The Securitisation Market and the current Financial Crisis

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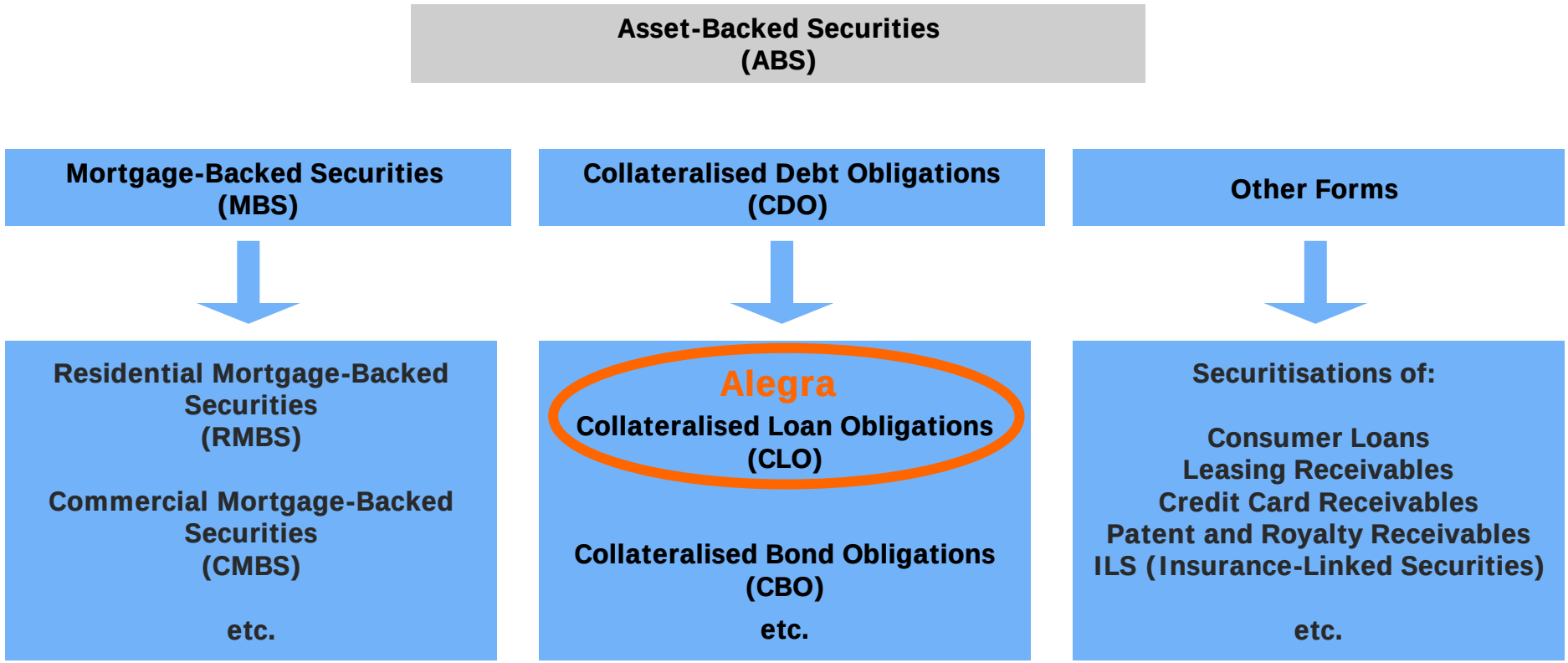
I. Introduction to Securitisation and the ABS Markets

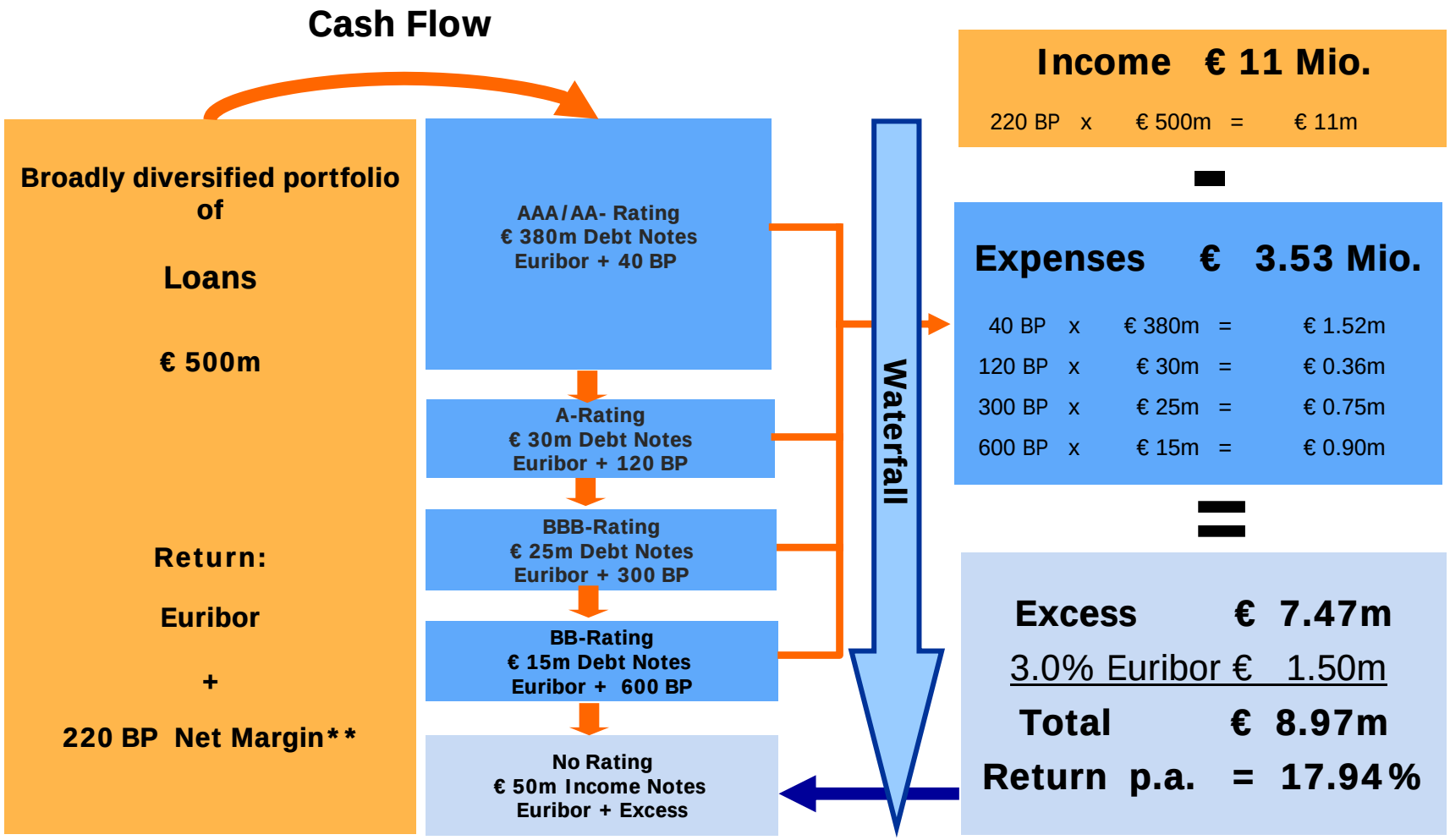
ABS Market - A large universe of various underlying asset classes



Securitisation – What does it mean? (with the help of Wikipedia…)

- **Securitisation** is a structured finance process that distributes risk by aggregating **assets** in a pool (often by selling assets to a **special purpose entity**), then issuing new **securities** backed by the assets and their cash flows. The securities can then be sold to investors.
- In most securitised investment structures, the investors' rights to receive cash flows are divided into **"tranches"** : senior tranche investors have lower risk of default but in return lower interest payments, while junior tranche investors assume a higher risk in return for higher interest; the aim is to create an arbitrage.
- Securitisation is designed to reduce the risk of **bankruptcy** and thereby obtain lower interest rates from potential lenders. The credit quality of securitized debt is non-stationary: if the transaction is properly structured and the pool performs as expected, the credit risk of all tranches of structured debt improves; if improperly structured, the affected tranches may experience credit deterioration and loss.
- If the pool performs poorly, the tranches' value will deteriorate, particularly at risk are first the lowest/most junior rated tranches.
- *Limitation: possible lack of alignment of interest (or adverse selection in insurance jargon)*

How does a Securitisation work ? – Example: Cash Flow CLO*



* Sample calculation

** After deduction of expenses and costs

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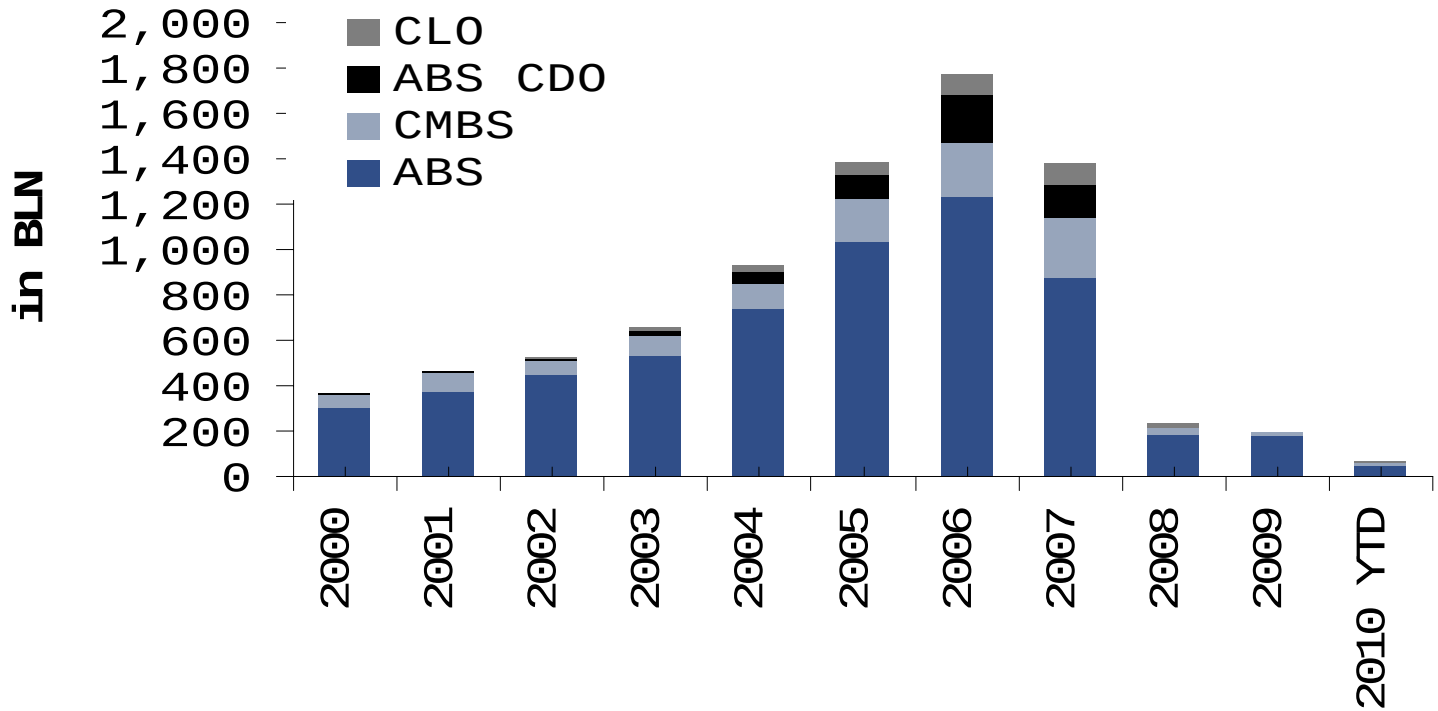
ABS & Securitisation – A HUGE Market



Source: Citibank, in USD bln

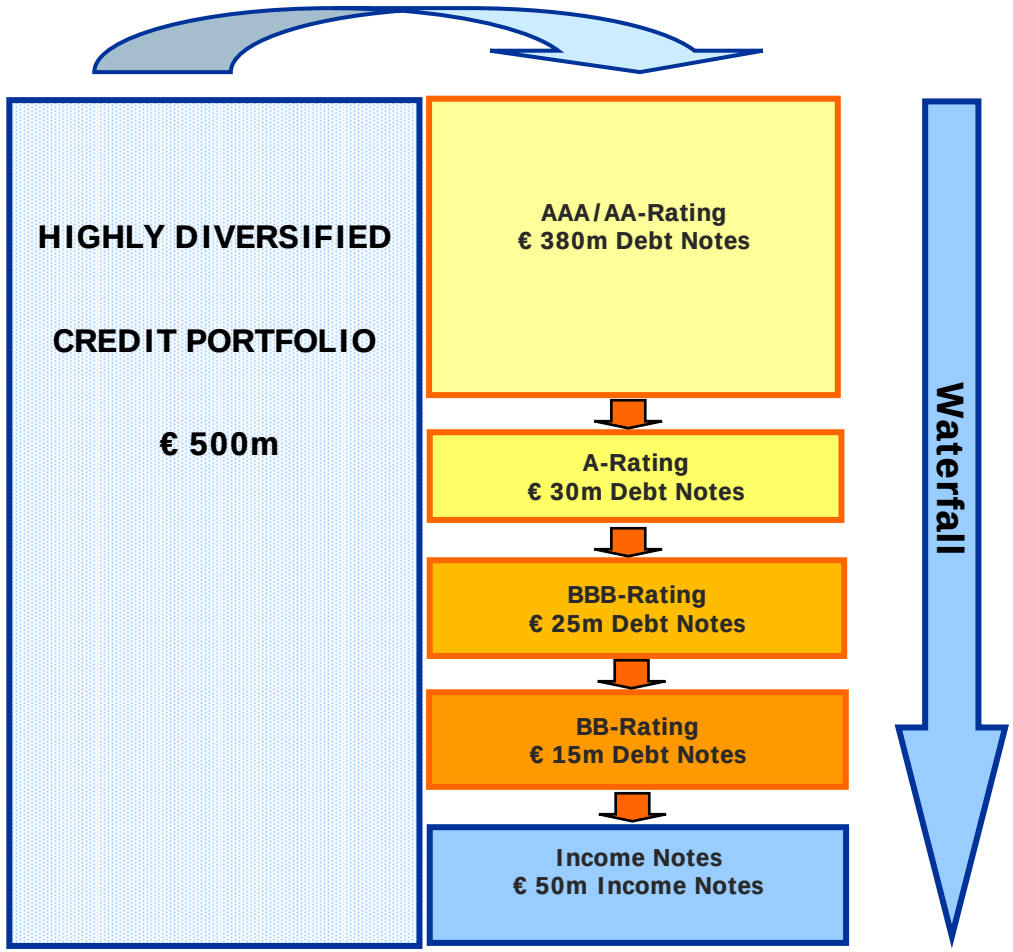
II. Securitisation Technicals - CLOs as an Example

(after all, this is an actuarial audience....)

CLOs - Technicals

- **Securitisation** is a structured finance process that distributes risk by aggregating **assets** in a pool, then issuing new **securities** backed by the assets and their cash flows: creating an Arbitrage vehicle.
- CLOs can be either managed or static.
- The quality of the securities issued can only be as good as the quality of the assets pooled. Many indicators help in following the developments of the pool performances, besides the assessment of the CLO manager (for managed CLOs):
  - IC Tests (Interest Coverage)
  - OC Tests (Over-Collateralisation)
  - WARF (Weighted Avg. Rating Factor)
  - WAS (Weighted Avg. Spread)
  - CCC buckets (% of loans rated CCC by a Rating Agency)
  - Diversity Test

How do Cash Flow CLOs work? A compelling concept if done right



Closed ended structures with locked-in Liability Cost

Strictly follow the „Golden Rules of Financing":

- **Attempt to match maturity of liabilities and assets (no refinancing risk);**
- **Limit any currency or interest rate risk;**
- **Stick to rigid underwriting standards**

Ultimate outcome depends primarily on defaults and recoveries

CLOs - Self-Repairing Structures

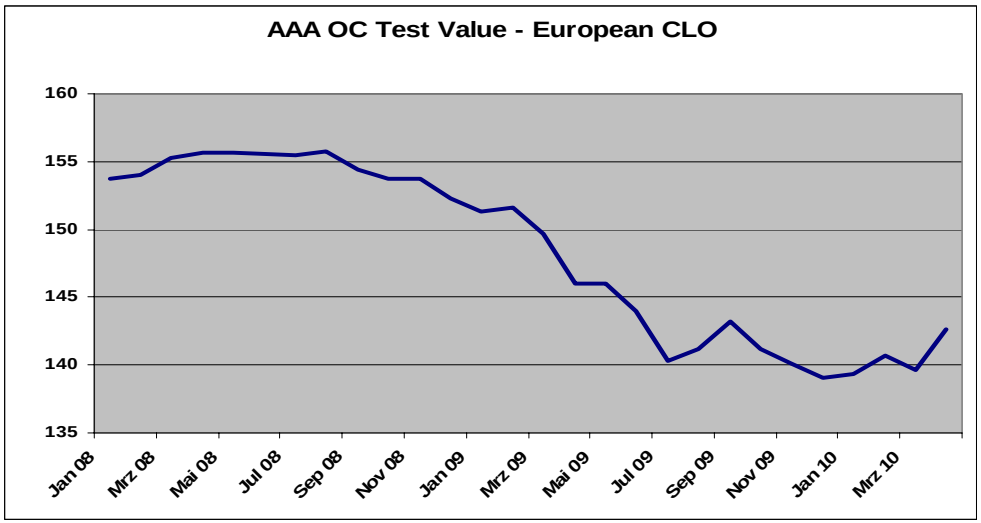
- What is an Over-Collateralisation Test?
- In the example above, the pool starts with €500m of assets. This pool gets reduced by credit losses (defaults net of recoveries), and increased/reduced by asset trading gains/losses (for managed CLOs).
- The original A rated tranche OC Test starts at 121.95% (€500m / €410m).
- The original BB rated tranche OC Test starts at 111.11% (€500m / €450m).
- If the A OC test falls below a threshold (e.g. 110%), no payments in the Waterfall are made to any Notes below; i.e. BBB, BB and Income Notes receive no coupon until the A OC Test is back in compliance.
- If the BB OC test falls below a threshold (e.g. 105%), no payments in the Waterfall are made to any Notes below; i.e. the Income Notes receive no coupon until the BB OC Test is back in compliance.
- The retained cash amounts are used to repay the most senior outstanding Notes (AAA usually).
- In most CLOs, a second BB OC Test (Reinvestment Test) with a higher threshold (e.g. 106.5%) diverts, if failed, cash flows away from the Income Notes to buy more assets.
- AAA, AA and BBB OC Tests usually also exists: the original A rated notes would receive no coupon if the AA test doesn‘t meet it‘s threshold.

CLOs - The CCC Haircut

- An indicator of pool weakness.
- If the percentage of assets rated CCC exceed usually 7.5% (occasionally 5%), the loans in excess of the 7.5% threshold with the lowest market value are accounted for at their market value (or rating agencies recovery rate if lower).
- Example: if the pool of assets has been reduced to €480m and 13.5% of the loans are rated CCC, 6% of the loans will then be accounted for at their market value.
- Example: if the weakest 6% CCC loans have an average value of 45%, then an extra haircut of 0.06 * 0.55 * €480 = €15.84m. is applied.
- Instead of the previous 106.7% (€480/€450), the BB Test value falls to 103.1% and hence below the minimum of 105%, thus not allowing the Income Notes to receive any payment. These cash flows are instead diverted towards repayment of principal of the AAA Notes.
- This extra haircut may also cause the other OC Tests to fail.

CLOs - Event of Default (EOD)

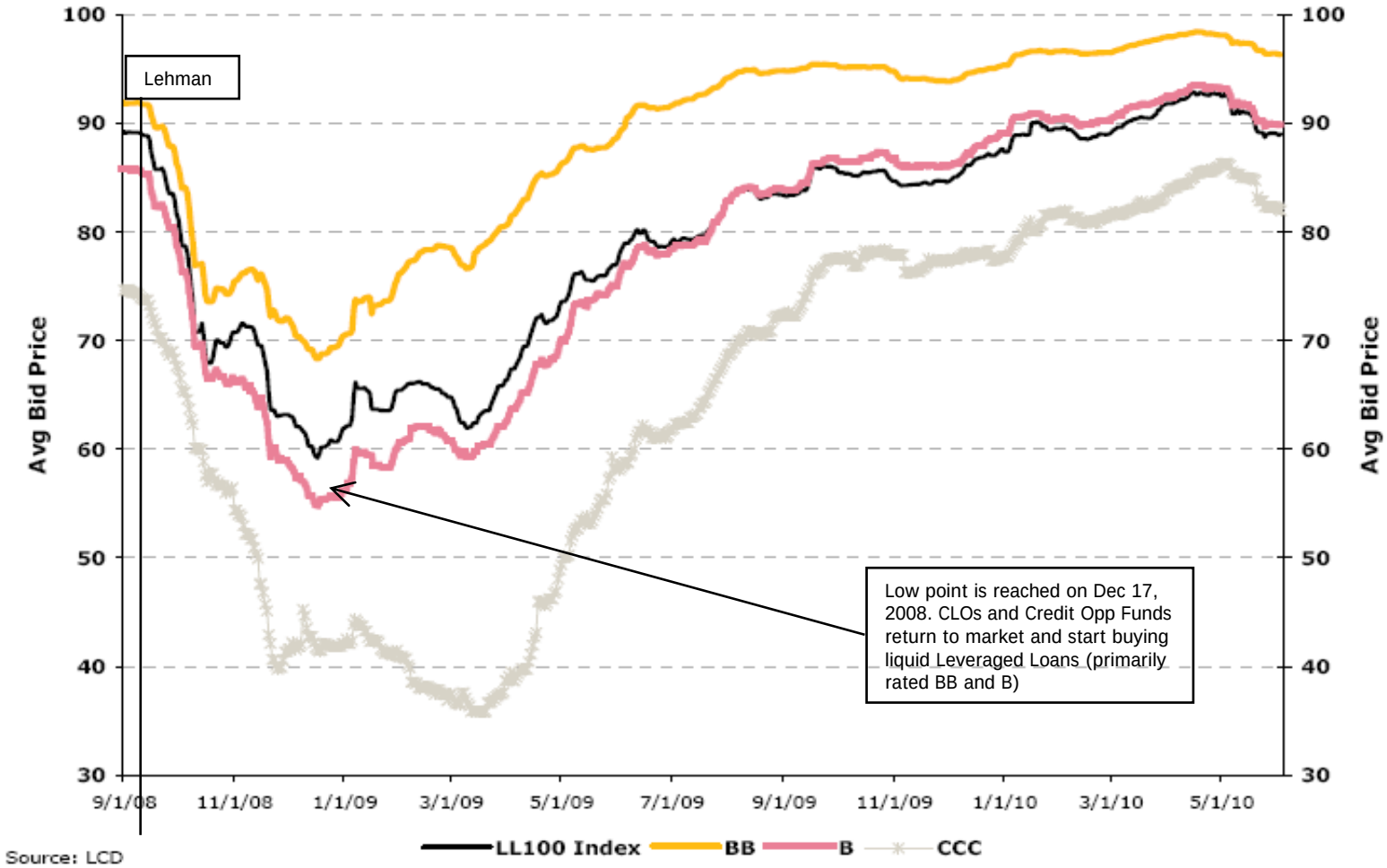
- Language varies from CLO to CLO, close attention to documents (Offering Memorandum) is necessary.
- Quite often though, if the AAA OC Test falls below 100%, the assets of the pool may be liquidated/sold at the direction of the AAA noteholders (consent of the other rated Notes sometimes necessary).
- CCC Haircut may be excluded from the calculation.
- CLOs have always remained comfortably above the required min. OC threshold (cf. graph below, specific data from 1 CLO), but market was concerned in early 2009 that some CLOs could hit an EOD.
- A large number of CLO-Square / ABS CDOs have hit EOD.



CLOs – Modelling Parameters

- An obviously complex process. One possibility: stochastic simulation (MonteCarlo).
- Required main parameters:
  - Default risk of each individual loan asset (transition matrices can be used and historical default rates) and PER PERIOD!!!
  - Recoveries following defaults
  - Correlation between the credit losses (if one asset defaults or deteriorates, how much information does it provide about the credit quality of the other assets)
  - Assumption about the reinvestment profiles of the new assets (most managed CLOs have a reinvestment period)
- Most difficult parts: correlation parameters (inter- and intra-industry and region); reinvestment assumptions; default cycle.

CLOs – Development of Loan Prices during the Crisis



* Prices of European LL Flow-Names comparable with US levels; total market in Europe slightly lower

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CLOs – A Mathematical Contradiction?

- The sum of the par value of CLO tranches is not equal to the market value of the asset pool
- Main explanation: illiquidity of the tranches of a CLO and longer legal maturity
- Leakage through the structure (fees and expenses)
- Structured Finance: buying every tranche of a CLO to liquidate the vehicle is NOT possible as often purchased by „buy and hold“ investors
- Difficulty of price observation, this has been a volatile indicator during the last 2 years

III. Other ABS and CDO of ABS (i.e. CDO Square)

Significant Differences exist among Securitisation Classes

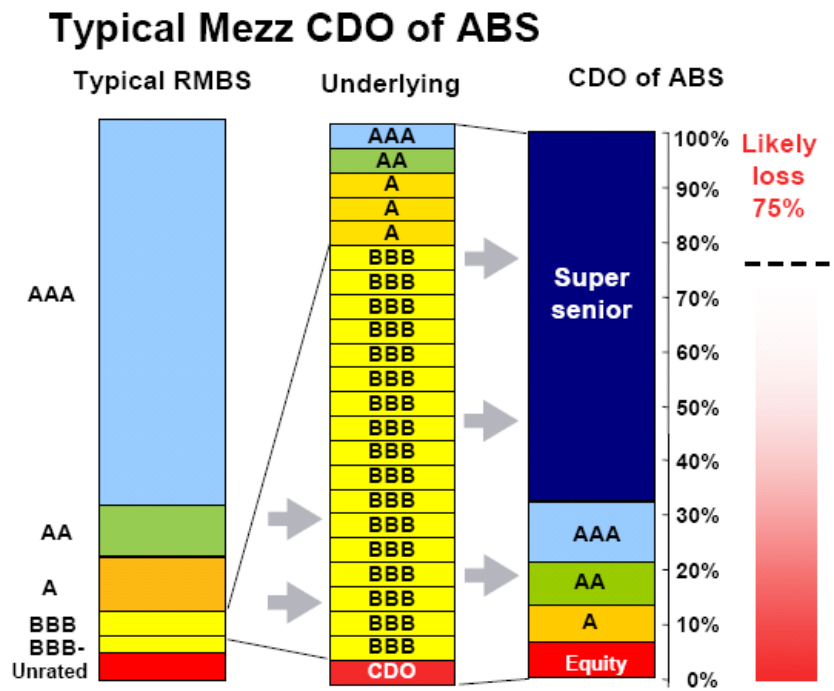
➢ Example: Difference US-Subprime ABS to Leveraged Loan CLOs

Subprime ABS		Leveraged Loan CLO
• „unknown“ Borrower, no underwriting standards • Rating: „Law of large Numbers“ • Low Correlations and independent Regions • Lender securitizes 100 % of the Portfolio • Thin First Loss Tranches	VERY DIFFERENT STRUCTURES	• Monitoring each Borrower • Rating: Credit Quality of actual Portfolio • High Correlations within Industries • Banks retain significant Portions of each loan • Income Notes have size of Tier I Capital of Banks • Defaults lead to Cash-Flow Diversions

Losses have been compounded if the original asset pools has performed poorly

CDO-Square: Double Layers of Leverage with Implications

- **Typical CDOs of ABS have double layers of leverage;**
- All the **risk is concentrated in one industry**;
- If one layer has a systematic problem then the loss to the CDO of ABS is multiplied. This has caused **CATASTROPHIC loss behavior**.



Source: Citi.

This has created some extremely unusual events, e.g. losses have hit some AAA Rated tranches. Too complex structures, highlighted by the shortfalls of Ratings Agencies' models.

Very Different Results, Default Rates much higher for CDO of ABS

S&P Structured Finance Default Rates from mid 2007 to the end of 2009:

	Default Rate
Europe	
ABS	0.1%
CDO	1.5%
CMBS	0.1%
RMBS	0.0%
U.S.	
ABS	0.2%
CDO	12.5%
CMBS	0.3%
RMBS	4.0%

Source: Standard & Poor's

Note: CLOs Default Rates very low

Who is to blame? (in no particular order)

- The subprime meltdown started the financial crisis around mid 2007 and culminated with the default of Lehman Brothers in September 2008:
  - Subprime Borrowers themselves
  - Intermediaries / Real estate Agents
  - Rating Agencies
  - Investment Banks
  - Central Banks
  - Regulators
  - Investors
  - Others?

IV. Current Situation

ABS Markets - Still in Disarray

- Normality is far from being back:
- Primary market still almost non-existent (cf. size of the market graph, page 7)
- Secondary market spreads still at extremely wide levels
- Large part of senior bonds are „financed by“/ deposited with Central Banks
- „Bad“ banks are still holding lots of paper
- Plenty investors have disappeared entirely (or are sitting on the sidelines)

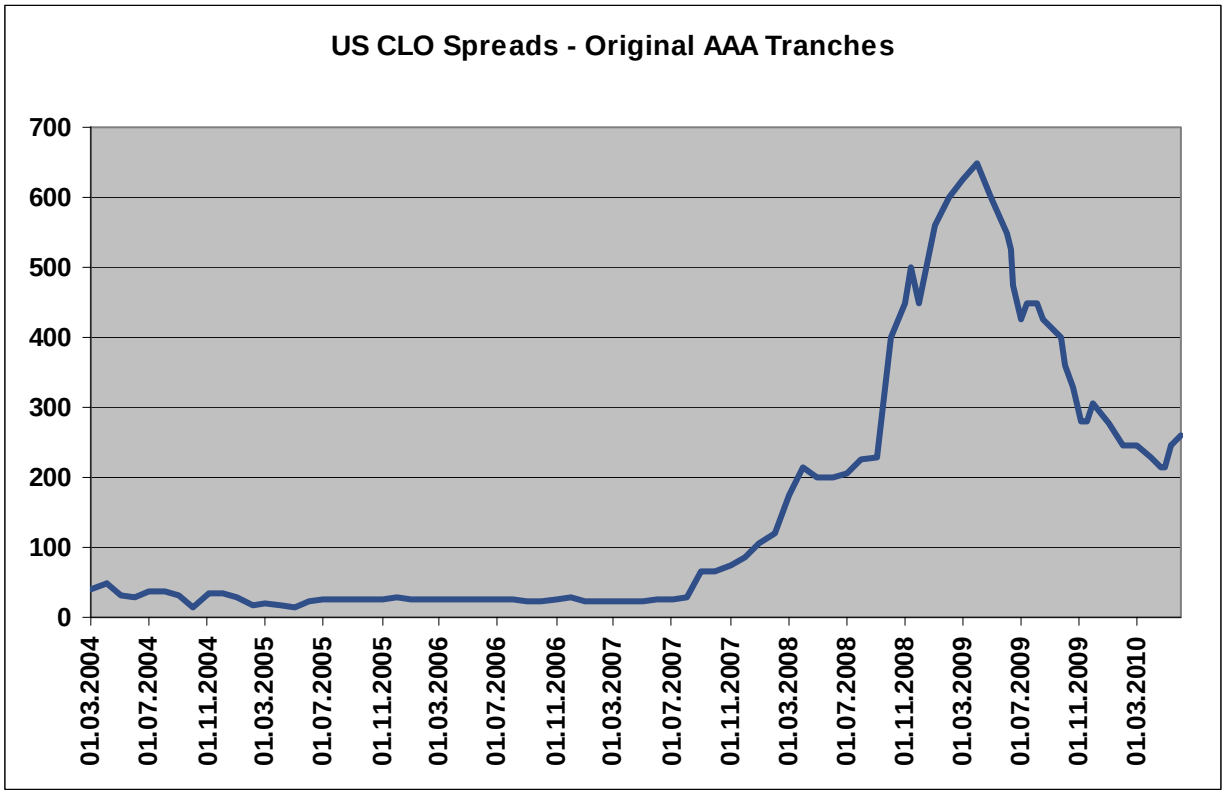
ABS Markets – Unresolved Issues

- Open Issue: Regulatory (and Accounting) changes still discussed
  - Example: How to better align the interests of all parties, including the special purpose vehicle sponsor / originator

- Open Issue: Role of the Rating Agencies
  - Model / assumptions / parameters have been modified
  - Has led to unprecented downgrades, mostly in 2009
  - What models will be used going forward?
  - What subordination will be required for a specific rating?

- New issuance of securitisation products would allow some credit markets (e.g. Mortgages) to „normalise“

CLO Market: From Disarray (partially due to contagion factors) to Recovery – Development of AAA Bond Spreads

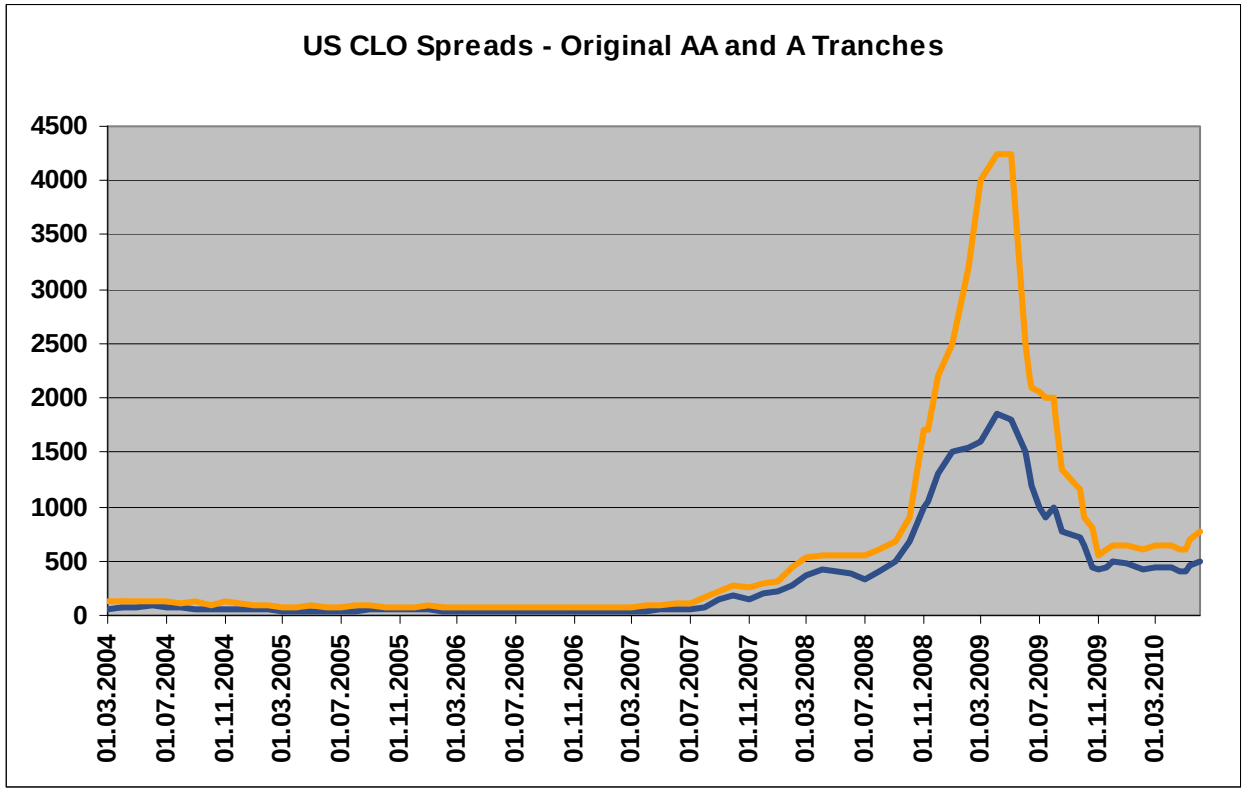


Source: Citibank

Such unusual Graphs are found throughout the ABS Universe (Credit Cards, Student Loans, etc…)

Opportunity: At the height of the crisis, AAA investors could lock in „once-in-a-lifetime“ returns !!!

CLO Market: From Disarray (partially due to contagion factors) to Recovery – Development of AA and A Bond Spreads



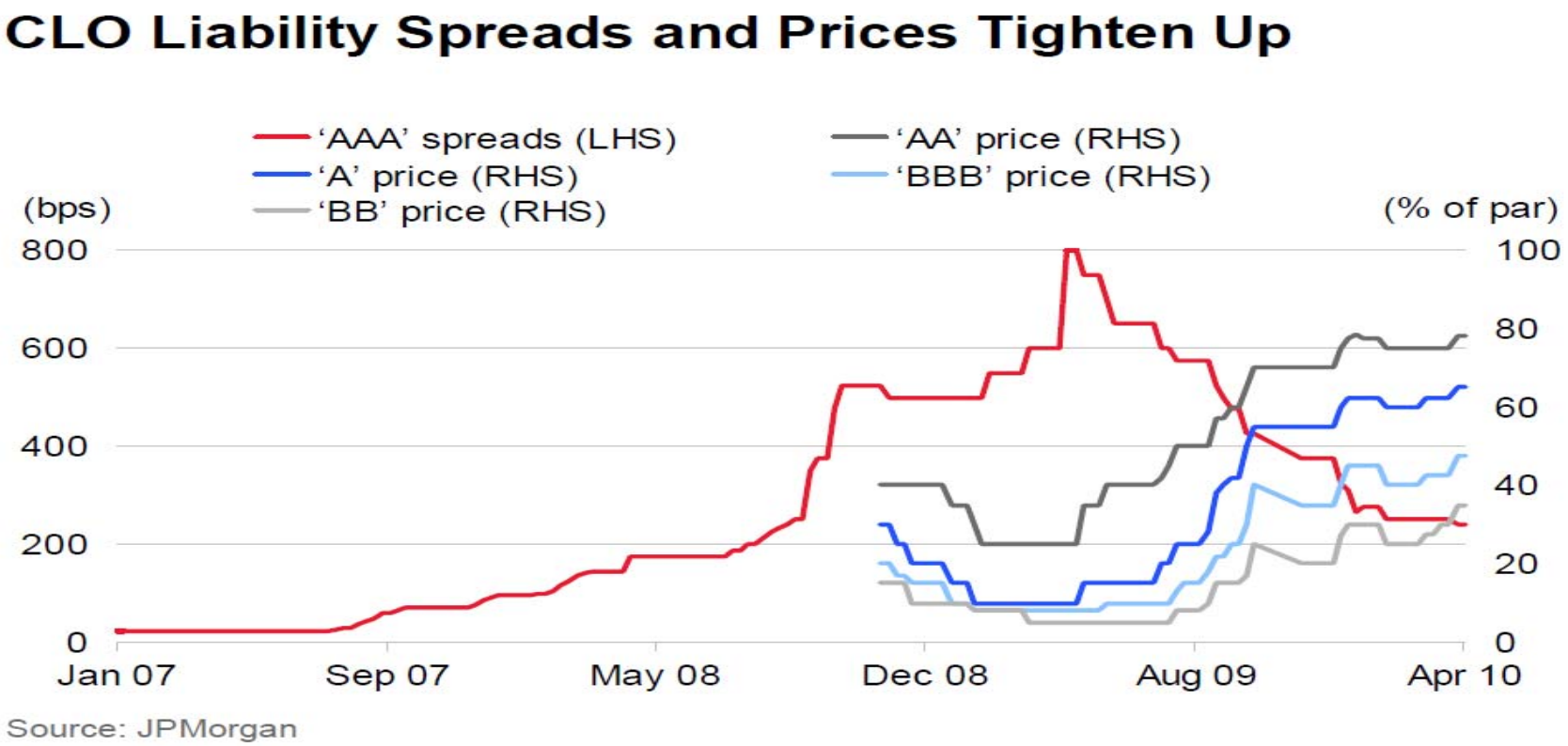
Source: Citibank

In 1H 2009:

- AA Tranches of CLOs could be purchased for 25% to 40% of Original Par

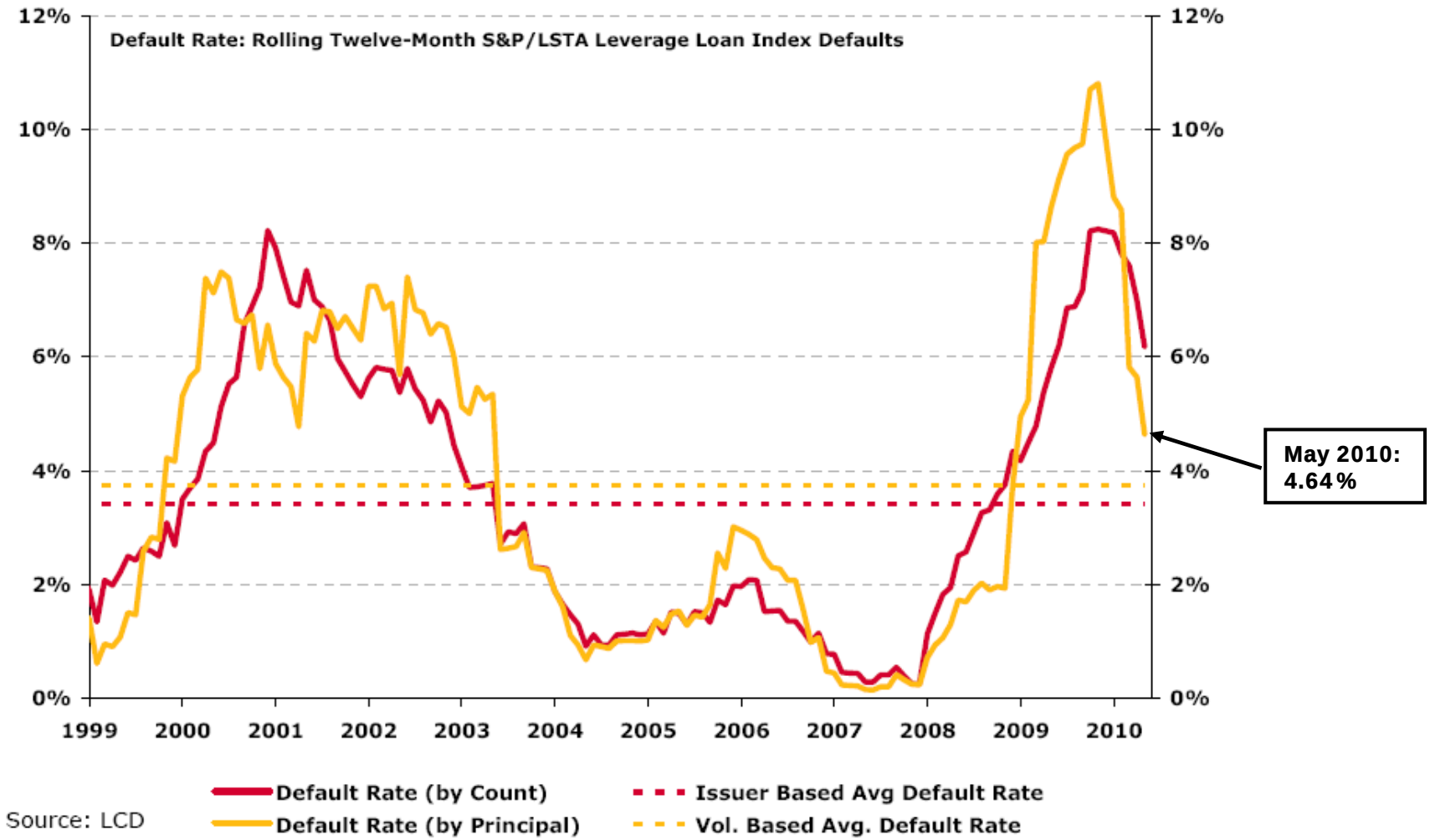
- A Tranches of CLOs could be purchased for 10% to 20% of Original Par

CLOs – Market Value Development of all Rated Bonds



Most market participants agree that Original AA and A rated CLO tranches will be repaid at Par

CLO Recovery: US Loan Defaults falling rapidly since December 2009



Source: LCD

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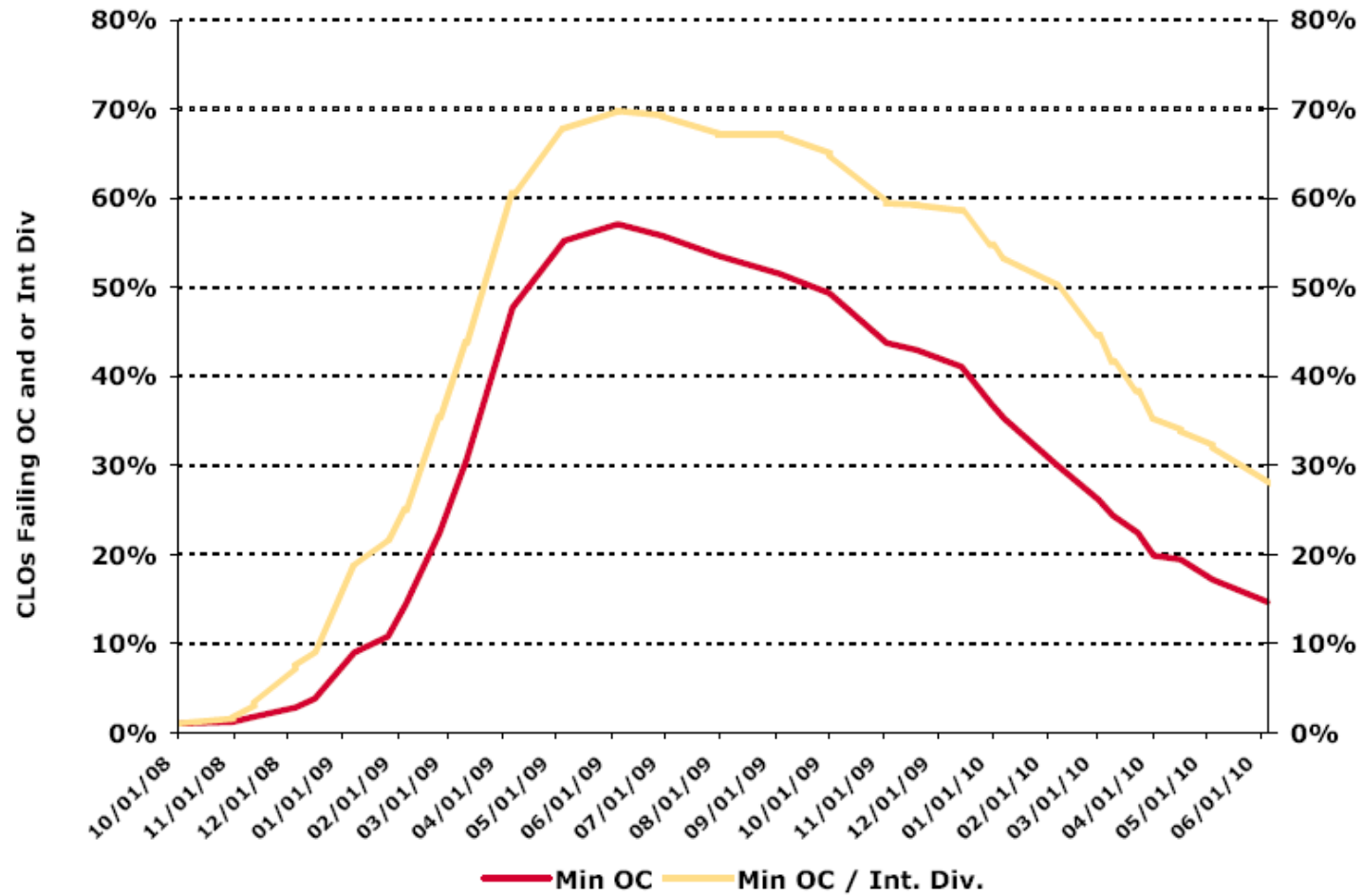
CLO Recovery: Significantly less CLOs violate min. OC Coverage Test*



Source: Intex, Wells Fargo Securities, LLC

*US CLO transactions

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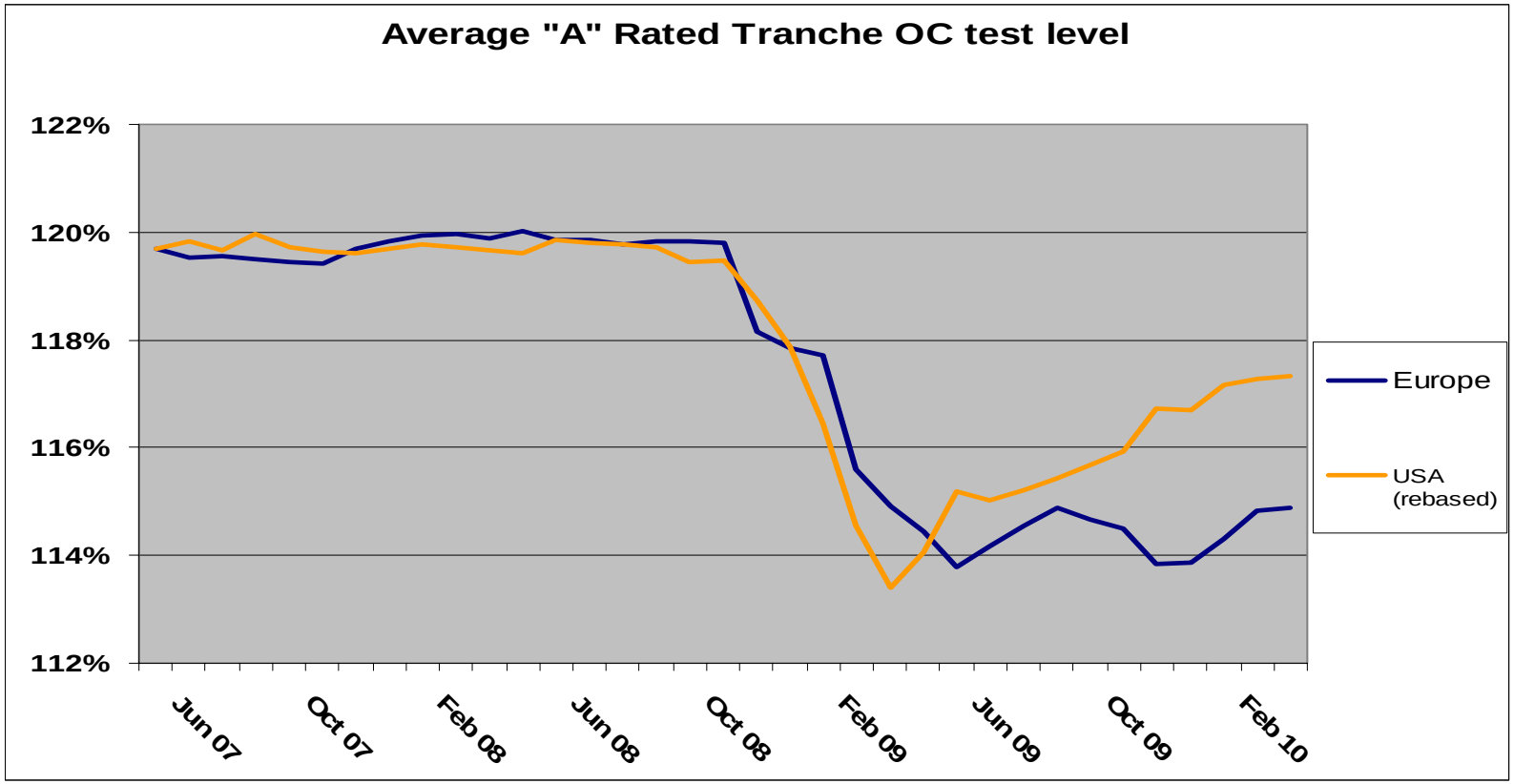
CLO Performance throughout the Crisis – OC Test



Original „Single A“ rated tranches of European CLOs have always kept at least 13 points over-collateralisation headroom.

The repair mechanism of CLOs is clearly working … (cf. previous slide)

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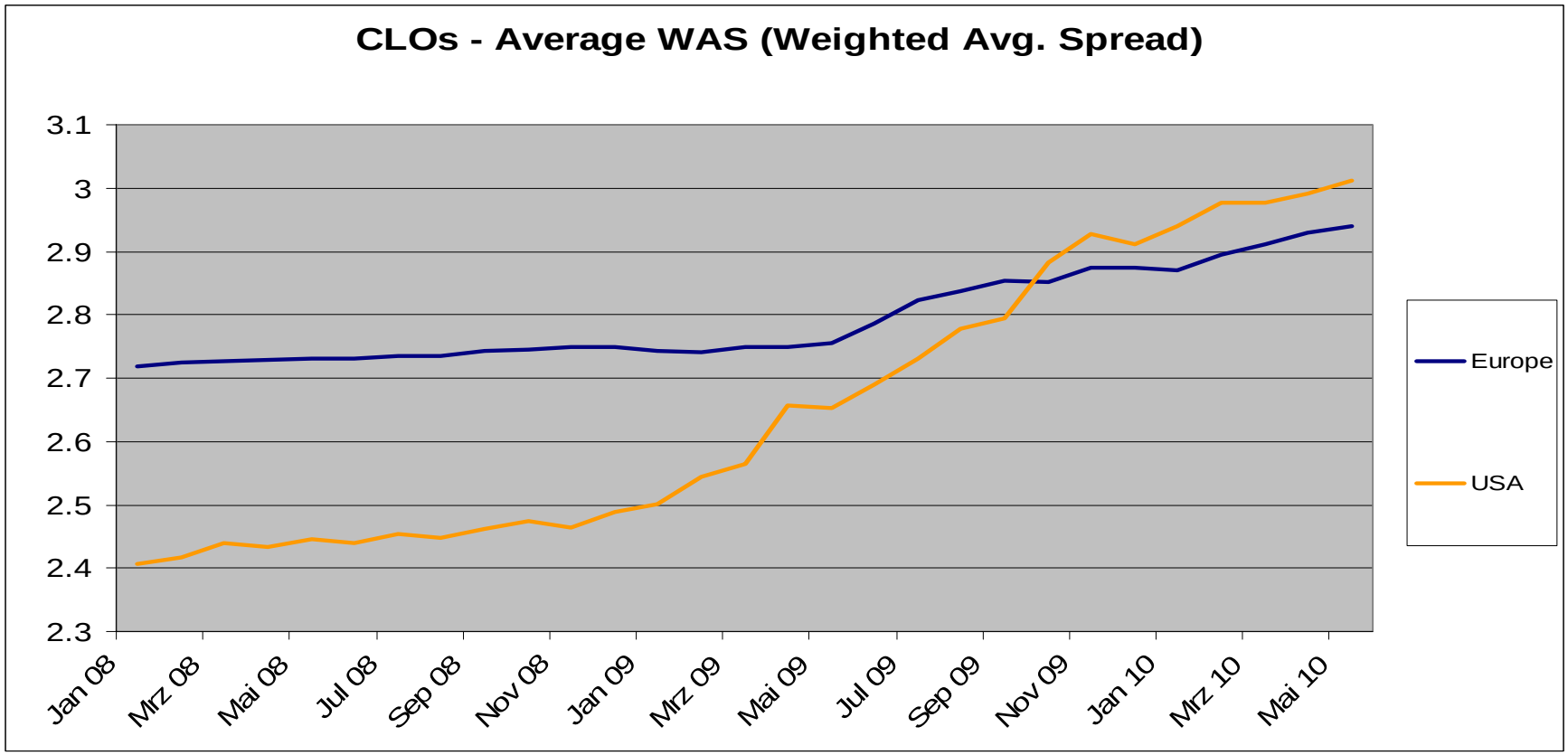
CLO Performance throughout the Crisis - WAS



The increased avg. spreads generate additional excess cash flow, i.e. the arbitrage has been increased, and/or CLOs are able to repair failing OC tests faster

Opportunity – Purchase of Original AA-Rated CLO Tranches

	Stable Euribor (1%)	Increasing Euribor
Purchase Price	-72	-72
6 Months	0.7	0.7
12 Months	0.7	0.7
18 Months	0.7	0.7
24 Months	0.7	0.7
30 Months	0.7	1.2
36 Months	0.7	1.2
42 Months	0.7	1.2
48 Months	0.7	1.2
54 Months	0.7	1.7
60 Months	0.7	1.7
66 Months	0.7	1.7
72 Months	100.7	101.7
IRR per Period	3.6%	4.2%
Yearly IRR	7.4%	8.5%

Opportunity to lock in spreads in excess of 6%; protection against interest rate increases (floating rate bonds)
Consideration: current ratings usually either A or BBB; most of the returns are „back ended“

Opportunity – Purchase of Original A-Rated CLO Tranches

	Stable Euribor (1%)	Increasing Euribor
Purchase Price	-58	-58
6 Months	0.8	0.8
12 Months	0.8	0.8
18 Months	0.8	0.8
24 Months	0.8	0.8
30 Months	0.8	1.3
36 Months	0.8	1.3
42 Months	0.8	1.3
48 Months	0.8	1.3
54 Months	0.8	1.8
60 Months	0.8	1.8
66 Months	0.8	1.8
72 Months	100.8	101.8
IRR per Period	5.7%	6.3%
Yearly IRR	11.8%	13.0%

Opportunity to lock in spreads in excess of 10%; protection against interest rate increases (floating rate bonds)
Consideration: current ratings usually BB; most of the returns are „back ended“

V. Alegra Capital - Highlights

About Alegra Capital

- Alegra Capital is one of the **leading** managers of **CLO Debt and Equity** in Europe;
- Alegra Capital is a **totally independent** provider of Asset Management services in the Structured Credit area in Europe. Our „No ties with any Investment Bank“ policy translates into a wide network of contacts with all major firms and ensures flexibility and freedom of choice for the right investments;
- Nominal approx. **EUR 400 Mio.** of CLO Debt and Equity Notes under management in 6 Funds and 2 Index Certificates:

  CLO Equity Funds
  Alegra ABS I (Euro) Fund
  Alegra ABS Two (Euro) Fund
  PvB (CH) ABS Fund (USD)
  Alegra Value 2008 (EUR) Fund – Closed-ended (Funding Sept / Dec 2008)
  Alegra Value 2009 (EUR) Fund – Closed-ended (Funding Jul/Dec 2009)

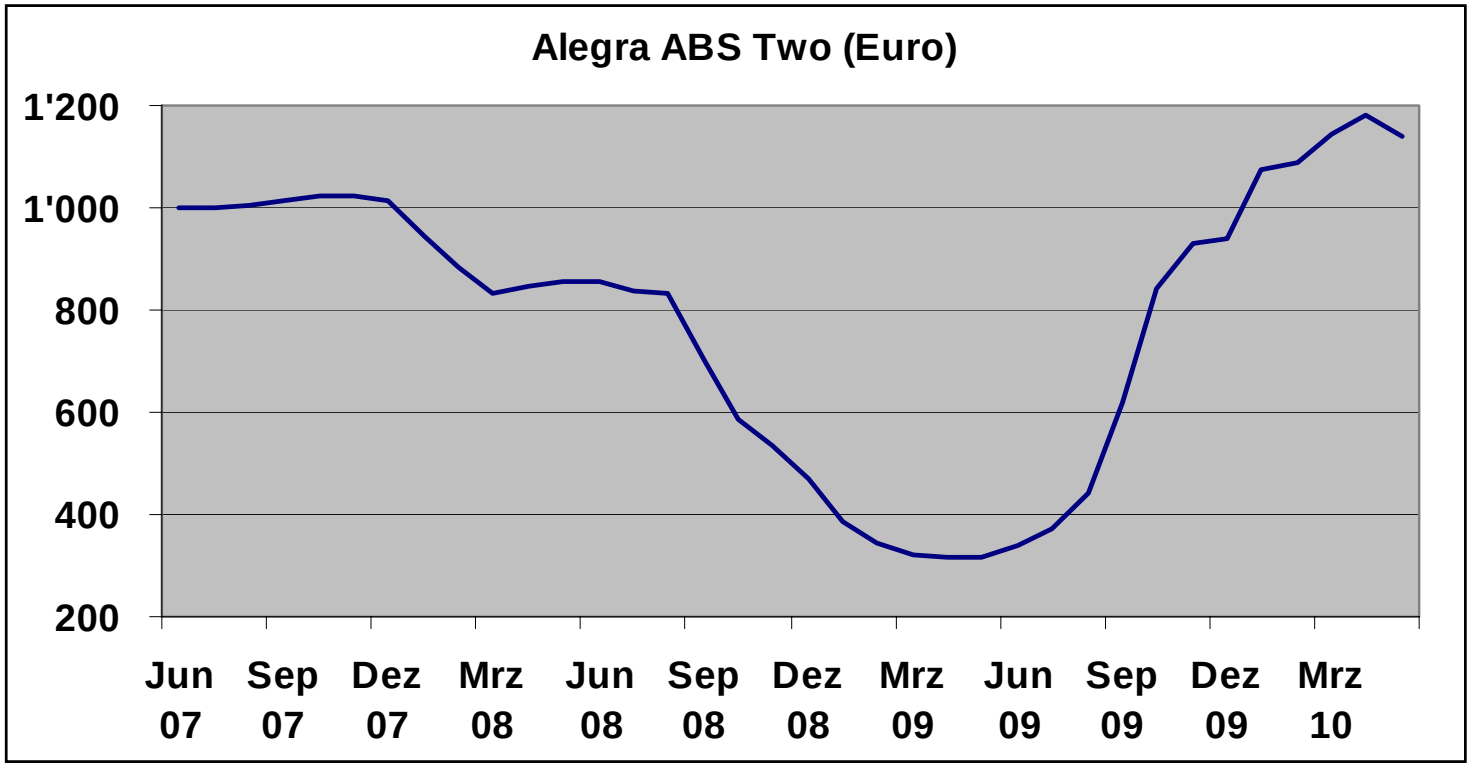
- CLO Mezzanine Funds
  Alegra Mezzanine ABS (Euro) Fund*

  Alegra Index Certificates (Commerzbank)

- Staff: 4 Partners, 1 Portfolio Administrator, 1 Office Manager;
- Fitch considers the Risk Management System used by Alegra Capital as „Best in Class“.

* For qualified investors only

Putting it all together – Alegra ABS Two (Euro) Fund Performance*



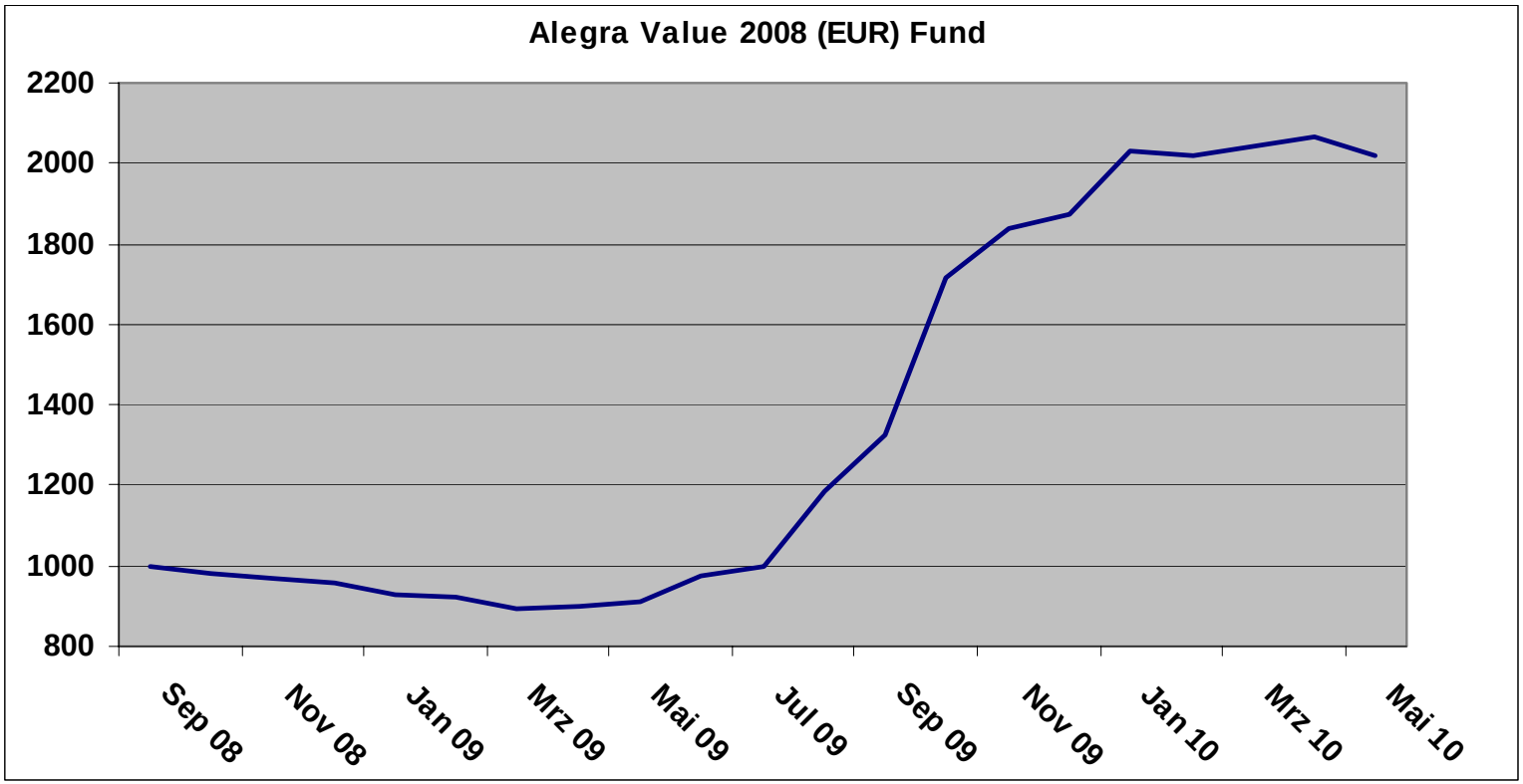
The Fund was mostly invested in „BB“ and Income Notes tranches until 2009

Large unrealised „mark-to-market“-losses accumulated in Q4 2008 and Q1 2009

The Fund was able to use coupons from BB and Income Notes to buy AA, A and BBB Notes during H1 2009 and realize significant gains on these bonds since then

* Price per share in EUR, monthly official NAVs

Putting it all together – Alegra Value 2008 (EUR) Fund Performance*



Lower Risk: This Fund has invested mostly in Investment Grade Tranches of CLOs

Closed-Ended Fund: cannot accept new subscriptions

* Price per share in EUR, quarterly official NAVs, monthly Alegra NAV estimates

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