo, de 26 de junio de 2013, sobre los requisitos prudenciales de las entidades de crédito y las empresas de inversión, y por el que se modifica el Reglamento (UE) n.º 648/2012.

[Ley 10/2014, de 26 de junio, de ordenación, supervisión y solvencia de entidades de crédito.](#)

*Ley 26/1988, de 29 de julio, sobre Disciplina e Intervención de las Entidades de Crédito (derogada)*

**28th of December, 1993 – BANESTO**  
“Hole” of 4.000M€  
Bank bailout through two ways:

- Fondo de Garantía de Depósitos bought assets for 1.700M€ and gave a loan of 1.900M€
- The bank was sold to Banco Santander

**28th of March, 2008 –**  
**Caja Castilla la Mancha**  
Bailout of 9.000M€.

## Artículo 31

1. Cuando una entidad de crédito se encuentre en alguna de las situaciones descritas en la Ley 9/2012, de 14 de noviembre, de reestructuración y resolución de entidades de crédito, podrá acordarse la sustitución provisional de su órgano de administración en los términos previstos en esta Ley y con las particularidades recogidas en la citada Ley.
2. También podrá acordarse la intervención de una entidad de crédito o la sustitución provisional de su órgano de administración en los términos previstos en esta Ley cuando existan indicios fundados de que aquella se encuentre en una situación de excepcional gravedad que ponga en peligro su estabilidad, liquidez o solvencia.

**Similarities and differences between  
two situations**





# Regulation: stress test

The objective of the EU-wide stress test is to provide supervisors, banks and market participants with a common analytical framework to consistently compare and assess the resilience of large EU banks and the EU banking system to adverse economic shocks. The 2016 EU-wide stress test does not contain a pass fail threshold and is designed to be used as a crucial input into the SREP (Supervisory review and evaluation) in 2016, with the primary aim of setting Pillar 2 capital guidance although no supervisory actions are precluded.

The stress test exercise is based on a common methodology and scenarios, and is accompanied by uniform data templates that capture starting point data and stress test results to allow a rigorous and comparable assessment of the banks in the sample. The EBA was responsible for coordinating the exercise and for the final dissemination of the results in line with its commitment to enhancing the transparency of the EU banking sector. Competent authorities were responsible for assuring the quality of the results and are responsible for any necessary supervisory follow-up measures as part of the SREP.

Recovering the  
confidence in the system

- The adverse scenario implies EU real GDP growth rates over the three years of the exercise of -1.2%, -1.3% and 0.7% respectively –a deviation of 7.1% from its baseline level in 2018.
- It assesses 51 banks from 15 EU and EEA countries – 37 from SSM countries and 14 from Denmark, Hungary, Norway, Poland, Sweden and the UK. **(29 of July 2016)**





# Regulation: one thought

Regulation will continue to broaden and deepen

- Basilea regulation tries to mend what happened in 2008 (regulation generation process is slow, more if we are in Europe)
- Experience shows how important is central banks' governors managing.

Technology and advanced analytics are evolving (Big Data, machine learning, crowdsourcing...)

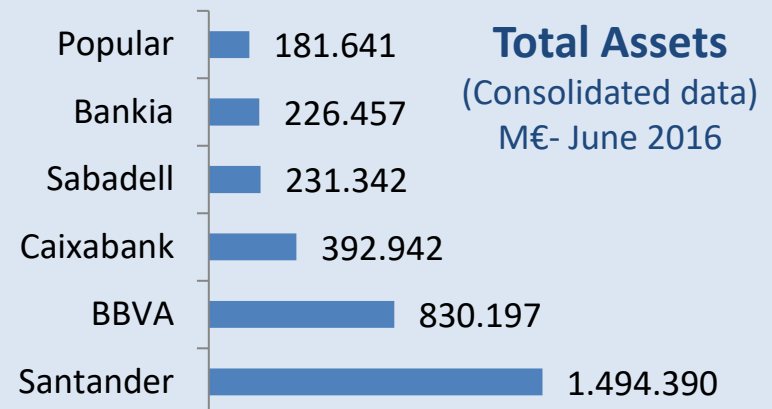
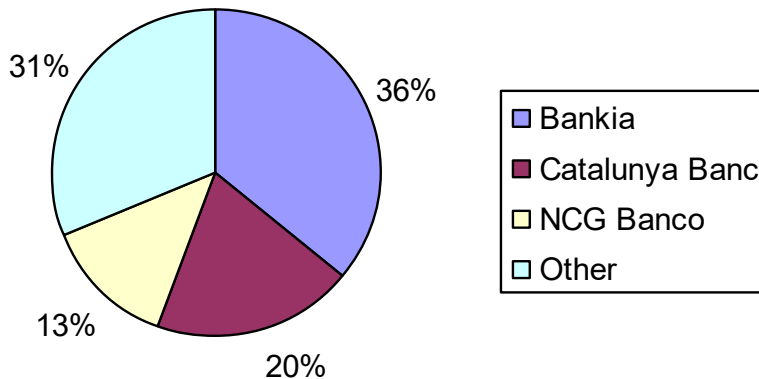
- **And new risks are emerging...** as example ([from McKinsey&Company](#)):
  - **Model risk.** Banks' increasing dependence on business modeling requires that risk managers understand and manage model risk better. Although losses often go unreported, the consequences of errors in the model can be extreme. For instance, a large Asia–Pacific bank lost \$4 billion when it applied interest-rate models that contained incorrect assumptions and data-entry errors. Risk mitigation will entail rigorous guidelines and processes for developing and validating models, as well as the constant monitoring and improvement of them.
  - **Cybersecurity risk.** Most banks have already made protection against cyberattacks a top strategic priority, but cybersecurity will only increase in importance and require ever greater resources. As banks store an increasing amount of data about their customers, the exposure to cyberattacks is likely to further grow.
  - **Contagion risk.** Banks are more vulnerable to financial contagion in a global market. Negative market developments can quickly spread to other parts of a bank, other markets, and other involved parties. Banks need to measure and track their exposure to contagion and its potential impact on performance. Measures to reduce a bank's total risk can reduce its capital requirements, as contagion risk is one of the main drivers for classification as a global systemically important bank (G-SIB).



# General view of the sector: Spain

- Types of credit institutions:
  - **Banks**
  - **Savings banks** (have almost disappeared following the 2008-2013 crisis)
    - **CECA**. Confederación Española de Cajas de Ahorro – Now Asociación Bancaria)
  - **Credit Co-operatives**. are linked either to the rural or professional environments: “Cajas Rurales”, Caja Laboral, etc.
  - **ICO**. is a Public entity whose aim is to finance selected projects and business sectors at a cost below market. ICO cannot fund itself with deposits
  - **Establecimientos Financieros de Crédito (EFC)**

Bailouts to the Spanish banking system  
(Total bailout = Eur 61.3 billion approximately)



# General view of the sector: Europe

Rank	Bank	Country	Total assets, US\$b (June 30, 2016)
1	HSBC Holdings	UK	2,608.15
2	BNP Paribas	France	2,417.00
3	Deutsche Bank	Germany	2,006.71
4	Credit Agricole Group	France	1,970.40
5	Barclays PLC	UK	1,819.61
6	Societe Generale	France	1,624.97
7	Banco Santander	Spain	1,494.39
8	Groupe BPCE	France	1,357.34
9	Royal Bank of Scotland	UK	1,214.11
10	Lloyds Banking Group	UK	1,142.22
11	UBS Group AG	Switzerland	1,010.34
12	UniCredit S.p.A.	Italy	992.040
13	ING Group	Netherlands	985.566
14	Credit Suisse Group	Switzerland	838.547
15	BBVA	Spain	830.197








Rank	Company	Country	Market cap, EUR billion
1	HSBC Holdings	UK	117.06
2	Banco Santander	Spain	63.22
3	Lloyds Banking Group	UK	62.11
4	BNP Paribas	France	58.14
5	UBS	Switzerland	56.85
6	ING Group	Netherlands	43.94
7	BBVA	Spain	41.19

# Establecimientos Financieros de Crédito

- EFCs are not allowed to collect deposits.
- **Main activities:** consumer finance, factoring, leasing, issuance of credit cards, guarantees, etc...
- Factoring is a financial transaction whereby a business sells its accounts receivable (i.e., invoices) to a third party (called a factor) at a discount. The factor provides financing to the seller of the accounts in the form of a cash "advance," with the balance of the purchase price being paid, net of the factor's discount fee (commission) and other charges, upon collection from the account client.
  - Factoring differs from a bank loan in several ways. The emphasis is on the value of the receivables, whereas a bank focuses more on the value of the borrower's total assets.
  - Non Recourse Factoring: the factor takes responsibility for collection of payments from the debtor and the risk of the debtor not paying.
  - Recourse factoring: Under recourse factoring, the client is not protected against the risk of bad debts.

# Evolution of the Spanish banking sector

Tabla 5. Ranking bancario en España en 1986

			Cuota de mercado	Núm de oficinas
1	Central		11,6	2.783
2	Vizcaya		11,2	1.718
3	Banesto		10,0	2.689
4	Hispano		10,0	1.693
5	Bilbao		9,5	1.628
6	Santander		8,4	1.477
7	Exterior		7,7	651
8	Popular		6,0	1.596
9	March		1,5	251
10	Citibank		1,3	89
11	BNP		1,1	48
12	Barclays		1,1	77
13	Zaragozano		1,0	244
14	Arabe Español		0,7	32
15	Herrero		0,7	159

Fuente: ONTIVEROS y VALERO: "El sistema financiero" (1988).

## Private Banks

Grupo Banesto (14 bancos) 	Grupo Central (8 bancos) 	Grupo Hispano (6 bancos) 	Grupo Bilbao (9 bancos) 
<ul style="list-style-type: none"> <li>• Español de Crédito</li> <li>• Madrid</li> <li>• Desarrollo Económico Español</li> <li>• Vitoria</li> <li>• Abel Matutes Torres-Blanco de Ibiza</li> <li>• General</li> <li>• Peninsular</li> <li>• Albacete</li> <li>• Alicante de Comercio</li> </ul>	<ul style="list-style-type: none"> <li>• Central</li> <li>• Fomento</li> <li>• Valencia</li> <li>• Granada</li> <li>• Internacional de Comercio</li> <li>• Crédito e Inversiones</li> <li>• Noroeste</li> <li>• Sevilla</li> </ul>	<ul style="list-style-type: none"> <li>• Hispano Americano</li> <li>• Urquijo-Unión</li> <li>• Mercantil de Tarragona</li> <li>• Hispano Industrial</li> <li>• Jerez</li> <li>• Norte</li> </ul>	<ul style="list-style-type: none"> <li>• Bilbao</li> <li>• Industrial de Bilbao</li> <li>• Más Sardá</li> <li>• Comercio</li> <li>• Promoción de Negocios</li> <li>• Huesca</li> <li>• Oeste</li> <li>• Extremadura</li> <li>• Latino</li> </ul>

Fuente: ONTIVEROS y VALERO: "El sistema financiero" (1988).

The first modern private bank in Spain was Banco de Barcelona (1844). During the 1900's Spanish private banks played a leading role in financing the development of industry. Although in the second half of the 1980s Spain had about 100 private banks--a quarter of which were industrial banks--the field had long been dominated the Big Seven, seven large commercial institutions (these banks had direct or indirect control of approximately 80 percent of the country's banking resources).

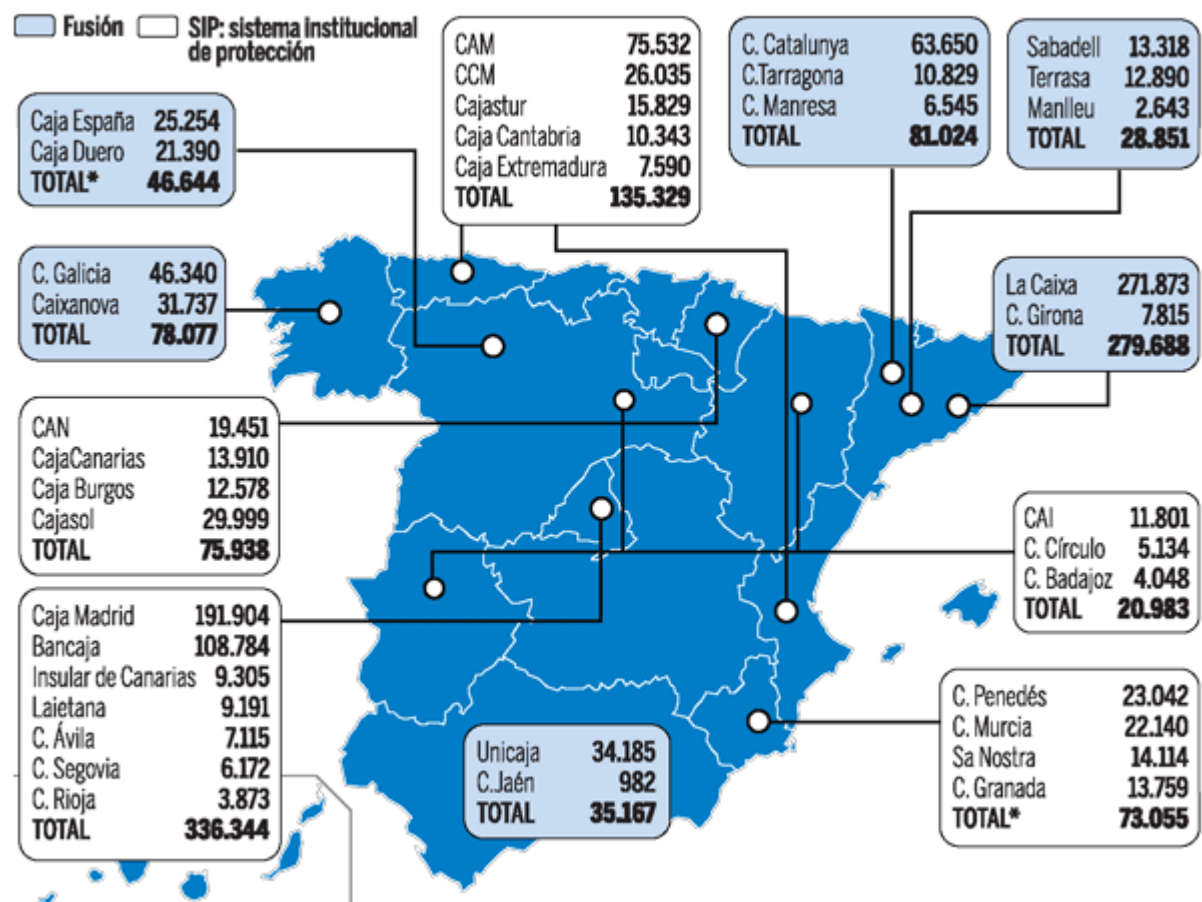
# Evolution of the Spanish banking sector

## Saving banks

- **1839-1926: The charitable phase**
- **1926-1964: The social phase**
- **1964-2009: The economic/financial phase**
- 1964 – 1976: Increasing level of state controls over the Savings Banks, relating to the establishment and expansion of branches and to how they invested their funds.
- 1977 – 1985: Harmonisation of the organisational and administrative systems of Spanish Savings Banks, and recognition of their activities on the part of the banks. In sum freedom of action in business, reduction of quotas of obligatory investments and freedom to open branches out from their origin regions.
- 1985 – 2009: Liberalisation of Savings Banks investments, transforming them into genuine universal banks, and controls over their administrative bodies, affected via the growing involvement of public institutions.
- **2010 – Now: New Regulation**

**Source:** <http://www.savings-banks.com/Who-we-are/History/Pages/Spain.aspx>

## Saving Banks (2011)



Fuente: CECA y Entidades



# Evolution of the Spanish banking sector

The restructuring of the Spanish banking sector as a result of the economic crisis

## Main Problems

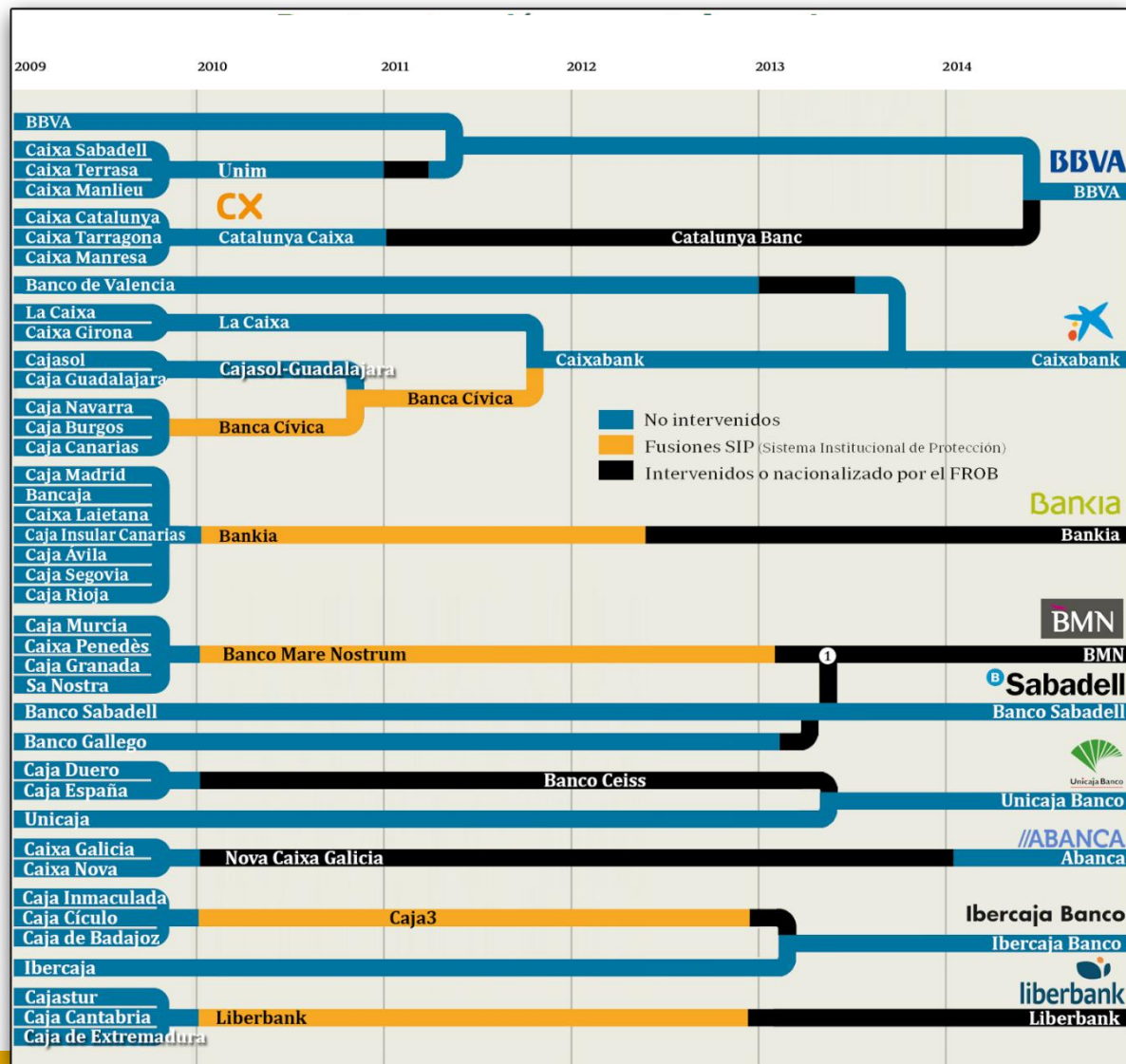
- Access to global markets deteriorated in 2007 = liquidity constraints
- Increasing level of Non Performing Loans in Spain, mainly in the Real Estate sector
- Greek sovereign debt crisis impacted the Spanish bond yields and consequently the banking sector
- The Irish and Portuguese sovereign debt crisis added more pressure

## Measures taken

- Spanish Treasury guarantees on banking debt placements
- Establishment of the FROB
- Restructuring of the savings banks sector: new regulation and mergers
- RD 2/2011 – higher capital requirements
- Significant effort in terms of additional provisioning
- Establishment of the “Bad Bank” known as SAREB and transfer of the impaired assets
- Banking Union project at the EU (please refer to Chapter 2)



# Evolution of the Spanish banking sector

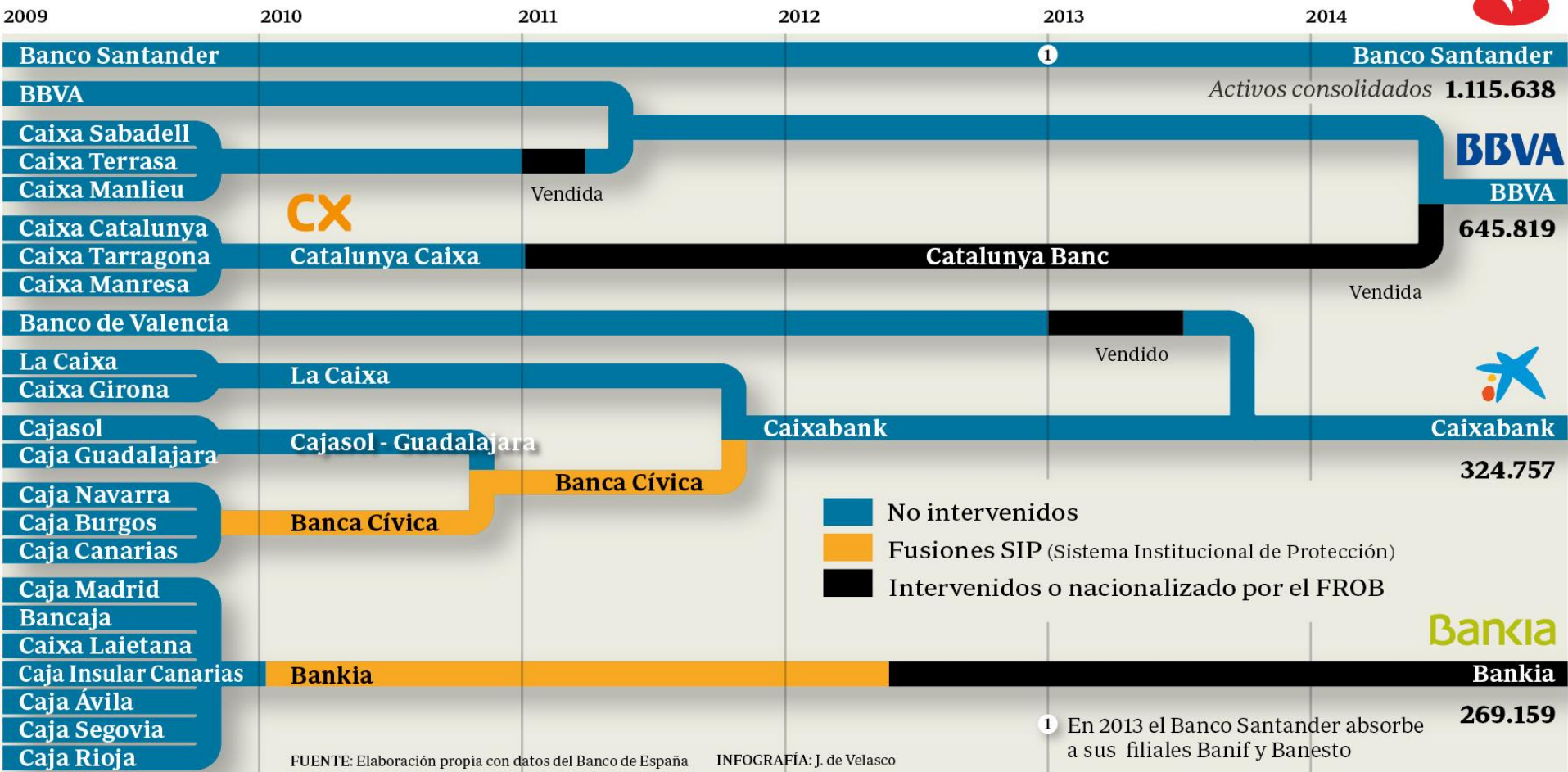


Banco Santander (0049)  
 Banco Bilbao Vizcaya Argentaria (0182)  
 Banco Sabadell (0081)  
 Banco Popular (0075)  
 Bankinter (0128)  
 Banca March (0061)  
 Deutsche Bank, SAE (0019)  
 Banco Cooperativo Español (0198)  
 Evo Banco (0239)  
 Banco Caixa Geral (0130)  
 Banco Caminos (0234)  
 Banco Mediolanum (0186)  
 Bankoia (0138)  
 Banca Pueyo (0078)  
 UBS Bank (0226)  
 Renta 4 Banco (0083)  
 Andbank España (1544)  
 RBC Investor Services España (0094)  
 Banco Pichincha (0235)  
 Banco Cetelem (0225)  
 EBN Banco de Negocios (0211)  
 Allfunds Bank (0011)  
 Citibank España (0122)  
 BNP Paribas España (0058)  
 Banco Alcalá (0188)  
 A&G Banca Privada (0241)  
 Privat Bank Degroof (0200)



# Evolution of the Spanish banking sector

Millions of euros



Consolidation process of principal Spanish financial institutions (from ABC)

# GRACIAS

