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Global Financial Crisis

Madrid
April 3, 2009

The perfect storm

- Number one: its probability is low based on past knowledge
- Number two: although its probability is low, when it happens it has a massive impact
- Number three: people don’t see it coming before the fact, but after the fact, everybody saw it coming

So it’s prospectively unpredictable but retrospectively predictable

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Agenda

- **Remember how the crisis started**
- Subprime mortgage status
- Needed fixes
- Impact of the financial crisis
- What's next?

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How it All Started (1 of 3)

- Economic environment since 2000
- Huge growth of the securitization business
- Unprecedented massive amount of senior tranches of subprime CDOs were downgraded from triple-A to junk within a short period of time

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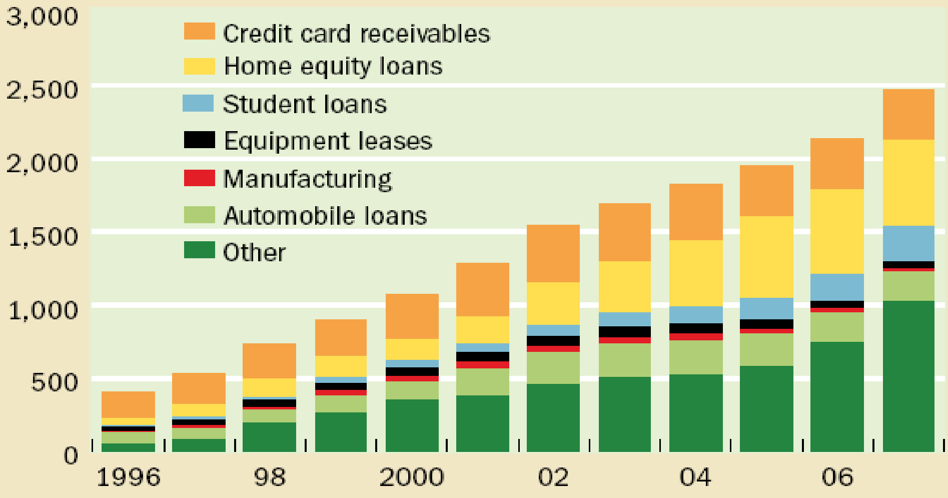
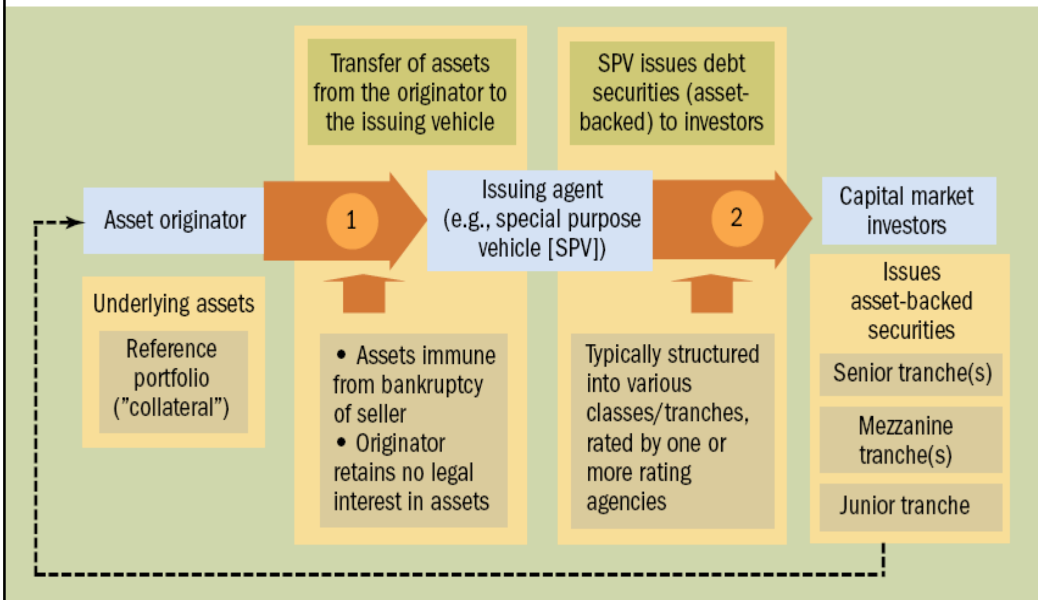
Banks' securitization exposures have soared and dramatically changed the banks' risk profiles over the past decade.

(global asset-backed securities outstanding, billion dollars)



Source: Securities Industry and Financial Markets Association.

Credit Securitization and Risk



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How it All Started (2 of 3)

- Reasons why delinquencies on subprime loans started to skyrocket after mid-2005:
  - Subprime borrowers were not very creditworthy, highly levered with high debt-to-income ratios, large loan-to-value ratios, no down payment (second mortgage: "piggyback loan")
  - In a market where housing prices kept rising, borrowers expected to refinance before the reset and build some equity cushion
  - Huge demand from investors for higher yielding assets, such as super senior tranches of subprime CDOs, lead to lowering of lending standards: low documentation or no-documentation loans, "liar loans"

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How it All Started (3 of 3)

- The current crisis was thus an accident waiting to happen. The trigger was a series of events.
  - Bear Stearns
  - IKB
  - BNP Paribas

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The perfect storm

- Housing boom
- Demand for high yield assets
- Lots of money looking for investments
- Incentive systems
- Lack of controls
- ….

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Nature of the Subprime Crisis

- It is fair to say that the full extent of the subprime crisis, is not yet known.
- It is commonly accepted that the subprime crisis has become a crisis of confidence in the financial system.
- The start of the crisis can be attributed basically to the securitization of subprime mortgages.
- Given the differences in asset valuation calculations and the lack of standardized accounting, the banks do not have a clear idea of each other's exposure.

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Nature of the Subprime Crisis

- Moreover, assets covered by "debt repayment insurance" from insurance companies affected by the crisis are shown as "risk-free assets" on banks' balance sheets
- Should banks reclassify these assets as "risky" and record the appropriate provisions?
- The subprime crisis contributes to a general economic crisis via a restriction of the supply of credit and a tightening of credit terms

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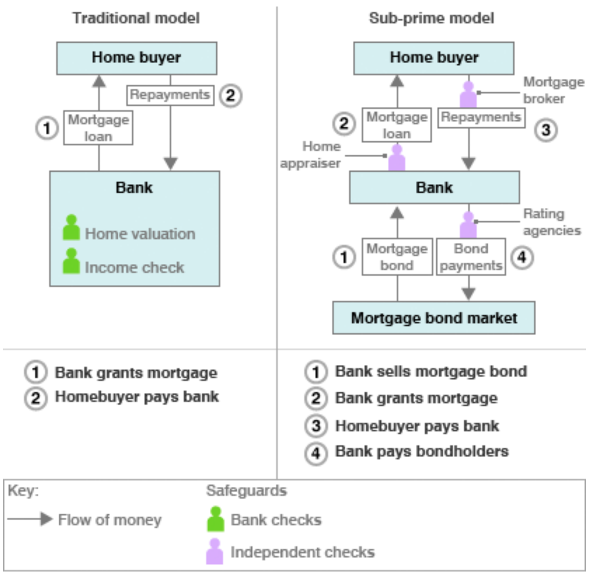
Subprime Crisis

The subprime mortgage crisis generated in the US has originated a drastic fall of the property prices, a ralentization of the economy, and billions of $ of losses to the global financial institutions. It has its origin in the fundamental change of the model used to generate mortgage loans

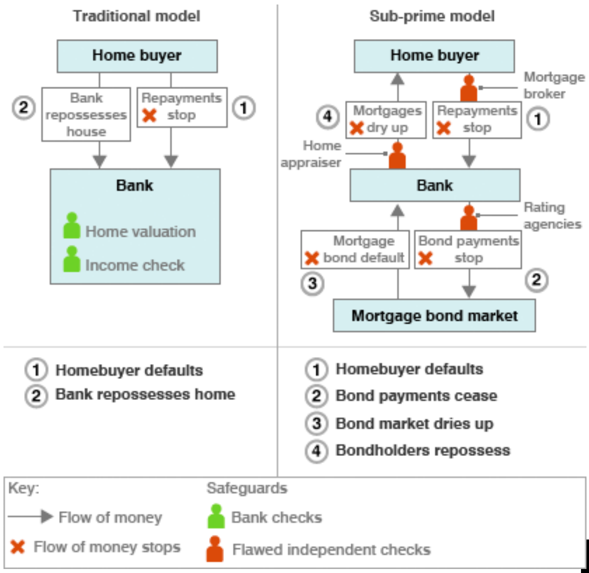
Subprime Crisis

The new model of mortgage lending



Subprime Crisis

The new model of mortgage lending: How it went wrong?



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Why did not the sophisticated, computerized pricing models that Wall Street firms use to predict returns and risk for complex derivatives save them from the subprime mortgage mess?

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CDOs are Over The Counter (OTC) traded derivative instruments. How did the accounting procedure used to settle these instruments facilitated the subprime crisis?

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Is there a relationship between rating agencies and the subprime crisis?

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What is market liquidity? How the current subprime mortgage crisis has snowballed into severe credit crunch?

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Needed fixes

Excess “Leverage” and synthetic liquidity

Increase of the disintermediation process, with growing number of participants:

- Financial intermediates
- Investment funds
- Hedge funds
- Banks
- Institutional investors
- Retail customers

which participating very actively in the financial markets develop a huge derivative market with very high synthetic liquidity

As a result, we lost the markets dimension

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Needed fixes

Excess “Leverage” and synthetic liquidity (2)

As a consequence, the focus of the crisis was changing:

Price

Liquidity

Capital

And finally, the real economy was heavily impacted

Global Recession

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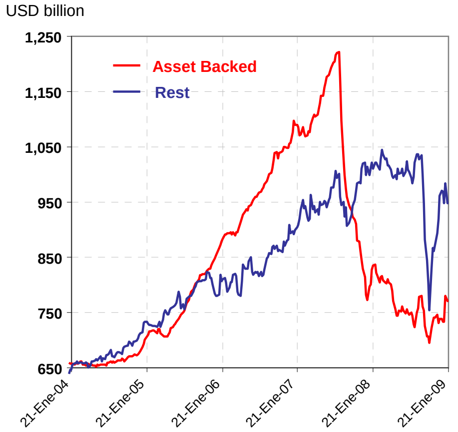
Needed fixes

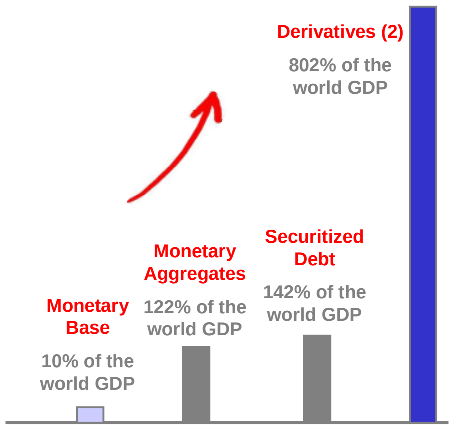
Excess “Leverage” and synthetic liquidity

The “heart” of the system were the “conduits” and its financing in the commercial paper market

US Commercial Paper: Nominal Value (1)



Global Liquidity



(1) Source: Federal Reserve.

(2) Derivatives in an ample sense, including securitization, credit derivatives, etc. Source: BIS (2007)

Needed fixes

Financial structures…

Credit Risk Transfer Instruments (CRT)

Credit Derivatives

ABS: Asset Backed Securities

MBS: Mortgage Backed Securities

CMO: Collateralized Mortgage Obligations

CDO: Collateralized Debt Obligations

CBO: Collateralized Bond Obligations

CLO: Collateralized Loan Obligations

Securitizations

of several asset types: mortgages, other credit products, bonds, etc.

Debt Repayment Insurance

CDS: Credit Default Swaps

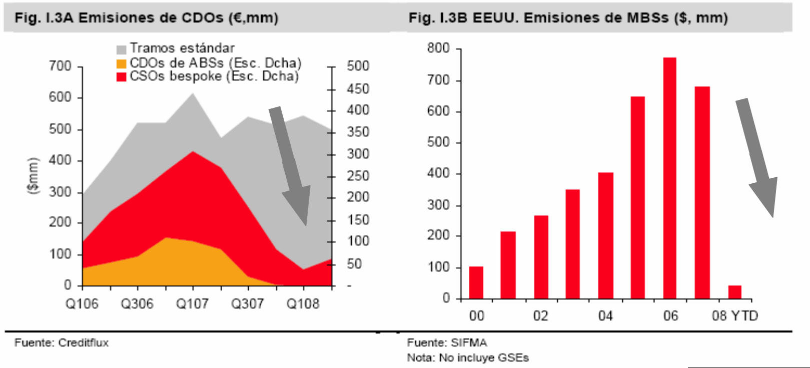
Insuring credit risk

Needed fixes

…that changed the financial system, due to the dissemination and quick sale to the market of the different risk components and factors

Traditional banking model (originate to maintain) → **Model "originate to distribute"** → **Abrupt rupture of the primary credit markets** → **The question is: What's next?**

August 2007



Agenda

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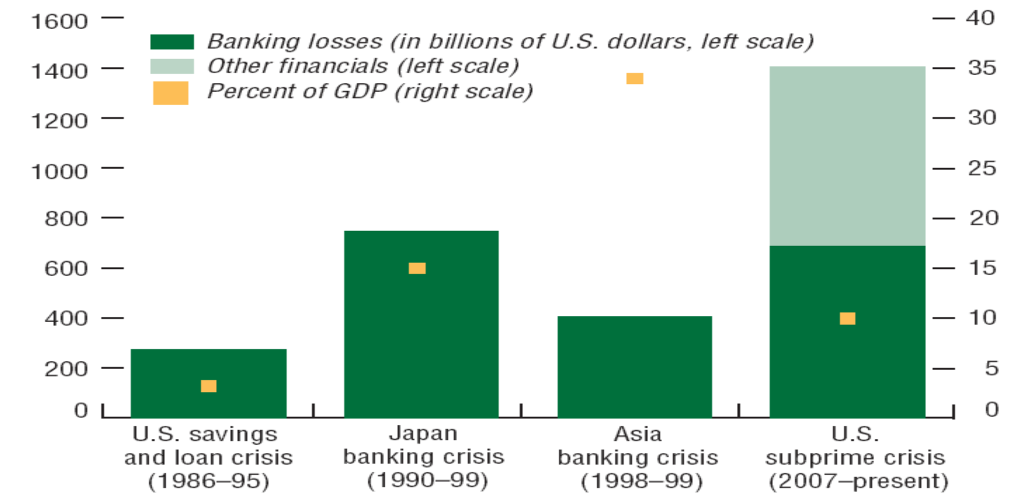
- **Impact of the financial crisis**
- What's next?

FINANCIAL CRISIS: COMPARISON

Billions of US$



Sources: World Bank; and IMF staff estimates.

Note: U.S. subprime costs represent staff estimates of losses on banks and other financial institutions from Table 1.2. All costs are in real 2007 dollars. Asia includes Indonesia, Malaysia, Korea, the Philippines, and Thailand.

Bank Writedowns and Capital Raised since January 2007 – Millions of US$

	Subprime Losses	Capital Raised
Wachovia	**96,500**	11,000
Citigroup	**85,100**	113,800
Merrill Lynch	**55,900**	*29,900*
UBS	**48,600**	33,000
Washington Mutual	**45,600**	12,100
HSBC*	**33,100**	4,900
BoA	**40,200**	58,500
JP Morgan	**29,500**	44,700
Morgan Stanley	**21,500**	*24,600*
RBOS*	**14,900**	49,300
Wells Fargo	**14,600**	41,800

	Subprime Losses	Capital Raised
Lehman Brothers	**16,200**	*13,900*
Credit Suisse	**14,100**	11,900
Deutsche Bank	**12,200**	5,900
HBOS*	**9,100**	22,800
Société Generale	**7,900**	10,900
Barclays*	**6,400**	27,200
BNP Paribas	**5,600**	3,400
Goldman Sachs	**7,100**	*20,500*
Unicredit	**4,100**	9,900
Others	**204,200**	249,000
Total	**772,400**	**799,000**

Of this total, approximately US$ 360,000 millions came from different Governments.

Indirect helps are not included (i.e. US Treasury Guarantees to Citigroup in the order of US$ 305,000 millions and to Bank of America in the order of US$ 118,000 millions)

IMF Predicts a Global Economic Recession

- Global economic activity is falling, with advanced economies registering their sharpest declines in the post-war era

Hard times

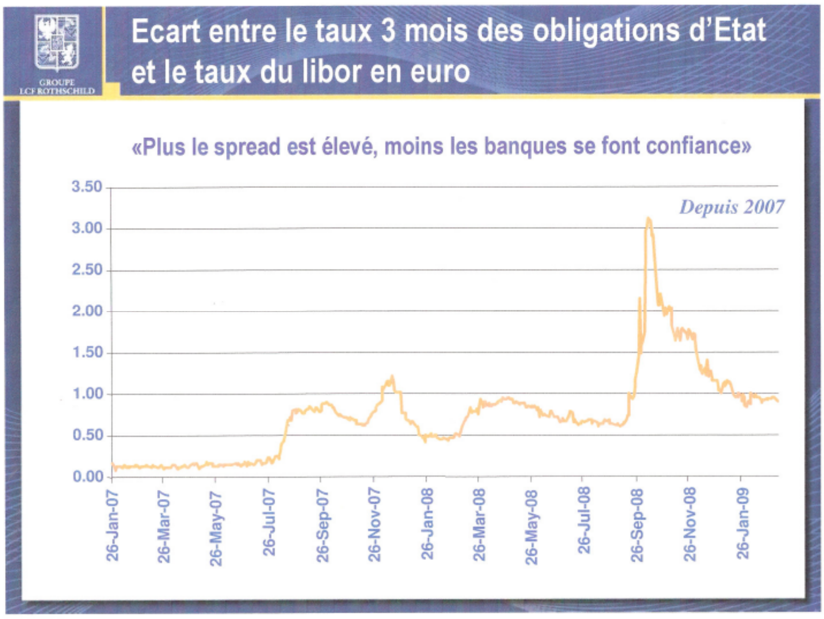
The IMF's March 2009 projections show a contraction in world growth this year, followed by a small recovery.
(percent change, unless otherwise noted)

		Proj.	
	2008	**2009**	**2010**
World output	3.2	**–1.0 to –0.5**	**1.5 to 2.5**
Advanced economies	0.8	–3.5 to –3.0	0.0 to 0.5
United States	1.1	–2.6	0.2
Euro area	0.9	–3.2	0.1
Japan	–0.7	–5.8	–0.2
Emerging and developing economies	6.1	**1.5 to 2.5**	**3.5 to 4.5**

Source: IMF.

- Central and Eastern Europe and the Commonwealth of Independent States are the most adversely affected

Source: IMF – Global Economic Policies and Prospects, March 19-2009



1929 – 2009
des différences majeures

1929	2009
Le protectionnisme est aux origines de la crise	Le protectionnisme est l'une des conséquences possibles de la crise : à éviter à tout prix
Rigidité d'un système de taux de change fixes	Flexibilité des taux de change flottants
Laissez faire total des autorités, absence de protection sociale et politique monétaire restrictive des Banques centrales	Réponses précoces, massives et coordonnées des gouvernements et des Banques Centrales

BANQUE PRIVÉE EDMOND DE ROTHSCHILD EUROPE

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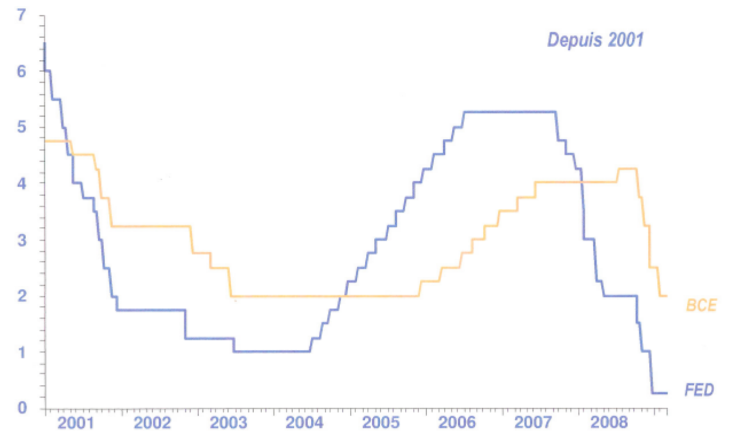
Taux directeurs de la Réserve Fédérale (FED) et de la Banque Centrale Européenne (BCE)



Source: DATASTREAM

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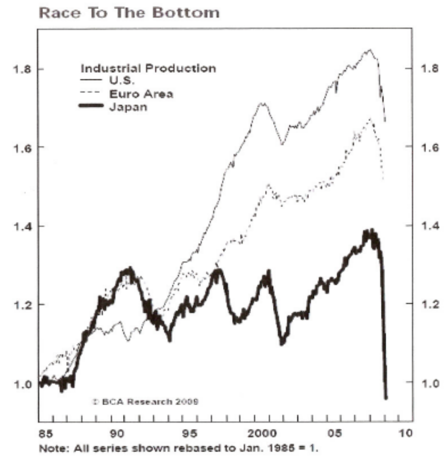
Effondrement de la production industrielle



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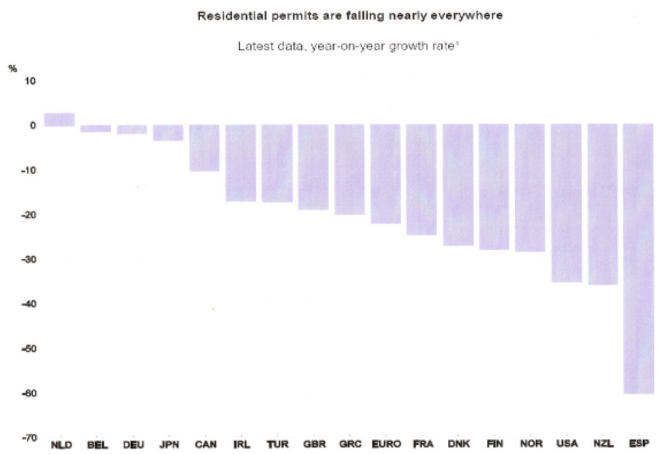
Crise immobilière



BANQUE PRIVÉE EDMOND DE ROTHSCHILD EUROPE

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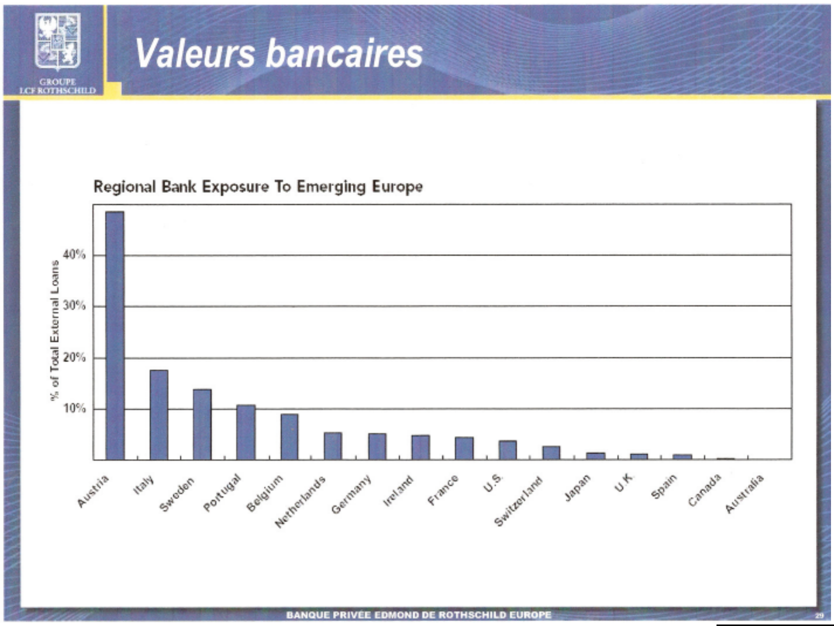
Programmes de relance économique annoncés

- USA : 6% - 7% du PIB
- UE : 3,5% - 4,0% du PIB
- Japon : 2% du PIB
- Chine : 20% du PIB
- Total monde : 4% du PIB

Marchés boursiers



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Obama's rescue plan (1 of 2)

1 Capital Injections
Projected cost: not available
Details:
- Capital injections to needy financial institutions based on review
- Bank regulators to institute uniform standards to strengthen banks
- "Stress tests" to ensure largest banks can withstand worsening economy

2 Unfreezing credit markets
Projected cost: $200-$1,000bn
Coming from Fed loans backed by Treasury equity
Details:
- Expansion of existing $200bn Fed program (Talf) to unfreeze asset-backed markets
- New lending initiative to kick-start the financing of student, auto, and credit card loans, commercial mortgages and some residential mortgages

Source: Financial Times

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Obama's rescue plan (2 of 2)

3 Toxic assets
Projected cost: Up to $1,000bn
Coming from Fed balance sheet, Treasury, FDIC, private investors
Details:
- Public-private investment fund will provide government financing to leverage private capital to purchase toxic assets from banks
- Private sector buyers to determine price for previously illiquid assets, valuation details not yet worked out
- Possible guarantees from FDIC to limit losses for investors who purchase toxic assets

4 Foreclosure relief
Projected cost: $50bn
Coming from Treasury and Fed
Details:
- Investment to keep people in homes and curb housing crisis
- Program to reduce monthly mortgage payments and establish loan modification guidelines

Source: Financial Times

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Open issues

- Financial system broken
- Size of the problem is much bigger than we thought initially
- There was an abuse of the perfect markets hypothesis
- Liquidity and depth of the financial markets
- Today it is impossible to know the global risk map

Is it necessary a deep transformation of the banking institutions?

What are the main implications for the regulatory framework?

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Financial regulation

- More regulation is not needed. Basel II is sufficient, but it is required a greater global coordination, greater emphasis in liquidity, and a more consolidated vision
- Greater focus on an integrated and unified treatment of all the risk typologies. Greater importance of the Global Risk Manager role in its contact with the regulator
- There is risk of over-regulation
- All financial crisis are different. An over-reaction will not avoid a next one

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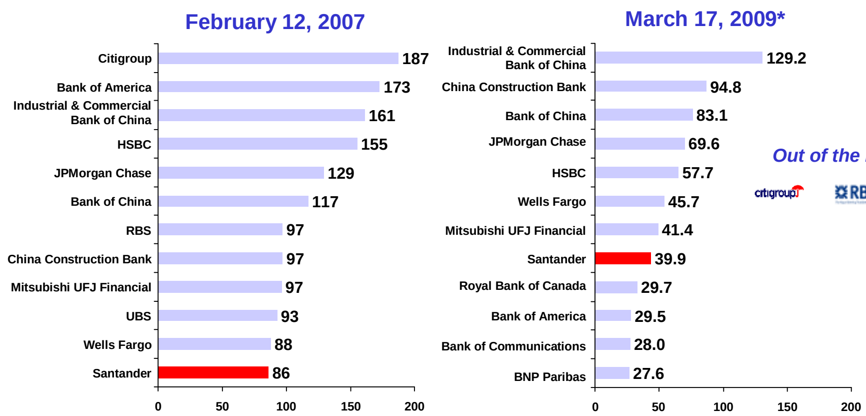
Final thoughts

The transformation of the banking system provides some ideas …

Banks: TOP 12 in Market Capitalization

EUR Thousand of millions



Out of the list

citigroup RBS UBS

… The excesses need to be paid back .

* Source: Financial Times

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Back to growth

	US	EC
Stock Markets	2009	2010
Housing & Consumption	2010	2011

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