RISKY RATINGS?

Reducing Over-Reliance by using the Agencies' analysis sensibly

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Scottish Financial Risk Academy

MAXWELL INSTITUTE FOR MATHEMATICAL SCIENCES

HERIOT WATT UNIVERSITY

THE UNIVERSITY OF EDINBURGH

‘Lessons from the Financial Crisis’

Lesson 1: **Use of Credit Rating agencies** (CRAs)

Lesson 2: **What are CRAs?**

Lesson 3: **Inter-agency comparability?**

Lesson 4: **Super Seniors** (Intra-agency comparability)?

Lesson 5: **Definition of ‘Rating’**

Lesson 6: **Captured risks**

Lesson 7: **Constructive criticism**

Lesson 8: **Failures**

Lesson 9: **Risk of Over-Reliance & Mitigants**

Lesson 10: **Using CRAs’ analysis sensibly**

Appendix: **Origin & History, Global CRAs, Rating scope, Rating actions & Process, Benefits, Limitations**

Lesson 1:

Use of Credit Rating agencies

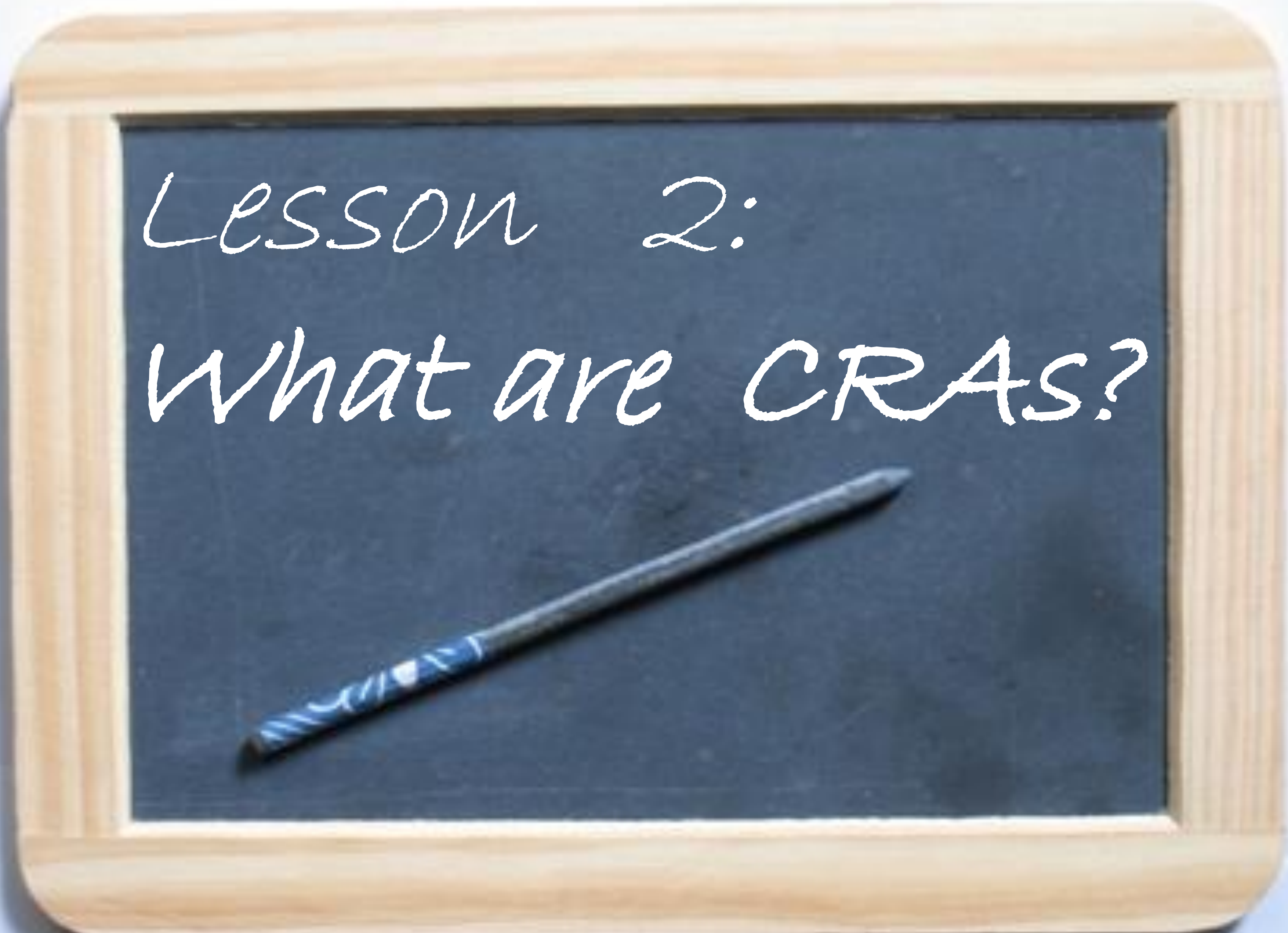
Q) Do you use Rating agencies (CRAs)?

WHO uses ratings …

Banks, Other Financial Institutions, Originators & Issuers, Investors, Financial Regulators, Other Rating agencies, etc. …

WHY are ratings used…

- **Outsource analysis**
- Determine required **economic** and **regulatory capital charges**
- **Manage** individual credit & portfolio **risks**
- Feature as **input into** Structured Finance **models** (CDO^2 etc.)


Lesson 2:
What are CRAs?

Q) **HOW many CRAs exist globally?**

1) A.M. Best Company, Inc.
2) Agusto & Co. Ltd.
3) Ahbor Rating
4) Apoyo & Asociados Internacionales S.A.C.
5) Bank Watch Ratings S.A.
6) BRC Investor Services S.A.
7) Calificadora de Riesgo, PCA
8) Capital Intelligence, Ltd.
9) Caribbean Information & Credit Rating Services Ltd. (CariCRIS)
10) Central European Rating Agency (CERA)
11) Chengxin International Credit Rating Co., Ltd.
12) China Lianhe Credit Rating, Co. Ltd.
13) Clasificadora de Riesgo Humphreys, Ltda.
14) Class y Asociados S.A. Clasificadora de Riesgo
15) CMC International, Ltd.
16) Companhia Portuguesa de Rating, SA (CPR)
17) Credit Analysis & Research Ltd (CARE)
18) "Credit-Rating": A Ukrainian rating agency
19) Credit Rating Agency of Bangladesh, Ltd. (CRAB)
20) Credit Rating Information and Services, Ltd. (CRISL)
21) CRISIL, Ltd.
22) Dagong Global Credit Rating Co., Ltd.
23) Demotech, Inc.
24) Dominion Bond Rating Service (DBRS)
25) Duff & Phelps de Colombia, S.A., S.C.V
26) Ecuability, SA
27) Egan-Jones Rating Company
28) Equilibrium Clasificadora de Riesgo
29) European Rating Agency (ERA)
30) Feller Rate Clasificadora de Riesgo
31) Fitch Ratings, Ltd.
32) Global Credit Rating Co.
33) HR Ratings de Mexico, S.A. de C.V.
34) Interfax Rating Agency (IRA)
35) Investment Information and Credit Rating Agency (ICRA)
36) Islamic International Rating Agency, B.S.C. (IIRA)
37) Istanbul International Rating Services, Inc.
38) Japan Credit Rating Agency, Ltd. (JCR)
39) JCR Avrasya Derecelendime A.S.
40) JCR-VIS Credit Rating Co. Ltd.
41) Kobirate Uluslararası Kredi Derecelendirme ve Kurumsal Yönetim Hizmetleri A.Ş.
42) Korea Investors Service, Inc. (KIS)
43) Korea Ratings Corporation
44) LACE Financial Corp,
45) Lanka Rating Agency, Ltd. (LRA)
46) Malaysian Rating Corporation Berhad (MARC)
47) Mikuni & Co., Ltd.
48) Moody's Investors Service
49) National Information & Credit Evaluation, Inc. (NICE)
50) ONICRA Credit Rating Agency of India, Ltd.
51) P.T. Kasnic Credit Rating Indonesia -- Indonesia
52) P.T. PEFINDO Credit Rating Indonesia
53) Pacific Credit Rating (PCR)Pakistan Credit Rating Agency, Ltd.
54) Philippine Rating Services, Corp. (PhilRatings)
55) RAM Rating Services Berhad (RAM)
56) Rapid Ratings International, Inc.
57) Rating and Investment Information, Inc. (R&I)
58) Realpoint, LLC
59) Rus Ratings
60) Saha Kurumsal Yönetim ve Kredi Derecelendirme Hizmetleri A.Ş
61) Seoul Credit Rating & Information, Inc.
62) Shanghai Credit Information Services Co., Ltd.
63) Shanghai Far East Credit Rating Co., Ltd.
64) Slovak Rating Agency, a.s. (SRA)
65) SME Rating Agency of India Limited (SMERA)
66) Sociedad Calificadora de Riesgo Centroamericana, S.A.
67) Standard and Poors (S&P)
68) Taiwan Ratings, Corp. (TCR)
69) Thai Rating and Information Services Co., Ltd. (TRIS)
70) TheStreet.com Ratings, Inc.
71) TCR Kurumsal Yonetim ve Kredi Derecelendirme Hizmetleri A.S.
72) Veribanc, Inc.

Source: www.defaultrisk.com

WHAT are Credit Rating Agencies?

- Rating agencies are **intermediaries** in capital markets
- They **collate and evaluate information** on the issuer, and **disseminate opinions** to investors (and other interested parties)
- Other intermediaries are banks and insurance companies
- Issuers expect **reduced cost of funds**
- Issuers expect **access to broader investor pool**
- **Increased role** of rating agencies:
  - Financial disintermediation; bank/ borrower to issuer/ buyer
  - Regulation

Lesson 3:

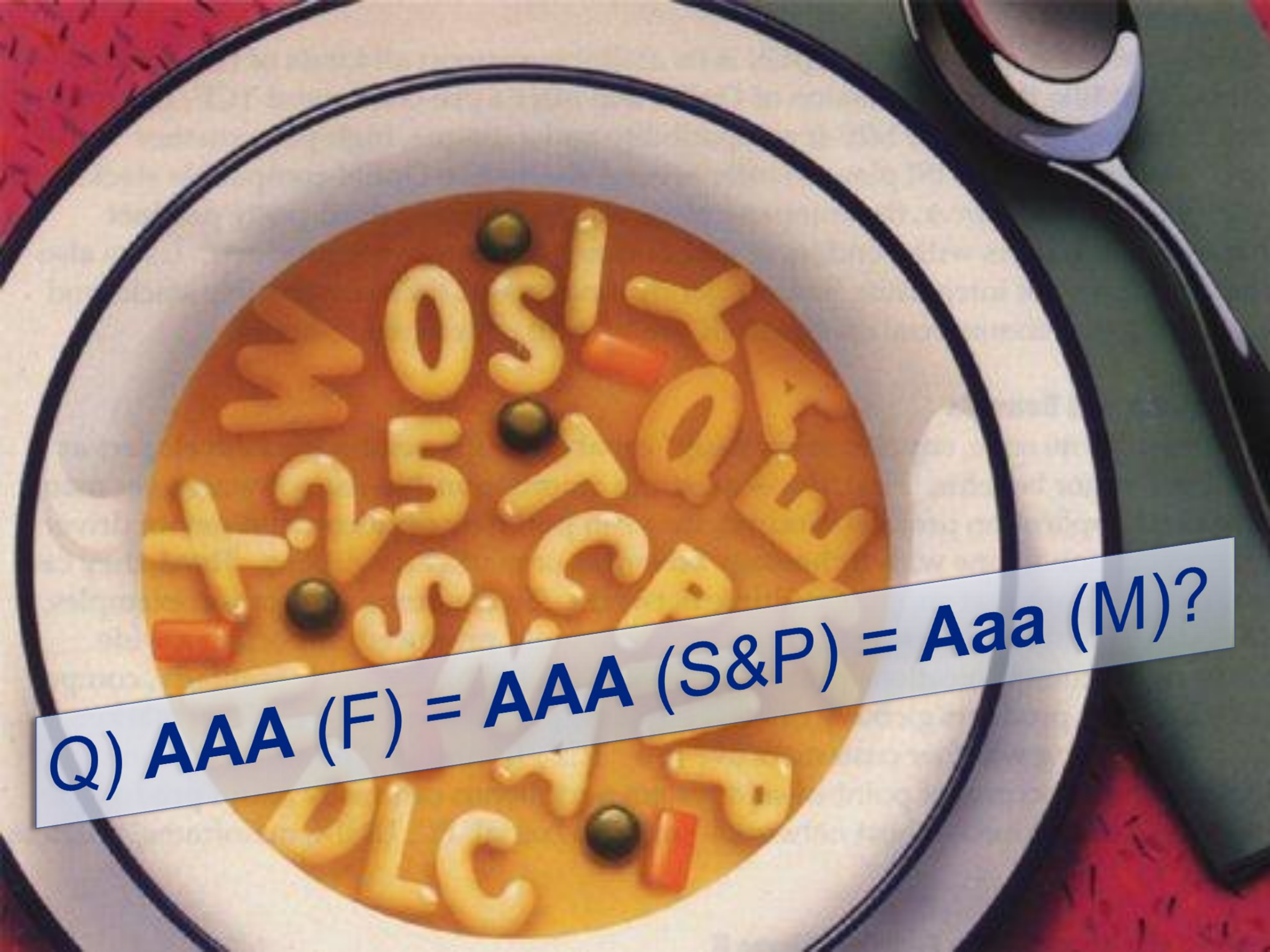
Inter-agency Comparability

Q) **D** (F) = **D** (S&P) = **D** (M)

RATINGS ‘MAPPING’ TABLE

<table>
<tr><th rowspan="2"></th><th colspan="2">Fitch Ratings</th><th colspan="2">Moody’s</th><th colspan="2">Standard & Poors</th><th rowspan="2">Mapped internal rating</th></tr>
<tr><th>Long-term rating</th><th>Short-term rating</th><th>Long-term rating</th><th>Short-term rating</th><th>Long-term rating</th><th>Short-term rating</th></tr>
<tr><td rowspan="10">Investment Grade</td><td>AAA</td><td rowspan="3">F1+</td><td>Aaa</td><td rowspan="5">P1</td><td>AAA</td><td rowspan="4">A-1+</td><td>iAAA</td></tr>
<tr><td>AA+</td><td>Aa1</td><td>AA+</td><td>iAA+</td></tr>
<tr><td>AA</td><td>Aa2</td><td>AA</td><td>iAA</td></tr>
<tr><td>AA-</td><td rowspan="2">F1+ or F1</td><td>Aa3</td><td>AA-</td><td>iAA-</td></tr>
<tr><td>A+</td><td>A1</td><td>A+</td><td>A-1</td><td>iA+</td></tr>
<tr><td>A</td><td>F1</td><td>A2</td><td>P-1 or P-2</td><td>A</td><td>A-1 or A-2</td><td>iA</td></tr>
<tr><td>A-</td><td>F1 or F2</td><td>A3</td><td rowspan="2">P-2</td><td>A-</td><td rowspan="2">A-2</td><td>iA-</td></tr>
<tr><td>BBB+</td><td>F2</td><td>Baa1</td><td>BBB+</td><td>iBBB+</td></tr>
<tr><td>BBB</td><td>F2 or F3</td><td>Baa2</td><td>P-2 or P-3</td><td>BBB</td><td>A-2 or A-3</td><td>iBBB</td></tr>
<tr><td>BBB-</td><td>F3</td><td>Baa3</td><td>P-3</td><td>BBB-</td><td>A-3</td><td>iBBB-</td></tr>
<tr><td rowspan="12">Speculative Grade</td><td>BB+</td><td rowspan="3">B</td><td>Ba1</td><td rowspan="11">Not Prime</td><td>BB+</td><td rowspan="6">B
Ranges within B-1, B-2 and B-3</td><td>iBB+</td></tr>
<tr><td>BB</td><td>Ba2</td><td>BB</td><td>iBB</td></tr>
<tr><td>BB-</td><td>Ba3</td><td>BB-</td><td>iBB-</td></tr>
<tr><td>B+</td><td rowspan="8">C</td><td>B1</td><td>B+</td><td>iB+</td></tr>
<tr><td>B</td><td>B2</td><td>B</td><td>iB</td></tr>
<tr><td>B-</td><td>B3</td><td>B-</td><td>iB-</td></tr>
<tr><td>CCC+</td><td>Caa1</td><td>CCC+</td><td rowspan="5">C</td><td>iCCC+</td></tr>
<tr><td>CCC</td><td>Caa2</td><td>CCC</td><td>iCCC</td></tr>
<tr><td>CCC-</td><td>Caa3</td><td>CCC-</td><td>iCCC-</td></tr>
<tr><td>CC</td><td>Ca</td><td>CC</td><td>iCC</td></tr>
<tr><td>C</td><td>C</td><td>C</td><td>iC</td></tr>
<tr><td>DDD, DD, D</td><td>D</td><td colspan="2">Moody’s D</td><td>D</td><td>D</td><td>iD</td></tr>
</table>

Source: Bloomberg, Fitch, Moody’s and S&P



Q) **AAA** (F) = **AAA** (S&P) = **Aaa** (M)?

ANALYTICAL DIFFERENCES

FitchRatings
KNOW YOUR RISK

Rating
Analysis

Moody's

STANDARD
&POOR'S

RATING PRINCIPLES

Fitch Ratings, Standard & Poor's:

Probability of default (PD) = First dollar of loss

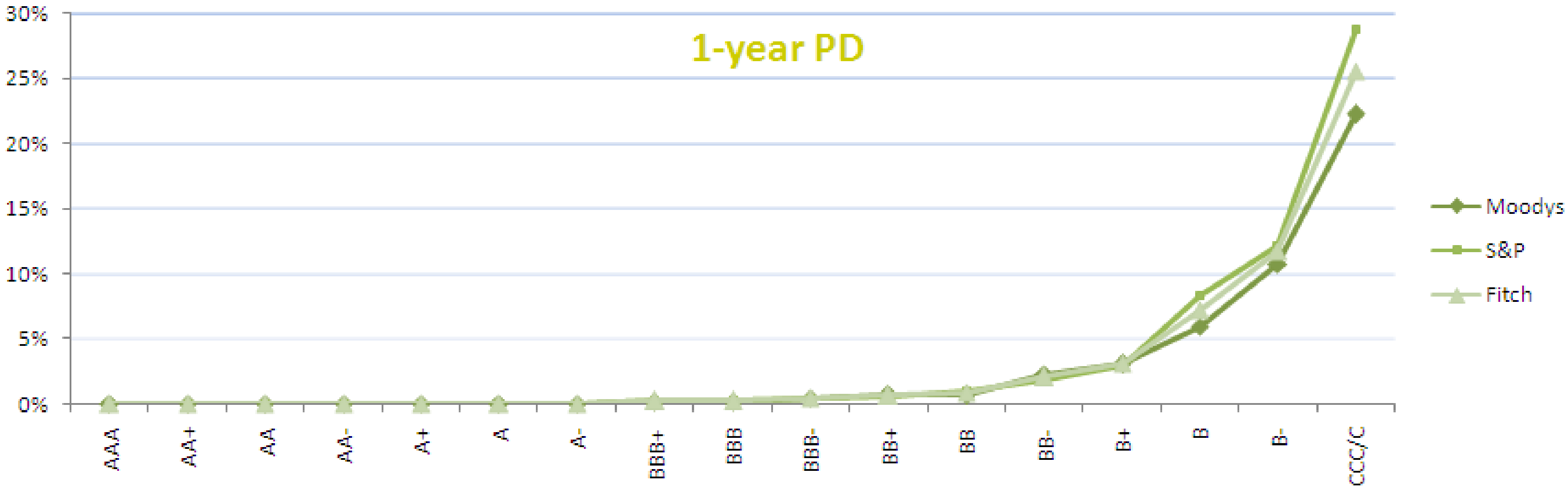
➔ *What is the ultimate default risk?*

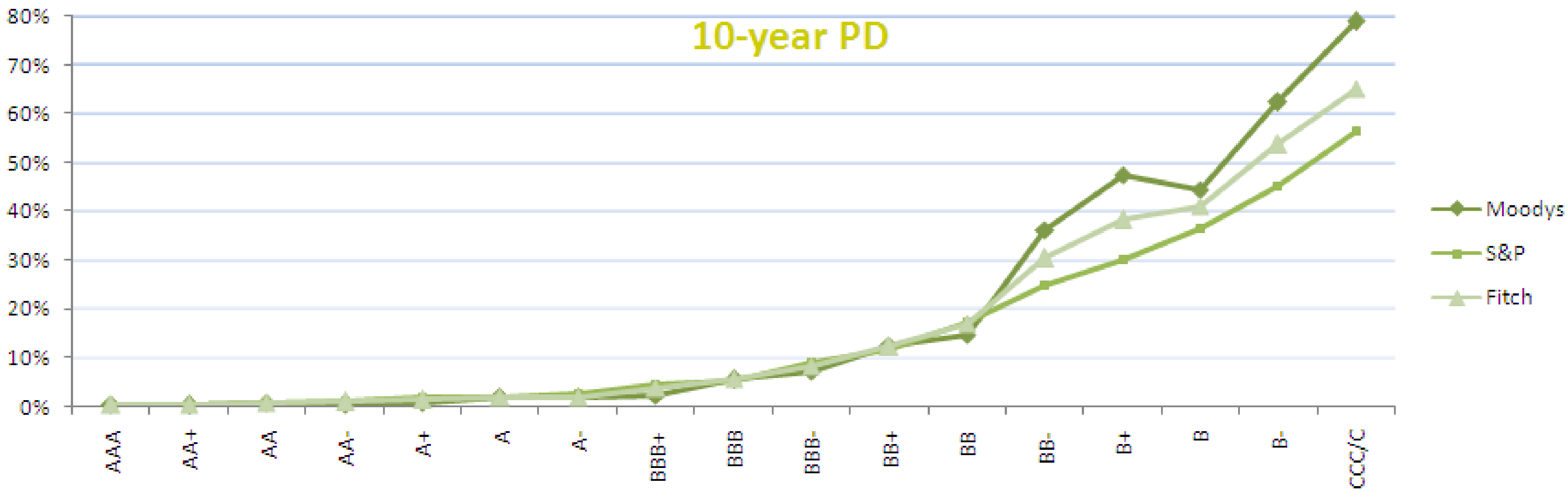
Moody's:

Expected loss (EL) = [(PD) X (LGD)]

➔ *What is the amount of net loss suffered?*

STATISTICAL : Probability of Default





Lesson 4:

SUPER SENIORS

(or: Intra-agency Comparability)

Q) **SF Bond 1 rated AAA** (same CRA)

= **SF Bond 2 rated AAA** (same CRA)?

SUPER-SENIOR RATINGS

SF Bond 1

Tranche 1:	AAA
Tranche 2:	AA+
Tranche 3:	A
Tranche 4:	BBB-
Tranche 5:	BB
Tranche 6:	B+
First Loss piece:	NR

SF Bond 2

Tranche 1:	AAAAA
Tranche 2:	AAAA
Tranche 3:	AAA
Tranche 4:	AA+
Tranche 5:	A
Tranche 6:	BBB-
Tranche 7:	BB
Tranche 8	B+
First Loss piece:	NR

Lesson 5:

Definition of 'Rating'

Q) **How would you define 'rating'?**

*A) **Benchmark measure for LGD***

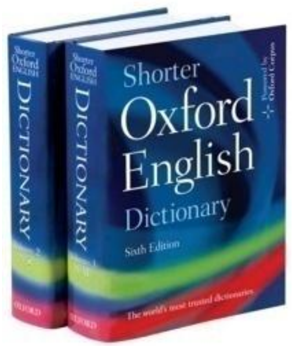
*B) **Benchmark measure for PD***

*C) **Opinion***

*D) **Not necessarily based on facts or knowledge***

RATING DEFINITION

- An **opinion**… *   [Financial journalists]
- …on the **relative ability**…
- …of an entity **to meet financial commitments**.



…view not necessarily based on fact or knowledge

Ratings are benchmark measures of…

- ***Probability of default*** (PD)
- ***Expectations of Loss given default*** (LGD)

Lesson 6:

Captured Risks

Q) **Which RISKS are captured by credit ratings?**

A) *Credit & Market risk*

B) *Credit, Market & Operational risk*

C) *Credit, Market, Operational, Liquidity & Basis risk*

D) *None of the above*

RATINGS…

…can capture:

Credit risk only !

…do NOT capture:

- Market risk
- Liquidity risk
- Operational risk
- Basis risk (IR risk)

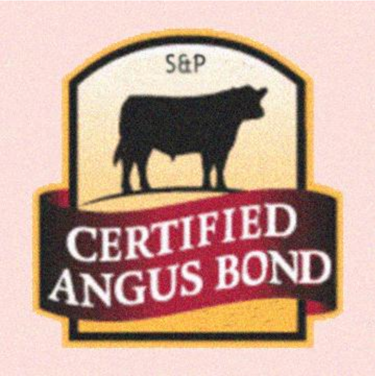
…but, even so, are ’hard-wired’…

- by Basel II
- into banks’ credit rating models
- Investment guidelines and Asset management mandates

Lesson 7:

Constructive Criticism

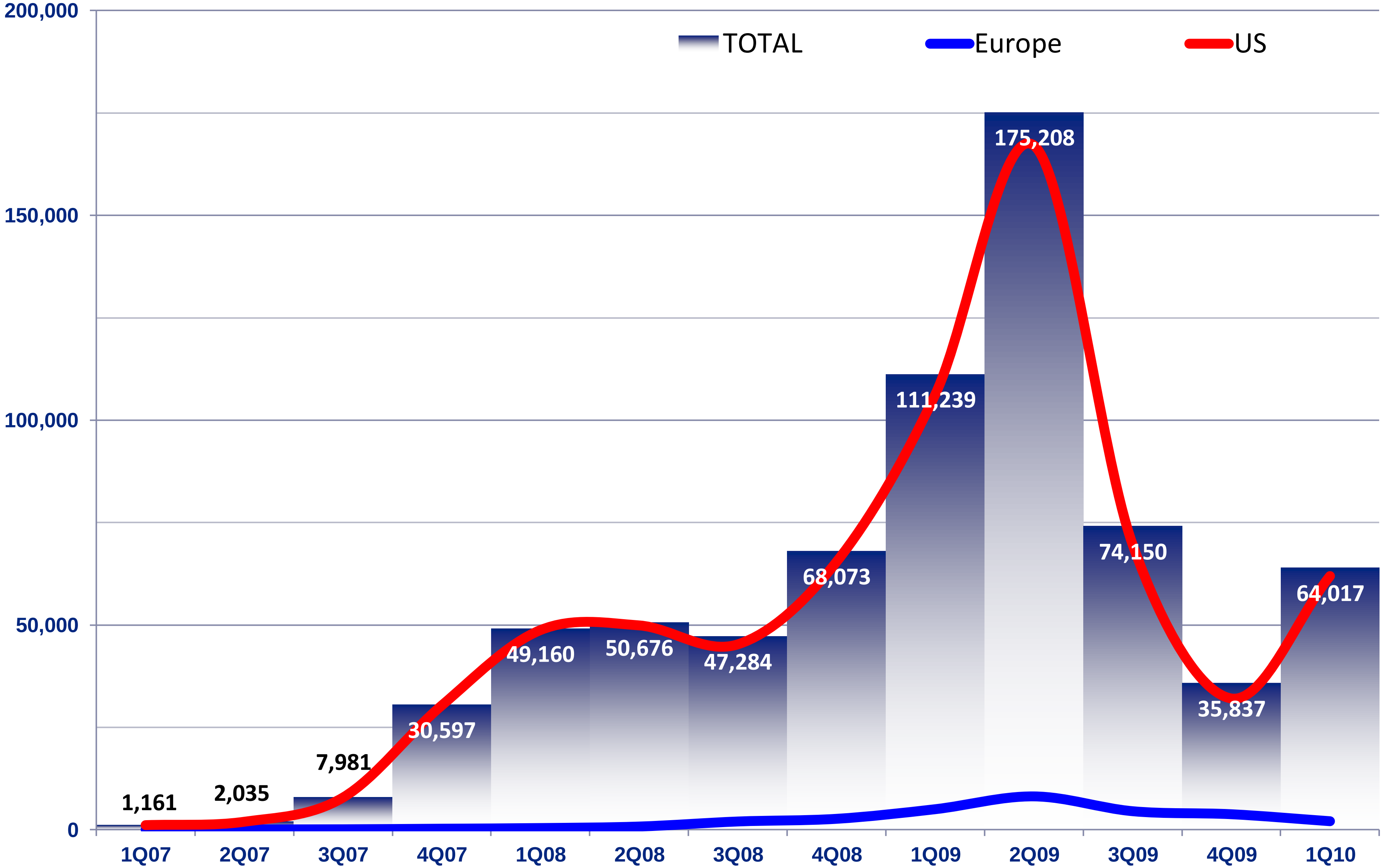
CONSTRUCTIVE CRITICISM



- Business model: Too slow to react
- Assumptions, methodologies & models
- Conflict of interest (‘issuer-pays’ model)
- Limited capture
- Split ratings
- Notching of competitor’s ratings
- Implied ratings & internal competition
- etc.

Regional problem → GLOBAL IMPACT

(Sub-prime mortgages) (SF Bond Tranche Downgrades)



(Since January 2007 - Source: Bloomberg / RATT function)

Lesson 8: Failures

FAILURES

AIG, Bear Stearns, Bradford & Bingley, Enron, Icelandic banks, Lehman Bros., Monolines, Northern Rock, Parmalat, PIIGS, Sub-prime bonds etc.

In their own words...

Fitch: *"… **did not foresee** the magnitude of the decline…or the dramatic shift in borrower behavior…"*

Moody's: *"…We **did not . . . anticipate** the magnitude and speed of the deterioration in mortgage quality or the suddenness of the transition to restrictive lending..."*

S&P: *"…It is now clear that **a number of assumptions** used in preparing ratings on mortgage-backed securities issued between 2005 and mid-2007 **did not work**…"*

Source: US Government Oversight and Reform Committee, Oct 2008

Lesson 9:

THE RISKS OF OVER-RELIANCE

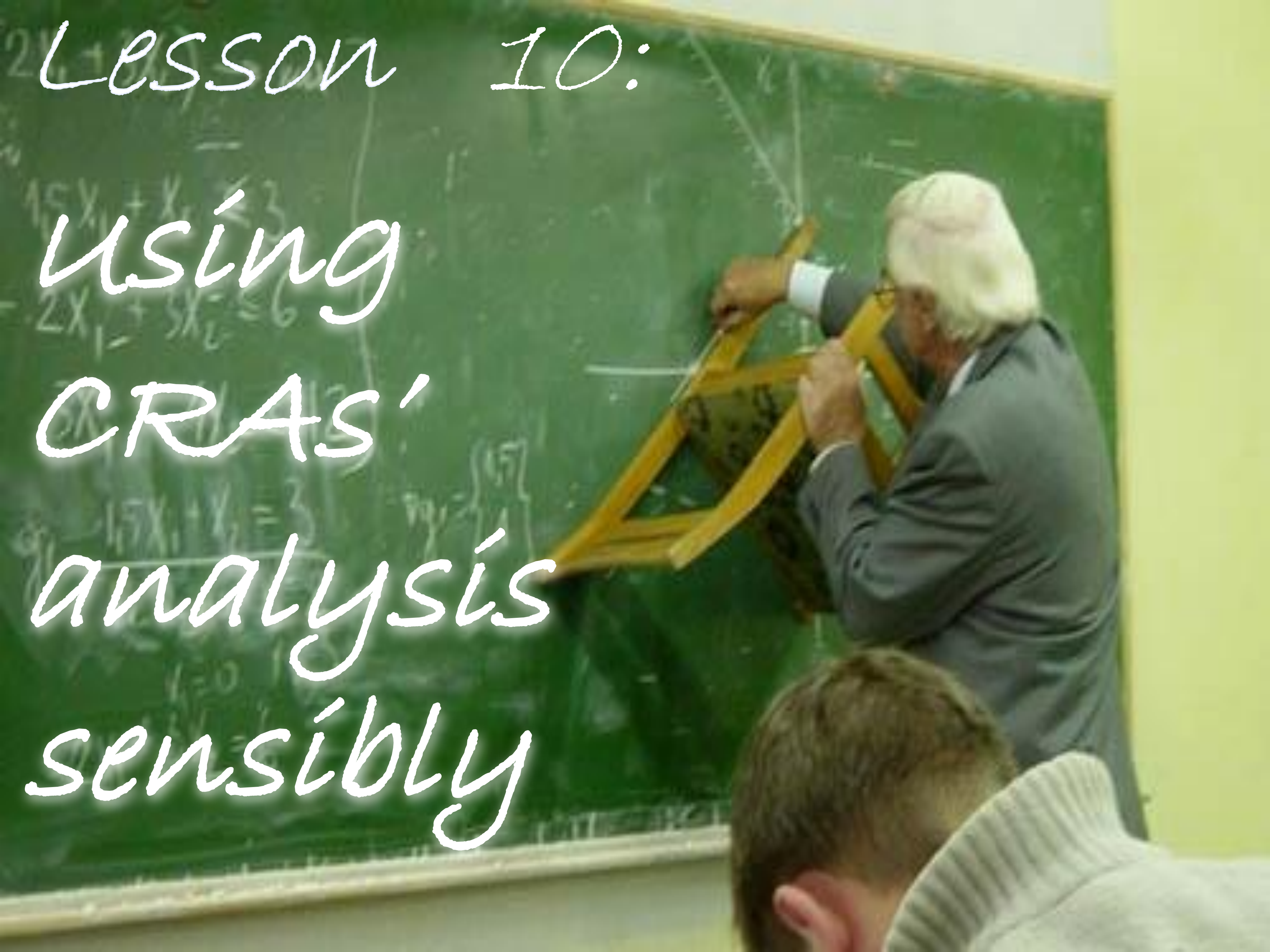
- AND SUITABLE MITIGANTS

OPERATIONAL RISKS

- **Changing** Rating methodologies and assumptions
- **Time lag** of rating actions
- **Rating model risks**
- Striking the right balance between **non**- and **over-**regulation

RISK MITIGANTS

- Understanding the **meaning & limitations** of ratings
- Understanding **instruments' risks**
- Independent **analysis**
- **Internal** ratings
- **Disputing rating decisions** with the agencies
- **Awareness** that agencies **CAN** and **DO** get their ratings wrong (Operational risk scenario)


Lesson 10:
using
CRAs'
analysis
sensibly

SENSIBLE USE of CRAs' Analysis

- **Fully understand the instrument** you are investing in

- **Understand ratings' limitations** and
  know how to **mitigate rating-related risks** (previous slide)

- '**Ignore ratings** designators' (i.e. AAA etc.) and
  focus on **CRAs'** **<u>analytical narrative</u>** instead

- Look out for **what is NOT there in the narrative but should**
  e.g. Why are obvious issues missing in the analysis?
  Why has this bond not been rated by all three CRAs?

- Apply **common sense** and trust your **gut feeling**

Q) **Would you now give CRAs more or less credit?**

CLOSE

Thank you very much

for your attention, contribution and listening today!

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- Credit rating advisor for the World Bank as part of various large-scale projects involving GSEs of several African nations
- Industry expert in credit rating agency as well as Structured finance-related issues and frequent speaker on international conferences
- Author and passionate reviewer/editor of several risk workbooks
- Frequent contributor to various industry working groups consulting regulators, exchanges and central banks

Publications

- 'Securitisation & Structured Finance post Credit Crunch: A Best Practice Deal Lifecycle Guide', John Wiley & Sons Inc., exp.1Q11
- 'Investor Requirements for 2011 and beyond: Due diligence and Risk analysis in a post-crisis world', Euromoney Yearbook chapter
- 'IT in Investment Operations', Jun 2010 (Senior reviewer), 'Operational Risk' , Oct 2009 (Senior reviewer) & 'Risk in Financial Services', Aug 2009 (Technical Reviewer) - Workbooks of the Chartered Institute for Securities & Investments (CISI)
- 'Frontiers of Risk management – Chapter 14: Credit rating agencies and the IRB approach', Euromoney Book, 2007
- Numerous special, research and criteria reports on Fitch Rating's website as Performance & Rating analyst, Aug 2004 to Oct 2006
- SAP Risk Analyzer Manual (in-house publication, in German), Jan 2002

Professional qualifications & affiliations

- Individually Chartered Member of the Chartered Securities and Investment Institute (CISI)
- Bachelor of Banking Services and Operations, CCI
- 'Train the Trainers' Certificate
- 'Banking in Britain' Certificate
- German Banking Certificate ('Bankkaufmann')
- Volunteer at and Member of the Professional Risk Manager's International Association (PRMIA)
- Member of the Global Association of Risk Professionals (GARP)

Assignments (Past & current)

- The World Bank
- Deutsche Bank
- Lloyds Banking Group
- Bank of Scotland Treasury
- The Royal Bank of Scotland Group
- HypoVereinsbank / Unicredit
- Dresdner Bank
- Primary insight (Subsidiary of Bear Stearns)
- De Matteo Monness (Subsidiary of Goldman Sachs)
- Fitch Ratings
- Vista Research (Subsidiary of Standard & Poor's)

www.markuskrebsz.info / www.markuskrebsz.co.uk

APPENDIX:

Origin & History

Global Rating Agencies

The Rating Process

Benefits

Limitations

ORIGIN & HISTORY

1841 – 1st mercantile rating agency

- Founded by Louis Tappan
- Rating merchants' ability to pay
- Taken over by Robert Dun

1849 – 2nd rating agency established

- By John Bradstreet

1859 – 1st rating guide published

- By Robert Dun's agency

1909 – Moody's founded

- By John Moody
- 'Manual of Railroad Securities'

1916 – Poor's Publishing Company

- Publishes its first ratings guide

1922 – Standard Statistics company

1924 – Fitch Publishing company

1933 – Merger: Dun & Bradstreet

- Becomes owner of Moody's in 1962

1941 – Merger: Standard & Poor's

1966 – Takeover: S&P by McGraw Hill

1975 – Fundamental change

- Business model
- 'Subscriber-pays' to 'Issuer-pays'

2007 to 2009 – Global credit crisis

- Part blame for market collapse
- New rating agency regulation

WHO PROVIDES RATINGS?

- More than 2,400 institutions worldwide
- Ratings and analysis track debt covering more than:
  - 100 sovereign nations
  - 11,000 company issuers
  - 25,000 public finance issuers
  - 70,000 structured finance obligations
- Employs more than 2,400 people worldwide, ~1,000 analysts.
- Rates 170,000 corporate, government and structured finance securities

www.moodys.com

- 6,300 employees
- Located in 21 countries and markets
- Has played a leading role for more than 90 years
- Ratings on US$ 34 trillion of debt issued in 100+ countries
- Issuers and debt obligations of corporations, states and municipalities, financial institutions, insurance companies and sovereign governments
- Ratings, indices, equity research, risk solutions
  - ✓ S&P U.S. Indices
  - ✓ S&P/Citigroup Global Equity Indices
  - ✓ S&P Emerging Market Indices
  - ✓ S&P Alternative Indices

STANDARD &POOR'S

www.ratingsdirect.com or www.globalcreditportal.com

- Dual-headquartered in NY & London
- 90 countries 1,500 employees
  - ✓ 3,100 financial institutions
  - ✓ 1,600 banks
  - ✓ 1,400 insurance companies.
  - ✓ 1,200 corporates, 89 sovereigns, 45,000 municipal transactions.
  - ✓ 8,600 structured finance transactions under surveillance, including 4000 RMBS pools, 440 CMBS, 1600 ABS, and 600 CDOs.
  - ✓ 1200 European & 200 Asian structured finance transactions

FitchRatings
KNOW YOUR RISK

www.fitchratings.com

RATINGS SCOPE

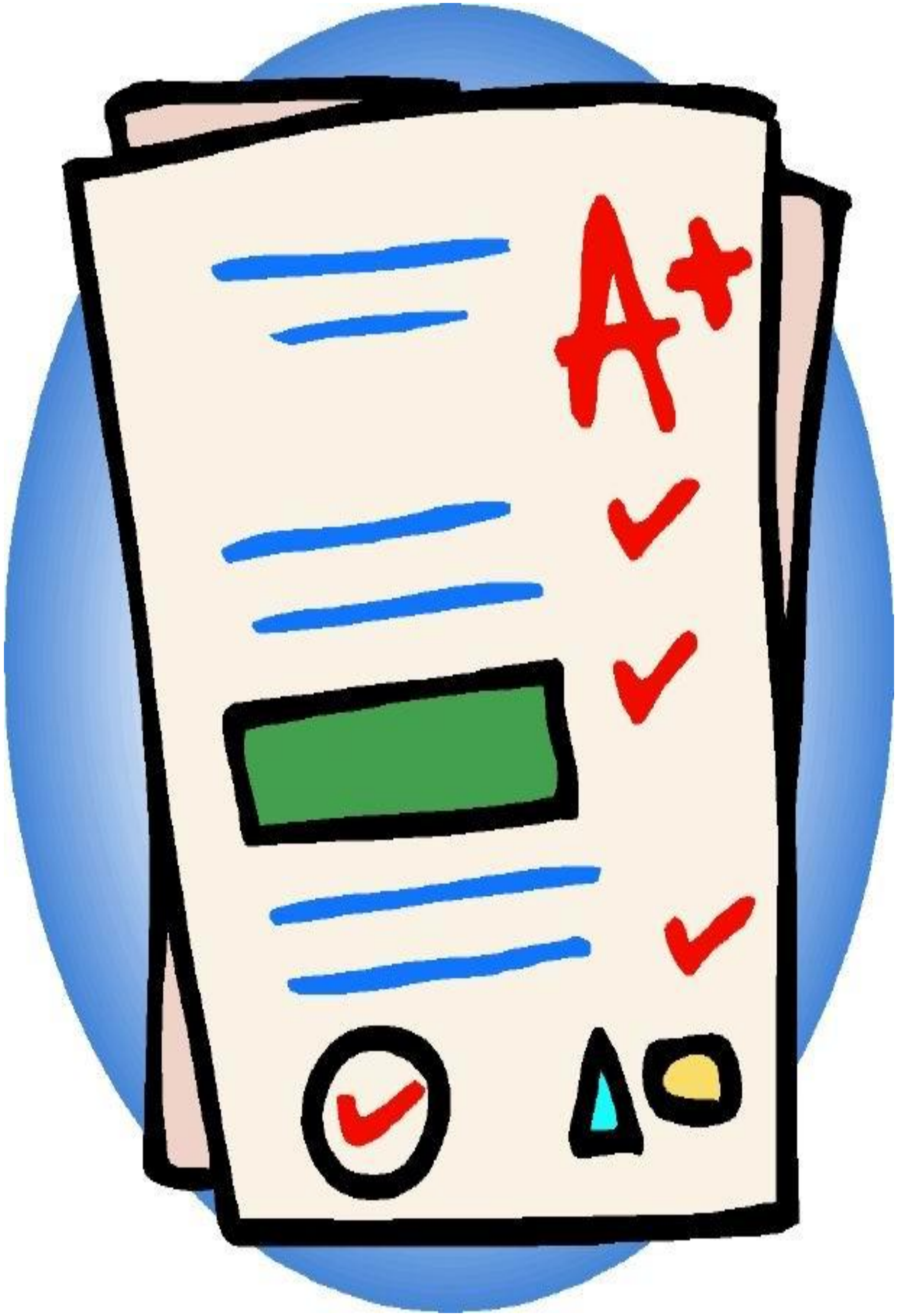
Publicly rated

Privately rated

Credit assessment

Market-Implied ratings

(CDS, Equity, Spread, Price etc.)



RATING ACTIONS

Rating

DEAL STAGE

- Preliminary
- Final
- **P**aid **in** **F**ull (PIF) / Redemption

INDICATORS

- Upgrade, Downgrade
- Affirmation / Confirmation
- Withdrawn

Suffix

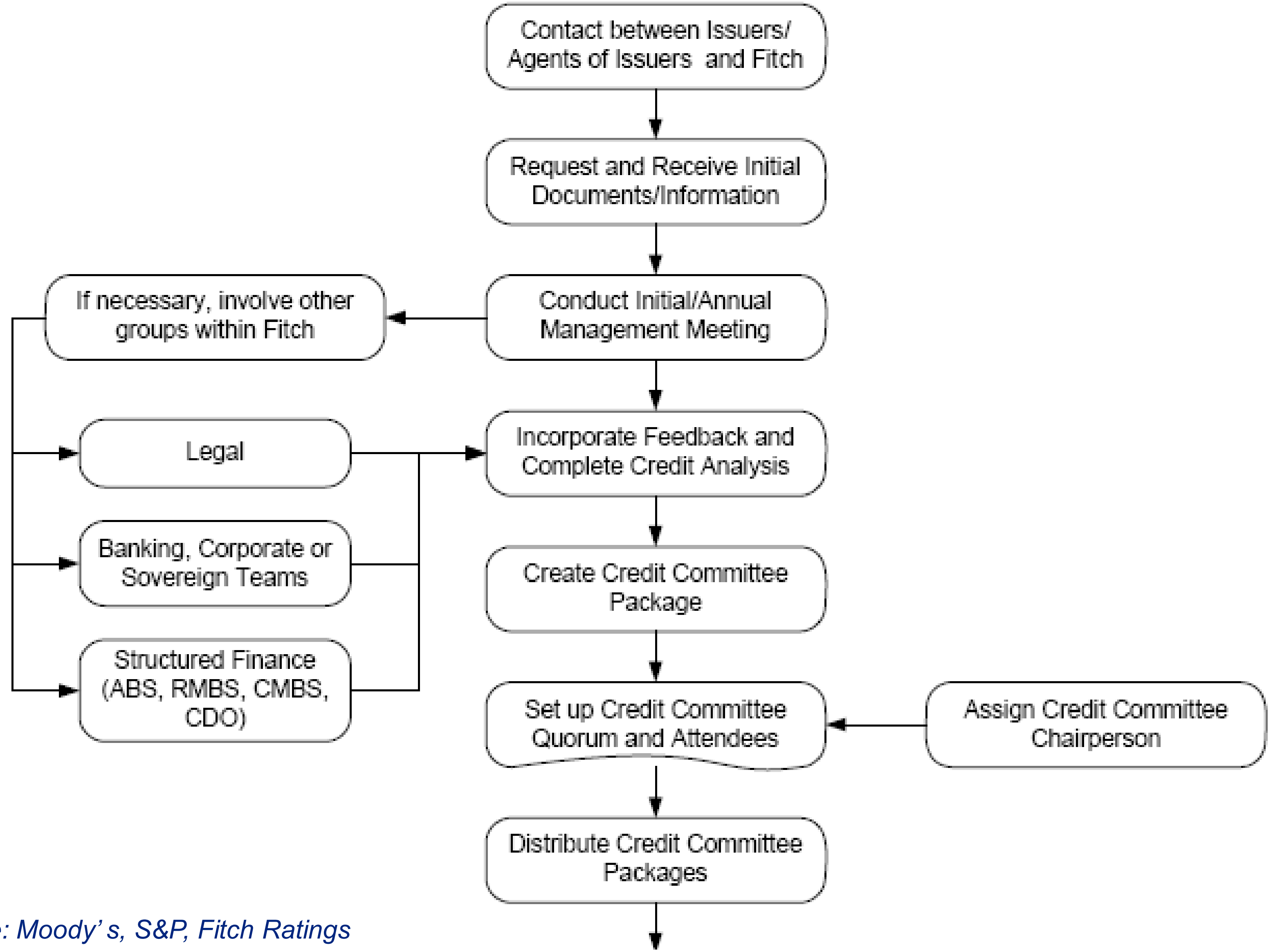
RATING WATCH *(1-6 months)*

- Positive
- Negative
- Evolving / Uncertain

OUTLOOK *(1-2 years)*

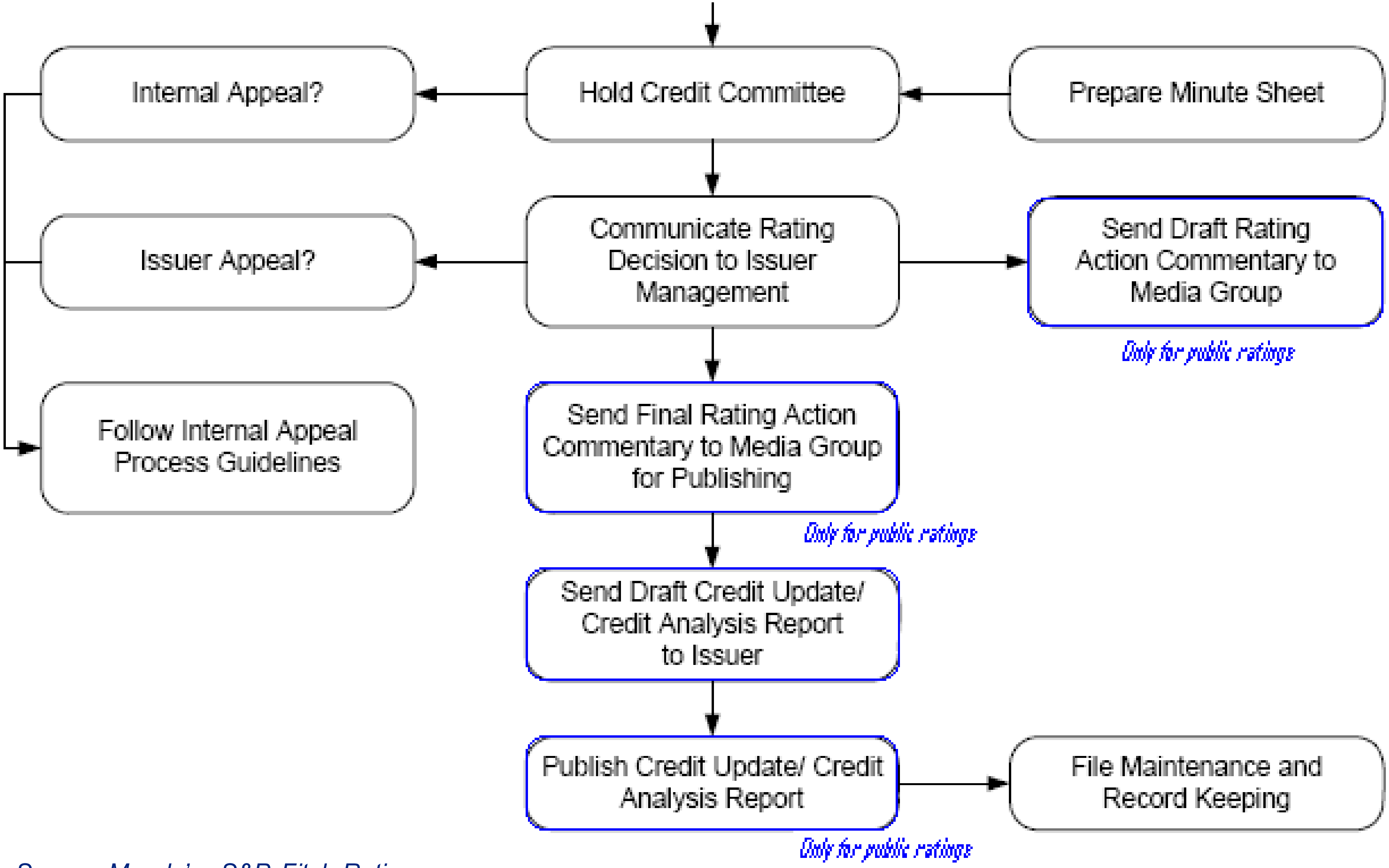
- Positive
- Negative
- Stable

THE RATING PROCESS: A detailed view (Part 1)



Source: Moody's, S&P, Fitch Ratings

THE RATING PROCESS: A detailed view (Part 2)



Source: Moody's, S&P, Fitch Ratings

BENEFITS

To Investors

- **Safety** to investments
- Recognition of **Risk & Returns**
- **Freedom** of investment decisions
- **Wider choice** of investments
- **Dependable credibility** of issuer
- Easy understanding of **investment proposals**
- **Continuous** monitoring (Surveillance)

To the company (issuer)

- Easier to raise **funding**
- Reduced cost of **borrowing**
- Reduced cost of **public issuance (bonds**)
- Ratings help increase **image & reputation**
- Facilitation of **growth**
- Access to **wider investor base**
- **Recognition** of relatively unknown companies

LIMITATIONS

- Non-disclosure of **significant information**
- Static study of present and past historic data **at one particular point in time**
- **Rating is no certificate of soundness** and users of ratings should form an independent view of the meaning of the particular rating
- **Rating may be biased** due to certain views of the lead analysts
- **Rating under unfavourable conditions** which may not always be representative of the true image of the company
- **Differences in rating grades**: split ratings between different rating agencies which may confuse investors

TIMELY ACTIONS and DEFERRAL

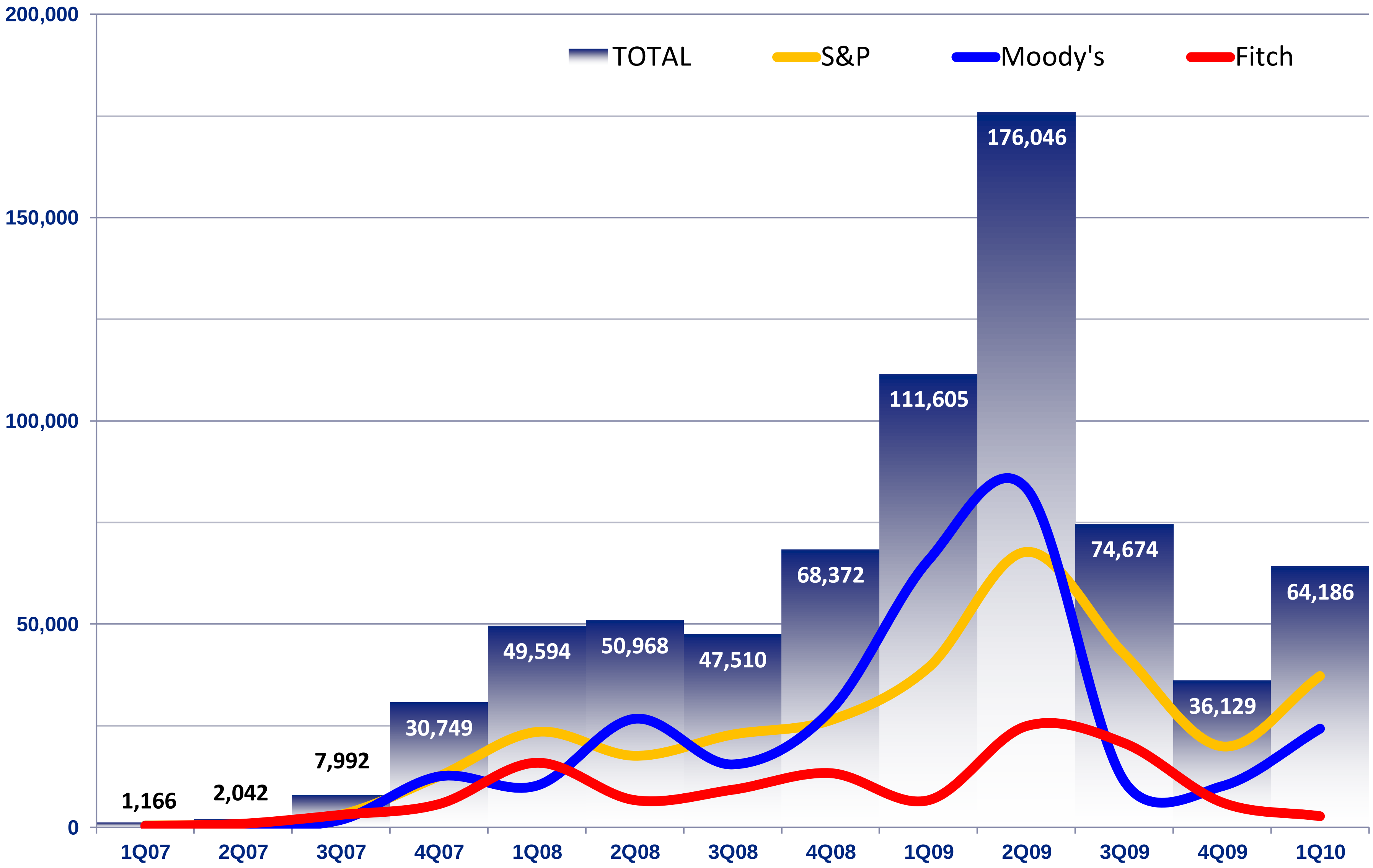
Timeliness of Rating changes

- Process stages to reach rating decisions
- Detection of bond- vs. asset class-specific and/or systemic issues

Bond maturity profile

- Legal final vs. expected maturity
- Life-time ratings (40+ years)
- Timely payment of interest & ultimate payment of principal

GLOBAL SF BOND TRANCHE DOWNGRADES



(Since January 2007 - Source: Bloomberg / RATT function)