Financial Statement Analysis

Introduction

Students version

Fahmi Ben Abdelkader ©

Chapter Outline

Useful Information and Class rules	Assessment Class Rules Contact & Communication Material & book reference
Learning Objectives and Course Content	Learning Objectives Financial Analysis: Tentative Definition How to conduct a financial analysis? Indicative Outline
Introduction: fundamental concepts	The 2007–2008 crisis, or rediscovering financial risk Firms' Disclosure of Financial Information Who are Financial Analysts? Financial Analysis Versus Accounting

Assessment

		% of total grade
Individual assessment	Quiz In class At the beginning of session 6 30 minutes Closed book	50%
Collective homework assessment	Financial Analysis Report Homework - groups of 3 max	50%

Required readings: # APPENDIX 2 Writing A Financial report Guidelines

Evaluation will be based on (i) the calculation of financial ratios and (ii) the analysis of these ratios

Required documents:

•**An excel file** with financial statement data and financial ratios (see the example of Lufthansa)

•A **power-point document** including your presentation

Three Golden Rules

BE ON TIME : Arriving late three times counts as an unexcused absence

➧ **3 Delays (D) = 1 Absence (A)**

LEAVE YOUR GUNS AT THE DOOR: WHY SMARTPHONES SHOULD NEVER PARTICIPATE IN MEETINGS

The researchers conducted a nationwide survey of 554 full-time working professionals earning above $60K and working in companies with at least 50 employees. They asked a variety of questions about smartphone use during meetings and found:

86% think it's inappropriate to answer phone calls during meetings

84% think it's inappropriate to write texts or emails during meetings

66% think it's inappropriate to write texts or emails even during lunches offsite

The more money people make the less they approve smartphone use.

LEAVE YOUR GUNS AT THE DOOR: WHY SMARTPHONES SHOULD NEVER PARTICIPATE IN MEETINGS

Why do so many people—especially successful people—find smartphone use in meetings to be inappropriate? When you take out your phone it shows a:

Lack of respect. You consider the information on your phone to be more important than the conversation at hand, and you view people outside of the meeting to be more important than those sitting right in front of you.

Lack of attention. You are unable to stay focused on one thing at a time.

Lack of listening. You aren't practicing active listening, so no one around you feels heard.

Lack of power. You are like a modern-day Pavlovian dog who responds to the whims of others through the buzz of your phone.

Lack of self-awareness: You don't understand how ridiculous your behavior looks to other people.

Lack of social awareness: You don't understand how your behavior affects those around you.

Contact

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Subject: **[**your program**, FSA/** your name**]**

fbenabdelkader@escpeurope.eu (Only in urgent cases)

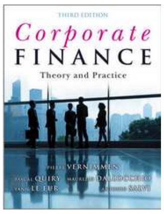
Material

Available on my webpage: www.fbenabdelkader.com

Students will be provided with:

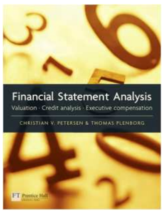
- Lecture notes
- Complementary material with examples of financial statements
- (by email) Excel files with financial statements to compute financial ratios

Reference Books



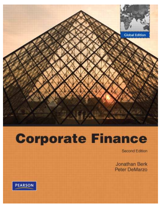
Pierre Vernimmen (2013), Corporate Finance: Theory and Practice, 3rd Edition
With Pascal Quiry, Yann Le Fur, Antonio Salvi, Maurizio Dallochio. John Wiley & Sons Ltd.

Section I
FINANCIAL ANALYSIS



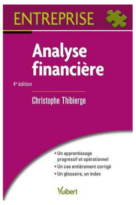
Thomas Plenborg and Christian Petersen (2012), Financial Statement Analysis: Valuation - Credit Analysis - Executive Compensation. Financial Times Press.

Part I: accounting data
Part II: Financial Analysis



Berk Jonathan and DeMarzo Peter (2011), Corporate Finance, Pearson Education, 2nd Edition.

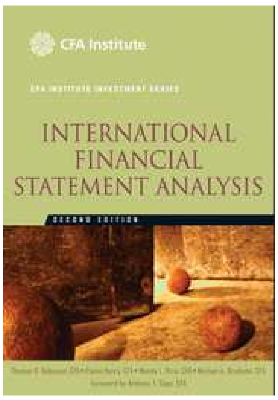
Chapters 1, 2 and 26



Christophe Thibièrge (2011), Analyse financière, 4ème édition, Vuibert.

https://intranet.escpeurope.eu/~bmt/thib/Anafi/index.html

Reference Books



International Financial Statement Analysis (CFA Institute Investment Series), 2nd Edition

Thomas R. Robinson, CFA, Elaine Henry, CFA, Wendy L. Pirie, CFA, Michael A. Broihahn, CFA, Anthony T. Cope,

Tools to build financial models and presentations

Microsoft Excel and Power point

http://macabacus.com/

My Teaching Philosophy (1/2)

The world does not care what you know; it only cares, and will only pay for, what you can do with what you know.

"Education is not the learning of facts but training the mind to think"
Albert Einstein

Finance will never be an exact science; it deals with <u>human behavior</u> (financial decisions) and <u>future</u> (the expected return).

"Two factors move the market: fear and greed".
An old Wall Street adage

"Finance is the trade of promises".
French Book « Le Commerce des promesses »
by Pierre-Noël Giraud

My Teaching Philosophy (2/2)

Students learn best when they construct their own knowledge through exploration and discussion.

"There are no stupid questions, only stupid answers"

"Teachers open the door, but you must enter by yourself"
A Chinese proverb

Engaging students in the learning process is the first step in effectively managing a classroom

"Tell me and I forget. Teach me and I remember. Involve me and I learn"
Benjamin Franklin

Bridging theory and practice

"To teach something to people, it is necessary to mix what they know with what they ignore. »

Pablo Picasso

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Preamble: a little story

Source: French Book « Le Commerce des promesses », by Pierre-Noël Giraud

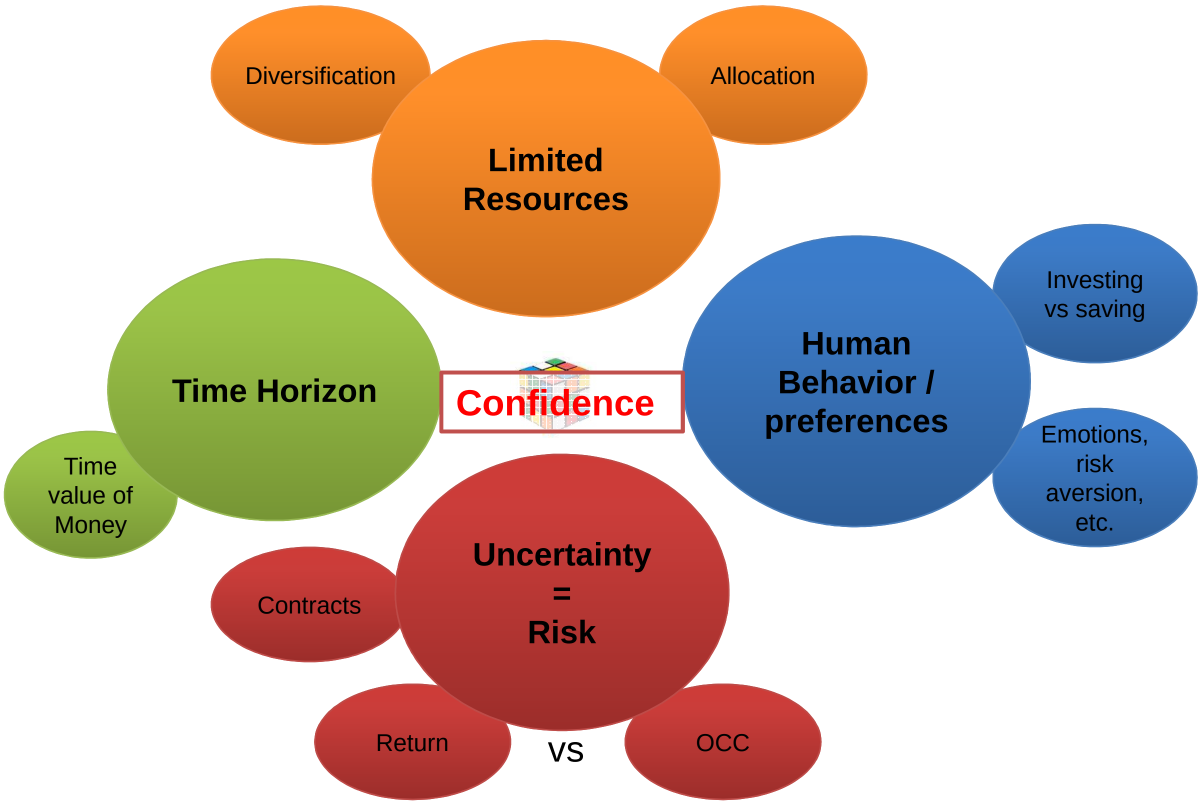
"You can go to sleep now.

He's the one who can't sleep anymore"

Preamble: Financial decision making: some key elements

If I ask you to lend me money, what do you say?

Preamble: Financial decision making: some key elements



Preamble: To choose is to forgo

If an investor faced many investment choices, the opportunity cost of a given choice would be estimated by the **best available expected return offered in the market** on an investment of comparable risk and term

- The Opportunity Cost of Capital can be interpreted as the **return the investor forgoes** on an alternative investment of equivalent risk and term when he takes on a new investment

- The Opportunity Cost of Capital = **Required Return**

Learning Objectives

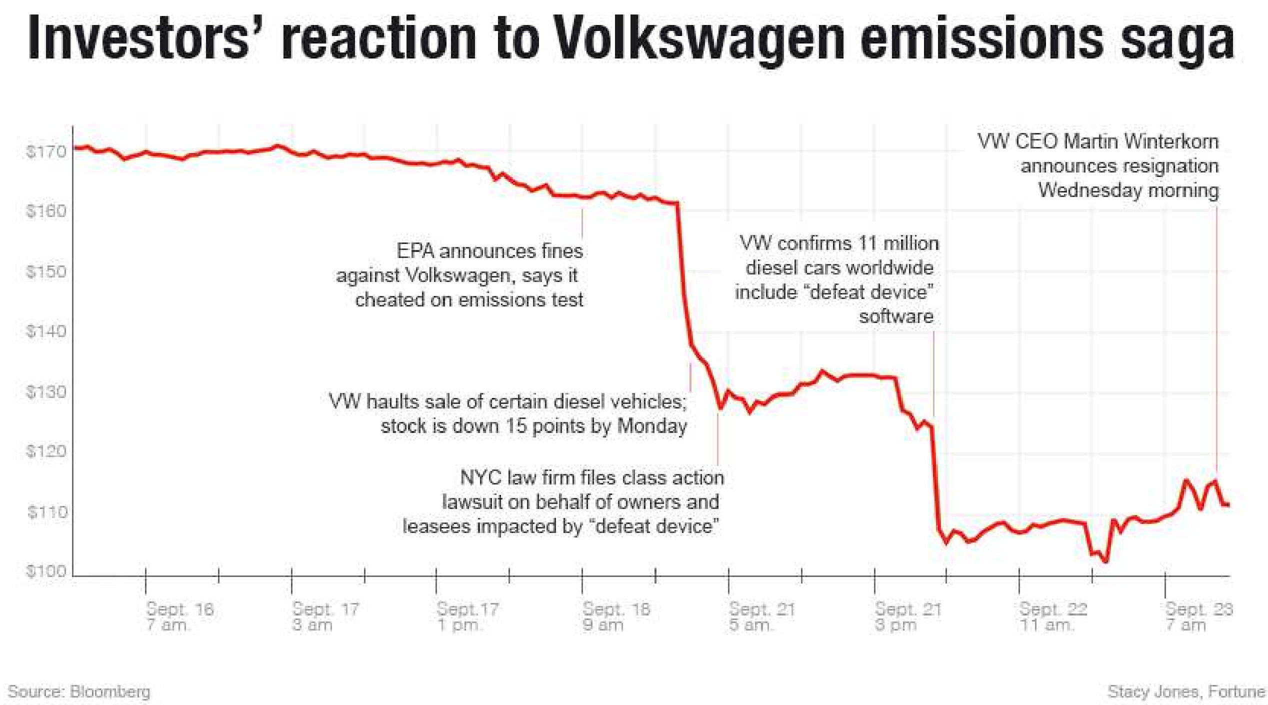
After this course you should be able to:

- Know why the disclosure of financial information through financial statements is critical to investors
- Understand the construction of the main financial statements and discuss their limitations
- Use accounting information to construct financial ratios
- Distinguish between accounting analysis (accrual-based measures, book value) and financial analysis (Cash-based measures, market value) of the firm
- Evaluate the sustainability of growth (in EVA) and the quality of earnings: assess the process of value creation
- Understand the relationship between operating profitability (ROCE) and owner's profitability (ROE), as well as the impact of financial leverage on profitability.
- Assess illiquidity and insolvency risk.
- Write a Financial Analysis Report

One central question

Is your company in a strong enough <u>financial health</u> to continue to be <u>trusted by stakeholders</u> and to <u>attract investors</u>?

Attracting investors is vital



Attracting investors is vital

The Financial Manager and the Goal of the Firm: A reminder

The mission of the financial manager within the firm

<u>In Theory</u>, the primary goal of financial management is to **maximize the wealth of the shareholders**

➡ The financial manager is a caretaker of the shareholders' money

Shareholder Value Versus **Stakeholder Value**

To maximize shareholder value, the financial manager must consider the impact of her decision on all stakeholders of the firm

➡ The ultimate mission of the financial manager is **to maximize the firm value …**

while preserving confidence between the firm and all its stakeholders

DIG DEEPER

End the folly of maximizing shareholder value

By Martin Wolf | Financial Times | August 26, 2014

The Financial Manager and the Goal of the Firm: A reminder

**It is not the employer who pays the wages.
It is the customer who pays the wages.**

Henry Ford

The Financial Manager and the Goal of the Firm: A reminder

To buy is to trust

Good health = no disease

Neymar
Football player hired by PSG (nearly €230 million)

There is no single indicator of good health

➡ A rigorous medical check-up (Financial Analysis) requires a combination and a cross-analysis of different indicators covering several aspects to good (financial) health

There is no single indicator of good health

Twitter, Inc. (TWTR) - NYSE ★ Watchlist

30.32 ↑0.49(1.64%) 4:00PM EDT

After Hours : **30.33** ↑0.01 (0.03%) 6:19PM EDT - Nasdaq Real Time Price

Income Statement Get Income Statement for: GO

View: **Annual Data** | Quarterly Data All numbers in thousands

Period Ending	Dec 31, 2014	Dec 31, 2013	Dec 31, 2012
Total Revenue	**1,403,002**	**664,890**	**316,933**
Cost of Revenue	446,309	266,718	128,768
Gross Profit	**956,693**	**398,172**	**188,165**
Operating Expenses			
Research Development	691,543	593,992	119,004
Selling General and Administrative	804,016	440,011	146,244
Non Recurring	-	-	-
Others	-	-	-
Total Operating Expenses	-	-	-
Operating Income or Loss	**(538,866)**	**(635,831)**	**(77,083)**
Income from Continuing Operations			
Total Other Income/Expenses Net	(5,500)	(4,455)	399
Earnings Before Interest And Taxes	(578,351)	(647,146)	(79,170)
Interest Expense	-	-	-
Income Before Tax	(578,351)	(647,146)	(79,170)
Income Tax Expense	(531)	(1,823)	229
Minority Interest	-	-	-
Net Income From Continuing Ops	(577,820)	(645,323)	(79,399)
Non-recurring Events			
Discontinued Operations	-	-	-
Extraordinary Items	-	-	-
Effect Of Accounting Changes	-	-	-
Other Items	-	-	-
Net Income	**(577,820)**	**(645,323)**	**(79,399)**

How to conduct a financial analysis?

A guiding principle

In the long run, a company can survive only if it **creates value** for its shareholders and meets its commitments towards all its **stakeholders**

To do so, it must:

Financial Analysis

- Generate wealth
- Invest
- Finance its investments

Growth Analysis

- Generate a sufficient return

Profitability Analysis

- Anticipate and manage illiquidity risk

Risk Analysis

How to conduct a financial analysis?

The toolkit of the financial analyst

Preliminary analysis	(1) Strategic and Economic Assessment	**1.1** Understand the characteristics of the sector in which the company operates… **1.2** … analyse the auditors' report and accounting policies **1.3** What do we expect to see ?	
Financial Analysis	(2) Growth Analysis	2.1 Growth measurement	Sales, Net Income, EBITDA, Total Assets
		2.2 How the firm uses its money?	Fixed Assets, WC, Capital Employed, Cash flow from investment activities
		2.3 Where does the money come from?	Leverage, Equity, Net Debt, Capital Invested, Short-term debt, etc.
		2.4 Analysis of the Cash Cycle	WC in days' worth of sales; Cash flow from operating, FCF
	(3) Profitability Analysis	3.1 Margin analysis	Profitability ratios, Cost structure
		3.2 Return on Invested Capital (ROIC)	ROIC = NOPAT/ Capital Employed ROIC = Oper. Margin * Asset turnover Economic Value Added = ROIC - WACC
		3.3 Return on Equity (ROE)	ROE = Net Income/ Equity ROE = ROIC + Leverage effect Residual Income= ROE - r_e
	(4) Risk Analysis	4.1 Short-term liquidity risk	Current ratio Quick ratio
		4.2 Solvency risk	Interest coverage ratio, leverage, etc.
Summary note	(5) Recommendations	5. Develop and communicate conclusions / recommendations	

Indicative Outline

1. Introduction: fundamental concepts
2. Classifying Company Cash Flows: the Operating Cycle is of critical importance
3. The analytical Balance sheet: the Financial View
4. The analytical Income Statement: Assessing Earnings Quality
5. Accrual-based Versus Cash-Flow-based performance measures
6. Profitability and illiquidity Risk Analysis
7. Writing a Financial Analysis Report: Carlsberg Case Study

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The 2007–2008 crisis, or rediscovering financial risk

The financial crisis was not an accident, but it was caused by an out of control industry:

Cheap money

- ➡ Disconnection between asset prices (houses, securitized products, etc.) and fundamentals (economic reality) : speculative bubbles

Insufficient prudential rules

- ➡ Excessive risk, high leverage, moral hazard (Ex. Too Big To Fail companies), etc.

Massive under-estimation of mortgage risks by financial actors (traders, bankers, hedge funds managers, rating agencies, etc.)

- ➡ Academics and professional analysts ignored elements such as : Investor emotions, psychological biases, Market sentiment, mimetic behaviour, « la sagesse des foules », etc.

« Il vaut mieux se tromper avec tout le monde que d'avoir raison tout seul »

- ➡ **HUMAN BEHAVIOUR COMPLEXITY**

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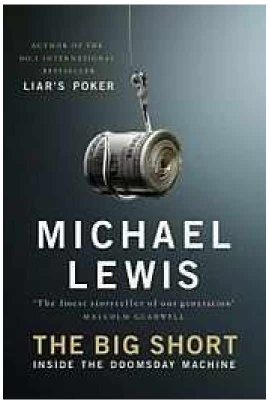
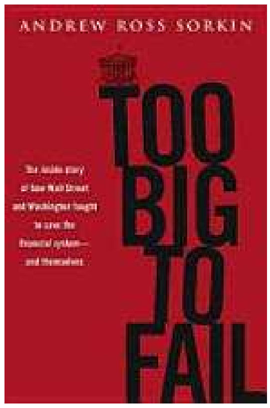
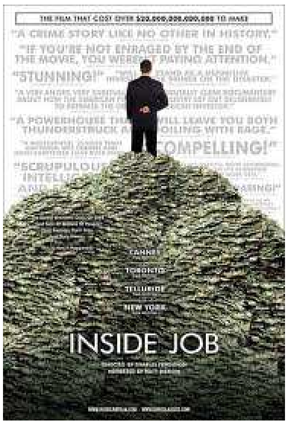
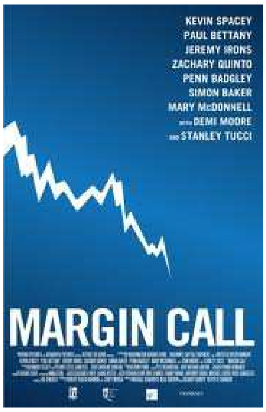
About the Financial Crisis

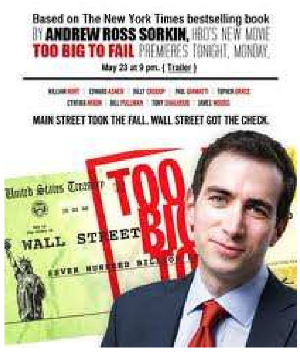




Some films







The 2007–2008 crisis, or rediscovering financial risk

➡ **A rigorous approach of financial analysis is of crucial importance for decision makers…**

… It is the duty of all investors to analyze the products they are investing in

Firms' Disclosure of Financial Information

Financial Statements required by relevant authorities

Financial statements are accounting reports issued periodically to present past performance and a snapshot of the firm's assets and the financing of those assets

- Balance Sheet or Statement of Financial Position
- Income Statement (or statement of earnings, or profit and loss account)
- Statement of Cash Flows
- Statement of Changes in Shareholders' Equity

Who decides what is allowed?

Private Standard Setting Bodies

US Financial Accounting Standards Board – FASB,

International Accounting Standards Board – IASB

Government Regulators

US: Securities and Exchange Commission – SEC

Europe: European Securities Committee + national regulators

Major financial reporting standards

- Generally Accepted Accounting Principles (GAAP)
- International Financial Reporting Standards (IFRS)
- **+ Auditor**: Neutral third party that checks a firm's financial statements (**compliance and reliability**)

Is it sufficient to set up standards?

Even with safeguards, reporting abuses still happen:

Enron

WorldCom

Parmalat

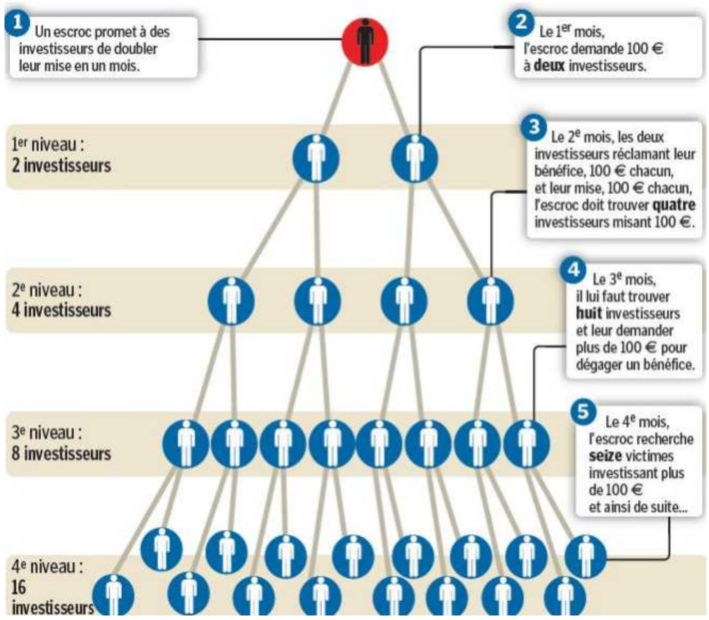
Bernard Madoff's Ponzi Scheme

Reliability of the auditors is also crucial …

Bernard Madoff's Ponzi Scheme

$65 billion fund, 17 years of annual returns between 10 and 15%

The Ponzi Scheme: he used the capital contributed by new investors to pay off old investors



Reliability of the auditors is also crucial …

Bernard Madoff's Ponzi Scheme

$65 billion fund, 17 years of annual returns between 10 and 15%

The Ponzi Scheme: he used the capital contributed by new investors to pay off old investors

What caused the collapse of the scheme?

- ➡ The financial crisis spurred many investors to withdraw funds from their Madoff accounts
- ➡ The financial crisis = few new investors
- ➡ Madoff did not have enough new capital to pay off the investors

How was Madoff able to hide the largest fraud of all time for so long?

- ➡ Madoff was one of the largest and most successful hedge fund managers … he inspired confidence
- ➡ Manipulation of accounting statements with the assistance of a virtually unknown accounting firm
- ➡ Madoff's firm was not subject to the strict regulatory requirements for public companies

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Why Do People Commit Financial Statement Fraud?

Among other motivations:

- To meet or exceed the earnings or revenue growth expectations of stock market analysts
- To comply with loan covenants
- To increase the amount of financing available from asset-based loans
- To meet corporate performance criteria set by the parent company
- To meet personal performance criteria
- To trigger performance-related compensation or earn-out payments
- To support the stock price in anticipation of a merger, acquisition, or sale of personal stockholding
- To show a pattern of growth to support a planned securities offering or sale of the business

➡ Typically: agency problems

Consequences of Fraud and Unethical Behavior

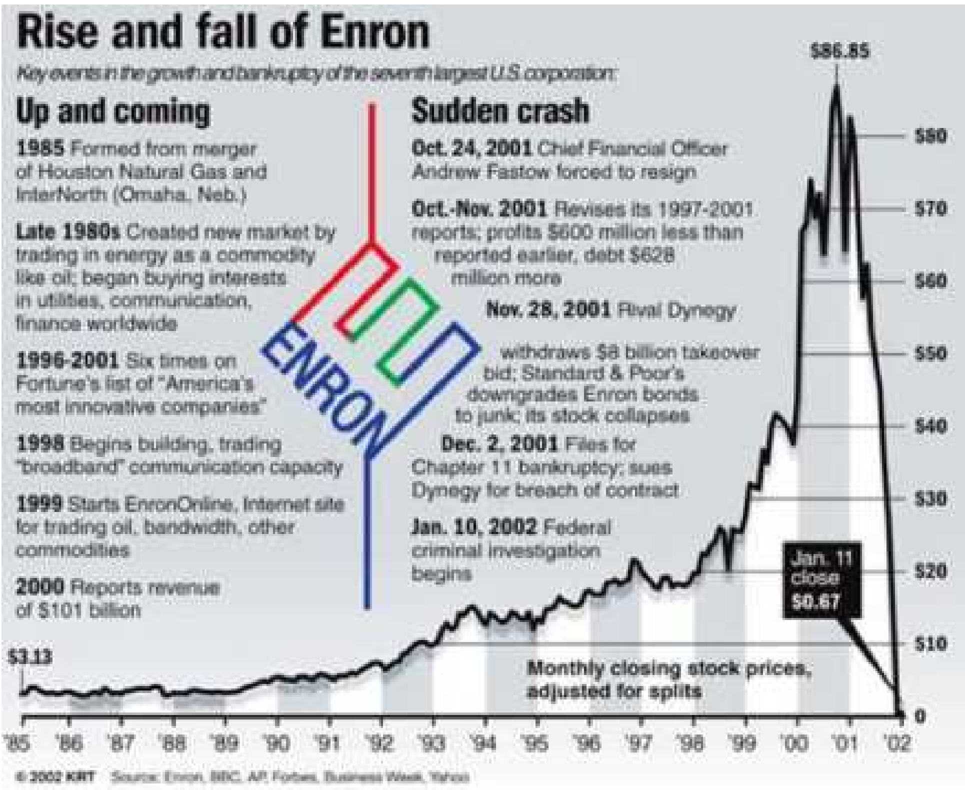
More than 50% of U.S. corporations are victims of fraud with losses of more than $500,000 (Albrecht & Searcy 2001)

Enron, WorldCom, Quest, Global Crossing, and Tyco's loss to shareholders was $460 billion (Cotton 2002)

Other fraud costs are legal costs, increased insurance costs, loss of productivity, adverse impacts on employee morale, customers' goodwill, suppliers' trust, and negative stock market reactions

➡ **The first victim of fraud is …. confidence**

Consequences of Fraud and Unethical Behavior



Who are Financial Analysts?

Three types of typical decision makers (stakeholders) might be interested in financial analysis:

Equity-oriented stakeholders	Debt-capital-oriented stakeholders	Compensation-oriented stakeholders
Investors Companies Corporate finance employees Stock analysts Pension funds Private equity providers Public authorities (tax authorities, etc.)	Banks Mortgage-credit institutes bondholders Companies	Management and executives Board of directors Equity-oriented stakeholders Debt-capital-oriented stakeholders
⬇	⬇	⬇
Valuation analysis	**Credit rating and liquidation analysis**	**Financial performance: Cash, Bonuses, Stock return, etc.**

➡ The decision model determines which types of information are requested: it may vary **depending upon the purpose of financial analysis**

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The purpose of the financial analysis: some examples

Possible questions

- Would an investment generate attractive returns?
- What is the degree of risk inherent in the investment?
- Should existing investing holdings be liquidated?
- Will cash flows be sufficient to service interest and principal payments on debt?
- …

You can make money by

- Investing in companies that are better than the market thinks they are.
- Shorting companies with exaggerated numbers

Expert analysts at work: Greenlight Capital example

David Einhorn
Hedge fund manager

Alma mater	Cornell University
Occupation	Founder & President, Greenlight Capital
Salary	$80 million (2011)
Net worth	$1.45 billion (August 2016)

Greenlight Capital founded by David Einhorn in 1996 with $900,000 of capital

More than 25% annualized net return

As of June 30, 2013, funds run by David Einhorn at Greenlight Capital were valued at **$5.3 billion**

Method:

Identify fraudulent or deceptive accounting practices
Sell the stock short
Publicize your findings

Famous shorts:

Lehman Brothers
Allied Capital
Green Mountain Coffee

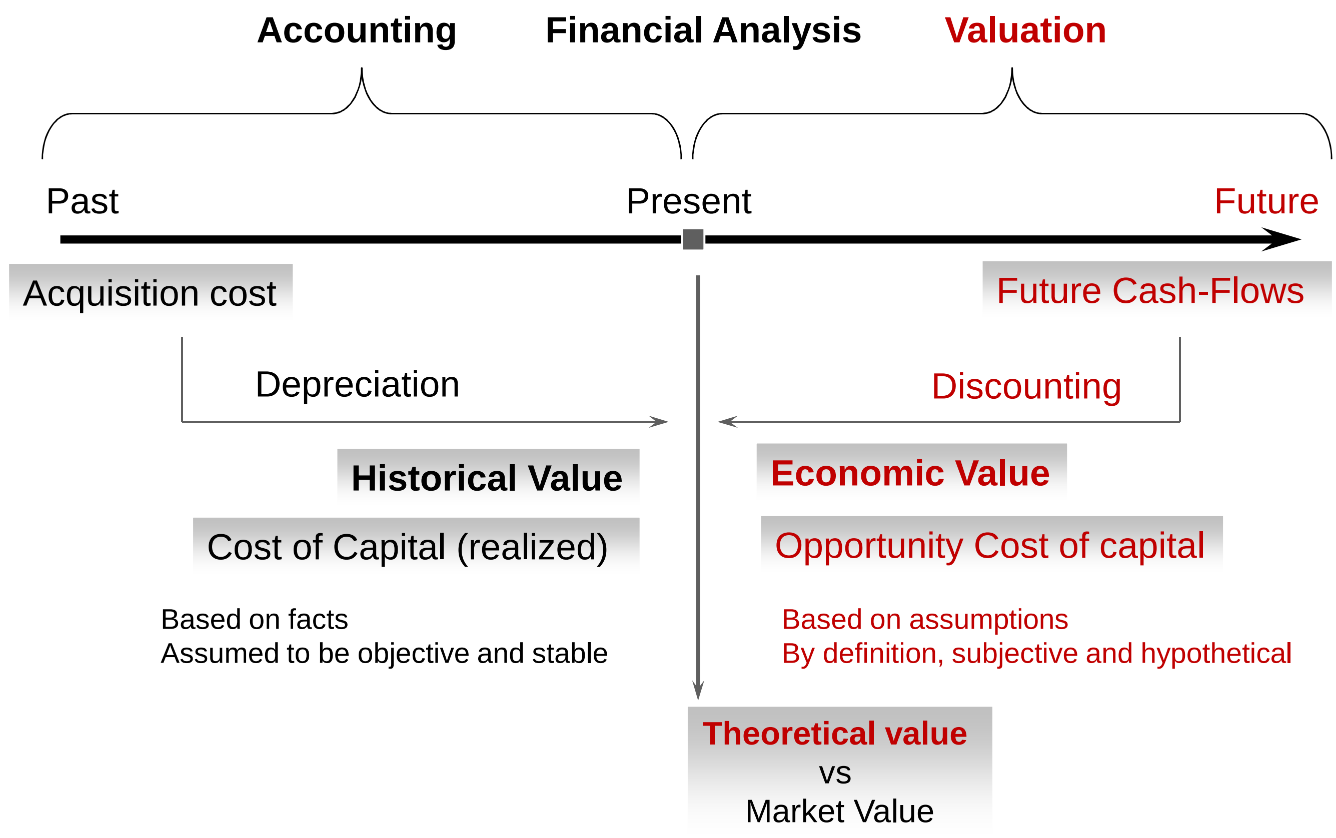
Financial Analysis Versus Accounting

Accounting provides Finance with its principal input

But a fundamental distinction has to be done between Finance and Accounting

Accounting	Financial Analysis and valuation
Purpose: control, keeping track, give indicators of performance	Purpose: Valuation, investing, raising money,
Backwards looking	Forward looking
Accrual based	Cash Flow based
Rule based	Based on economics and judgment not rules

Financial Analysis Versus Accounting



Appendix

Shareholder versus debt holder : advantages and disadvantages

Equity holder

(+) decision-making powers and control (voting rights)

(+) entitled to benefits generated by the business

(+) Liquidity & Exit option

(-) risk: uncertain revenues

(-) no possible repayment obligations

(-) gets paid off last in the event of a liquidation

Debt holder

(+) predetermined fixed income and certain revenues, regardless of the firm's performance

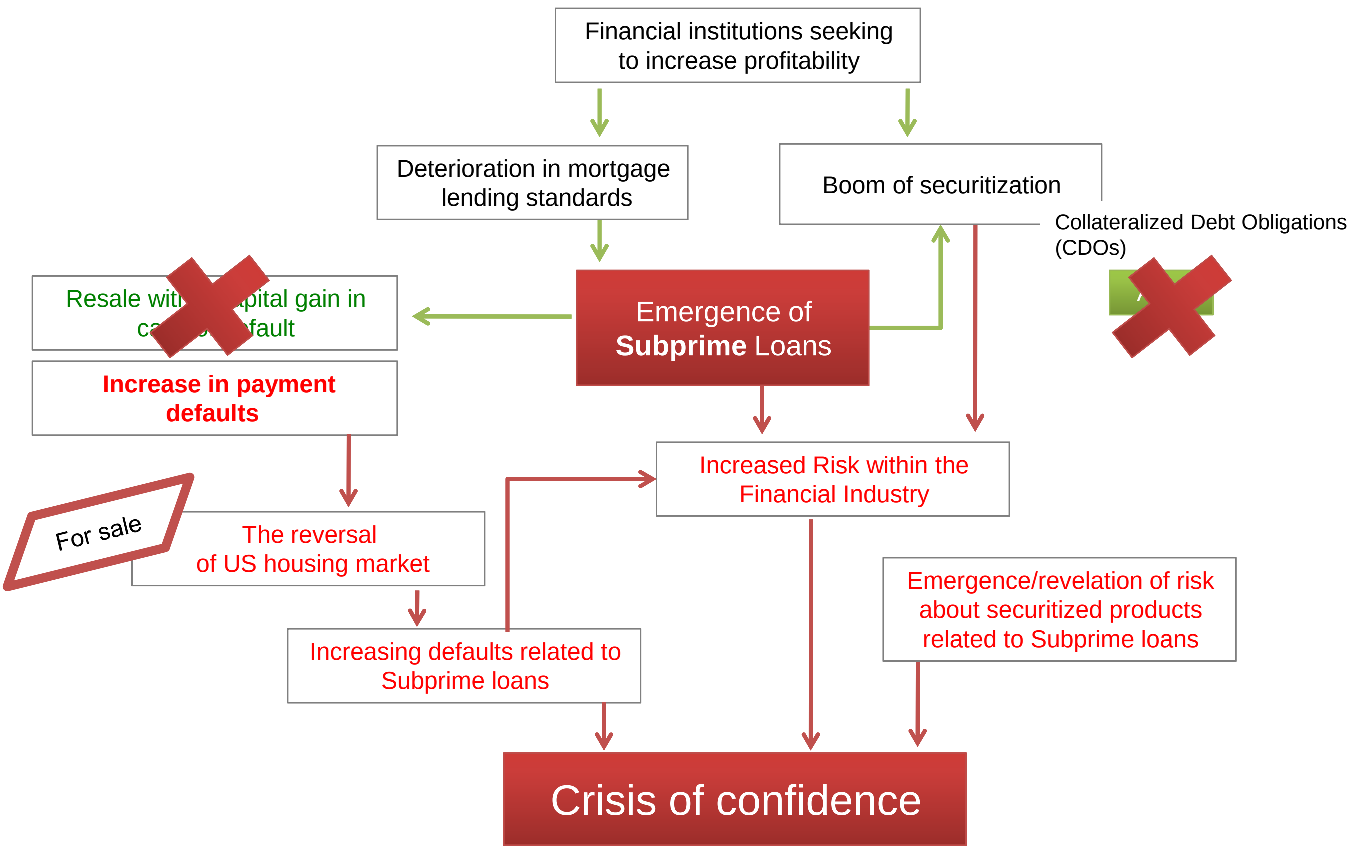
(+) do not take part in the venture's risk (except for default risk)

(-) lower revenue and opportunity costs

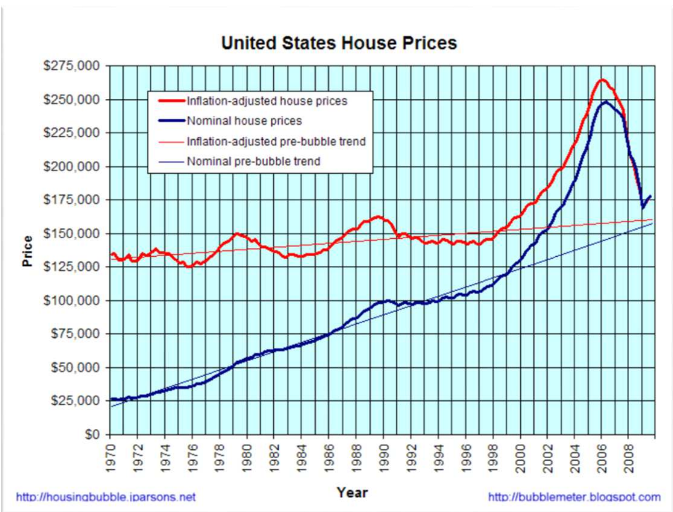
(-) no decision power

Some Considerations on the Causes of the Financial Crisis

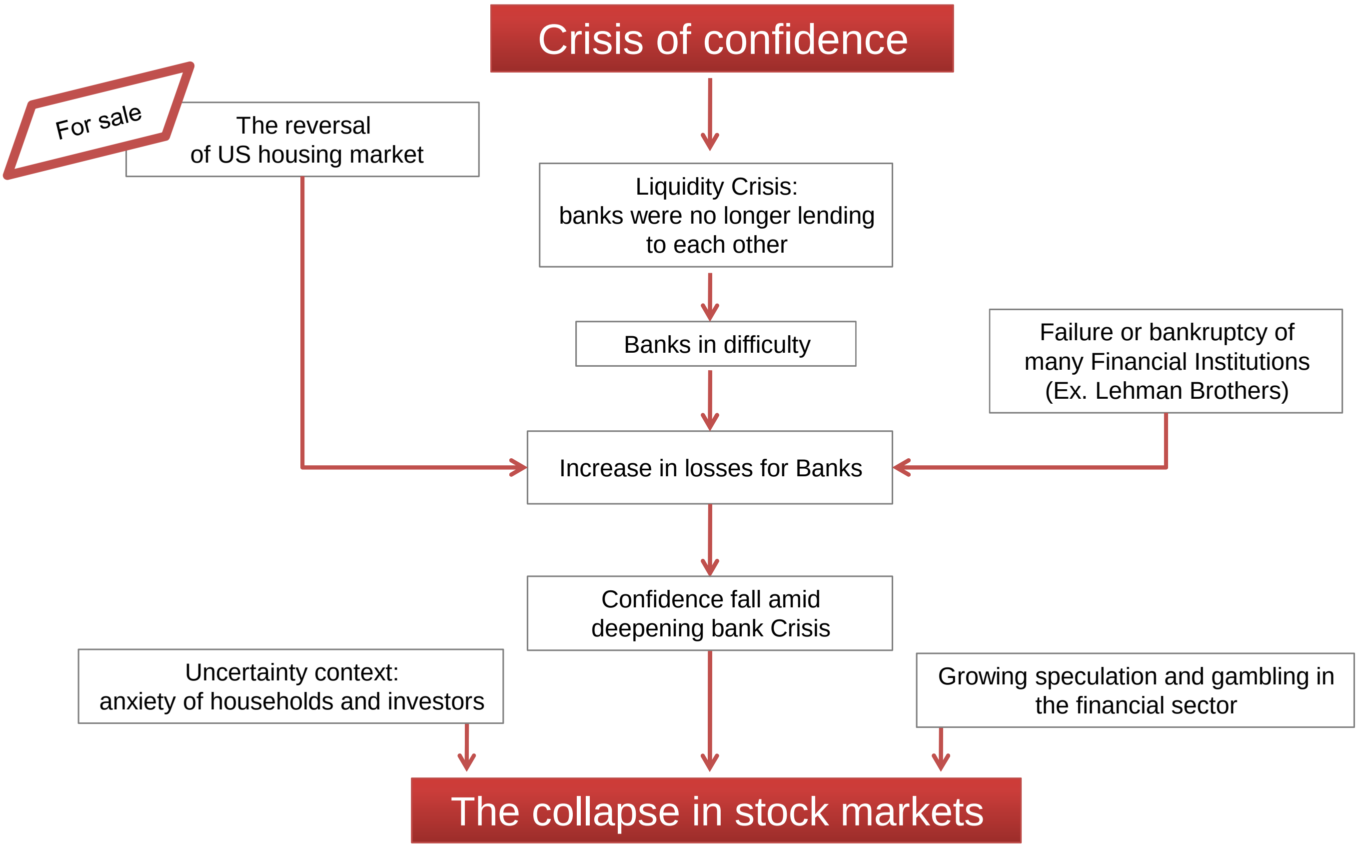
Some Considerations on the Causes of the Financial Crisis



Some Considerations on the Causes of the Financial Crisis

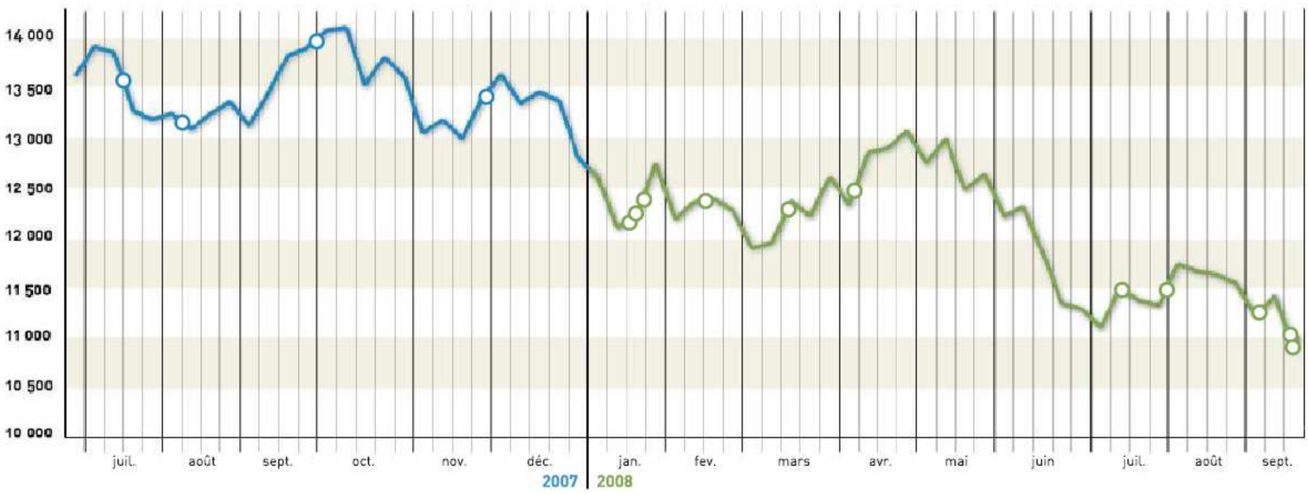


Some Considerations on the Causes of the Financial Crisis

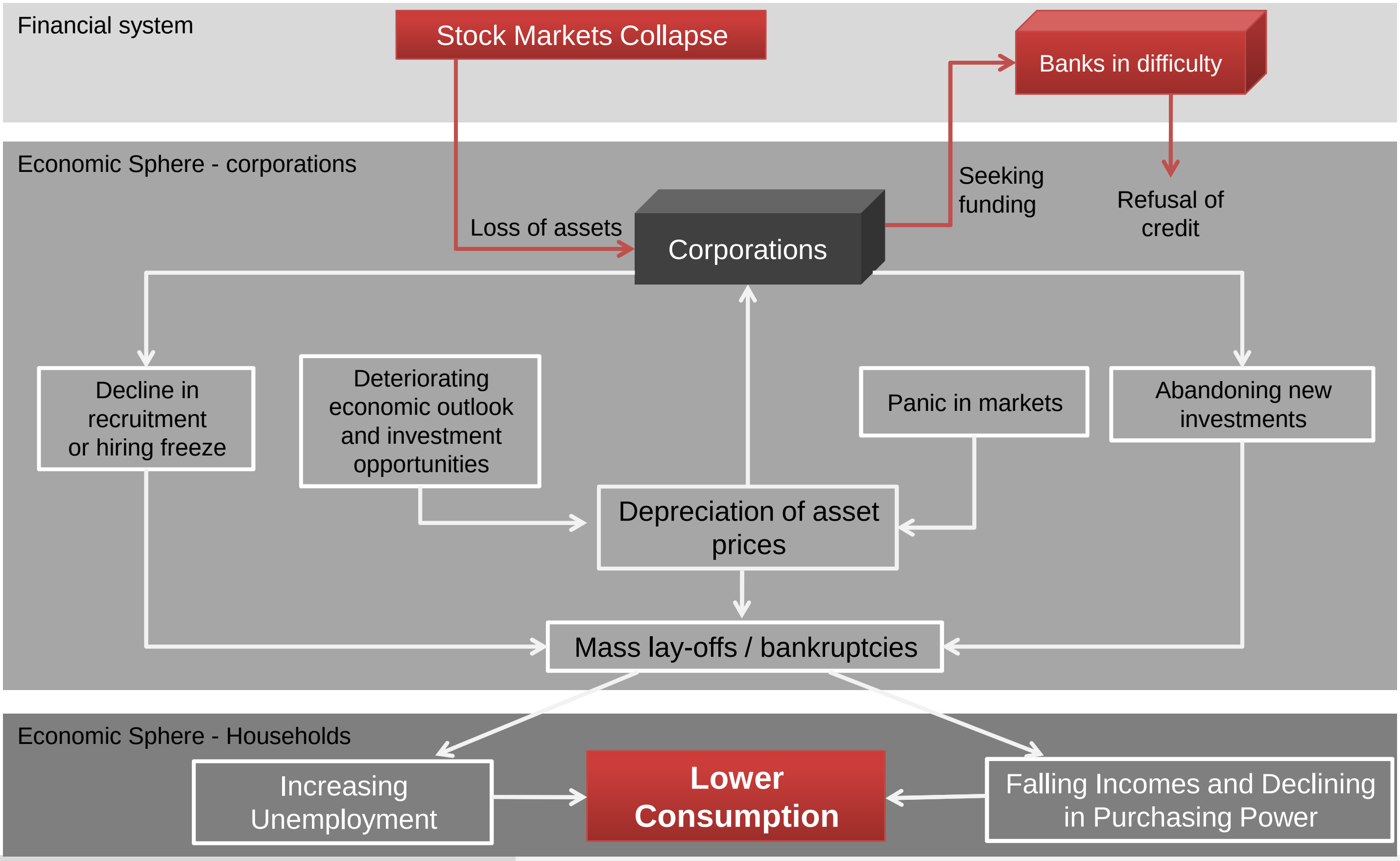


Some Considerations on the Causes of the Financial Crisis

The Dow Jones lost almost 3 000 points in one year



From a Financial Crisis to an Economic Crisis



From a US Financial Crisis to a Global Economic Crisis

The increase of interdependencies in the global financial system

- **firms cannot exist in isolation and they interact with other firms through supply-costumers relations, but also partnership, ownership and other interdependencies**

- **Systemic risk**

What Was Wrong? … Some thoughts for your reflection…

The role of regulators: the consequences of deregulation and cheap money

➡ **The illusion of cheap money**

Preamble
What is Finance?
The 2008 Financial crisis
The financial industry called into question
Is it still worthwhile to study Finance?

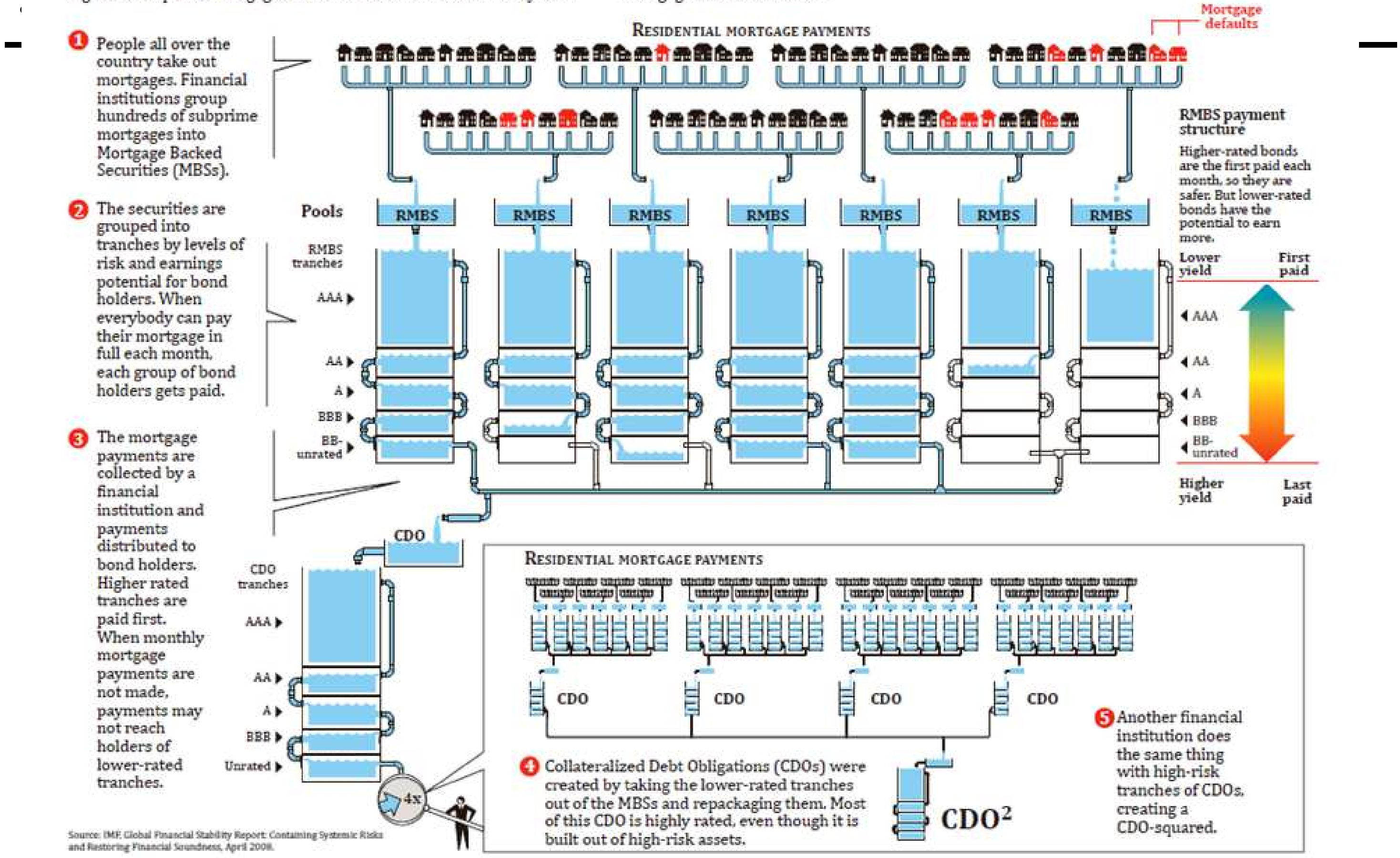
What Was Wrong? … Some thoughts for your reflection…

The role of regulators: the consequences of insufficient prudential rules and cheap money

➡ In a competitive market, in which the primary incentive is to increase profitability, we must expect that financial institutions will always seek to test the boundaries of regulation and escape the perimeter or place some of their activities beyond it …

The Theory of How the Financial System Created AAA-rated Assets out of Subprime Mortgages

In the financial system, AAA-rated assets are the most valuable because they are the safest for investors and the easiest to sell. Financial institutions packaged and re-packaged securities built on high-risk subprime mortgages to create AAA-rated assets. The system worked as long as mortgages all over the country and of all different characteristics didn't default all at once. When homeowners all over the country defaulted, there was not enough money to pay off all the mortgage-related securities.



Source: IMF, Global Financial Stability Report: Containing Systemic Risks and Restoring Financial Soundness, April 2008.