

Regulation of Credit Derivatives Markets – Lessons from Futures Markets

FZSE Workshop
Coping with the Financial Crisis
Potsdam, June 24, 2010

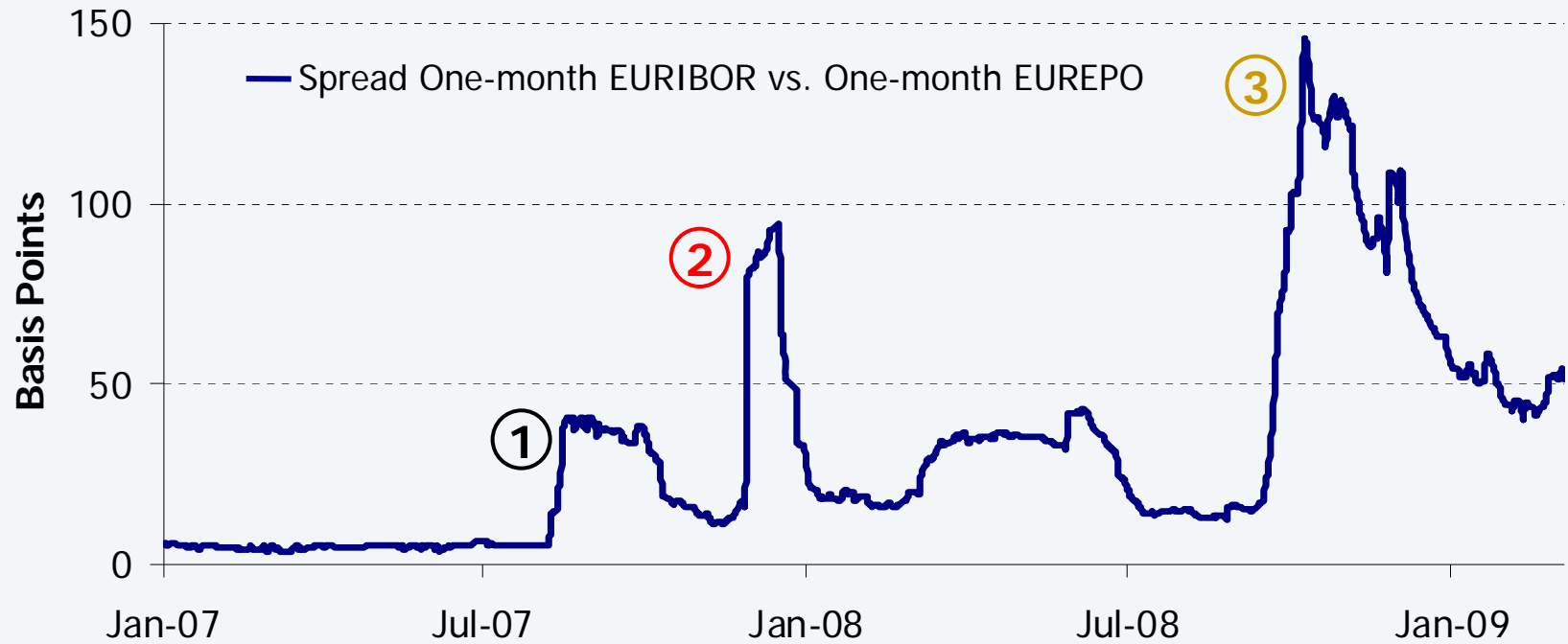
Prof. Dr. Peter Reichling
Forschungszentrum für Sparkassenentwicklung
Otto-von-Guericke University Magdeburg

Agenda

- ① **Some Pieces of the Financial Crisis Puzzle**
- ② **The Toxic Securities**
- ③ **Regulatory Framework on Futures Markets**
- ④ **Summary**

1 Some Pieces of the Financial Crisis Puzzle

Interbank Credit Spread



(1) Aug. 2007: IKB / Sachsen LB

(2) Nov. 2007: Large banks had to write off billions

(3) Sept. 2008: Lehman Brothers / American International /
Washington Mutual / Hypo Real Estate

1 Some Pieces of the Financial Crisis Puzzle

- **EURIBOR** (LIBOR / FIBOR) was considered as the proxy of the **risk-free return** for decades (credit spread amounted to only a few basis points)
- During the financial crisis (“crisis of confidence”), the **credit spread** (EURIBOR compared to EUREPO) reached considerably more than 100 basis points
- Refinancing on EURIBOR basis can be quite **expensive**
- On the deposit side, by now, interest is frequently paid based on the ECB main refinancing rate
- Borrowers question the EURIBOR basis for floating-rate loans (and swaps)

1 Some Pieces of the Financial Crisis Puzzle

Stock Volatility



(1) Aug. 2007: IKB / Sachsen LB

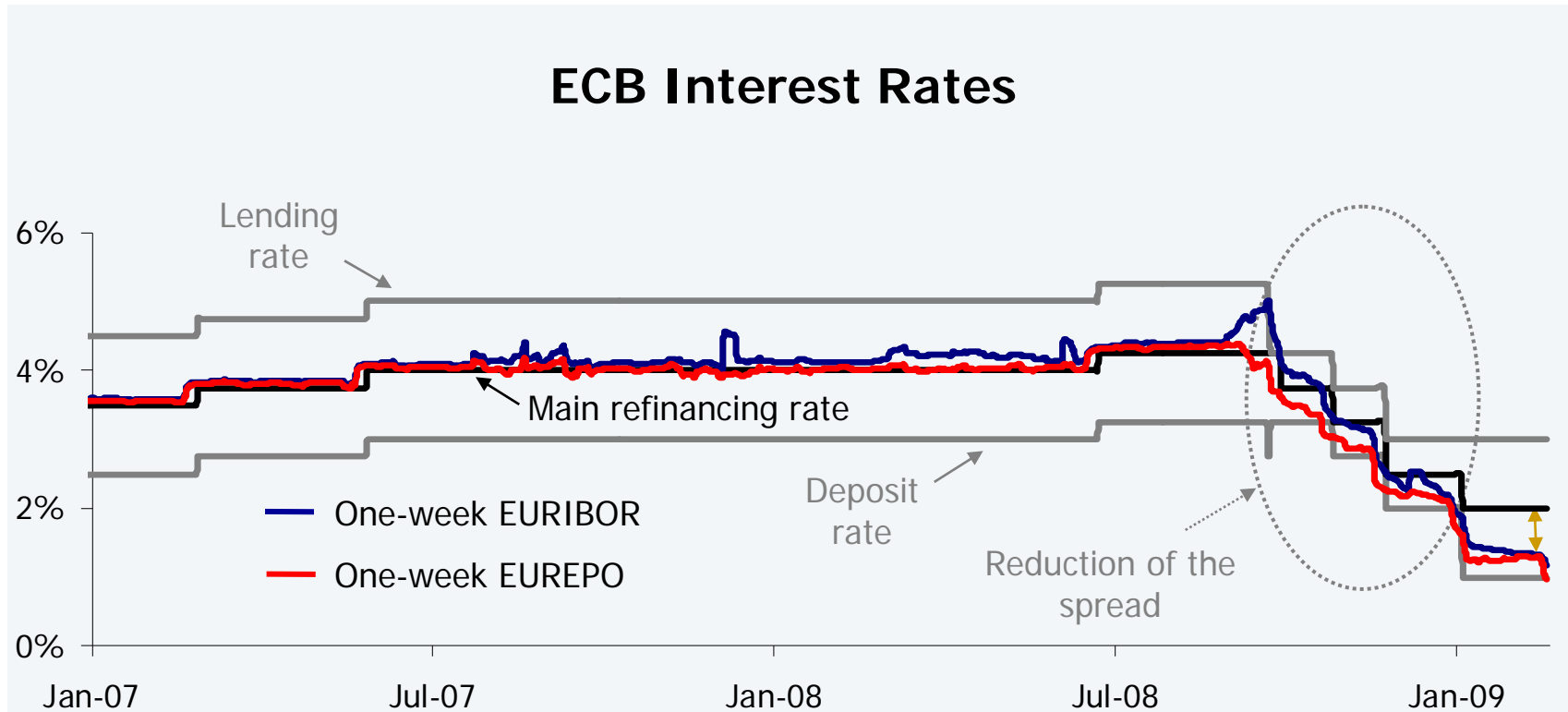
(2) Jan. 2008: On the "black Monday" (Jan. 21, 2008), the DAX dropped by more than 7%

(3) Sept. 2008: Hypo Real Estate needs government aid / Lehman Brothers

1 Some Pieces of the Financial Crisis Puzzle

- Crisis of confidence is reflected by increased **risk aversion** (compare burst of dot.com bubble)
- With higher risk aversion, the demanded **risk premium** (cost of capital) increases
- Higher risk premia result in **lower prices**
- Additionally, **increasing volatilities** during crash periods boost risk premia
- With higher risk, **hedging** becomes more expensive (option prices increase with rising volatility)

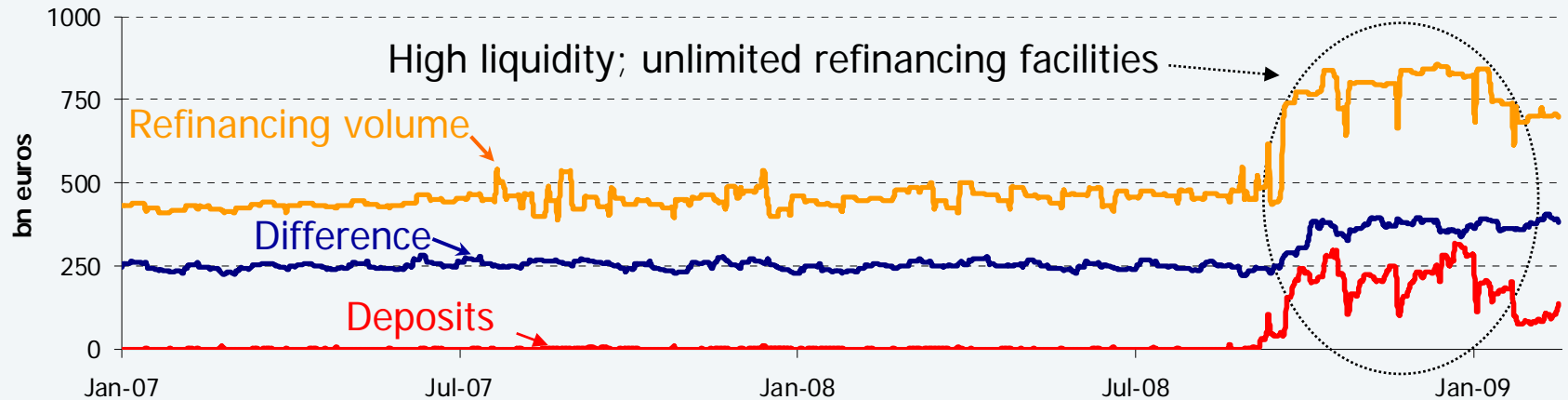
1 Some Pieces of the Financial Crisis Puzzle



- At first, interbank rates increased
- However, ECB interest rate cuts affected interbank rates

1 Some Pieces of the Financial Crisis Puzzle

ECB Refinancing Facilities



- Confidence crisis on the interbank market and ECB interventions led to increased ECB refinancing
 - At the same time, deposits in the ECB rose as well
- ➔ ECB partially took over interbank money market

1 Some Pieces of the Financial Crisis Puzzle

- Increased deposits and borrowing from ECB show that ECB replaced the illiquid interbank money market (**“credit crunch”**)
- Partly, banks invested money at ECB at **unfavorable conditions** instead of investing on the more favorable interbank money market
- In addition, low liquidity on the swap market (in association with increased credit spreads) resulted in the fact, that banks could not reach their preferred **risk position**

1 Some Pieces of the Financial Crisis Puzzle

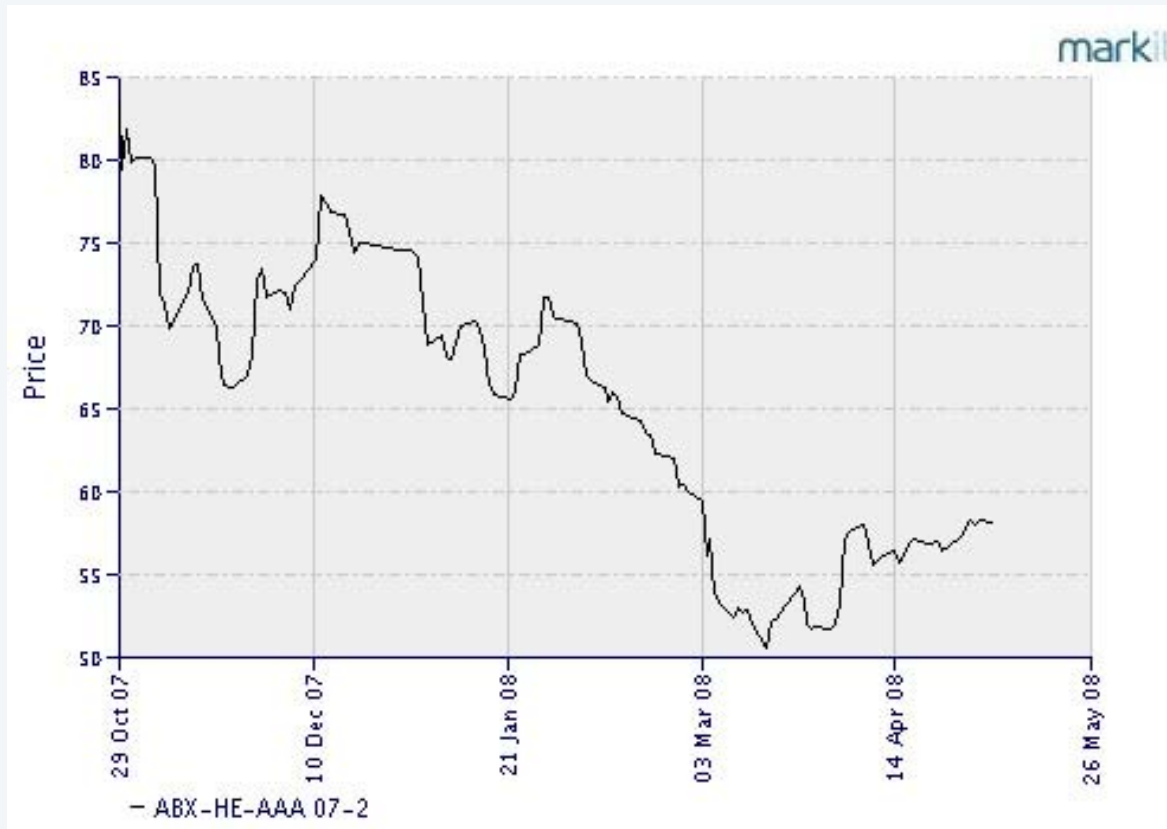
- Due to low liquidity on the interbank money market, the **increase in money supply** – induced by ECB – did not (yet) reach the credit service sector
- With a recovery of the interbank money market, the **money multiplier** takes effect
- An increase in money supply and a concurrent decrease of goods and services produced admit mid-term **inflation expectations** (that are, however, up to now not priced in the term structure of interest rates)

Agenda

- ① **Some Pieces of the Financial Crisis Puzzle**
- ② **The Toxic Securities**
- ③ **Regulatory Framework on Futures Markets**
- ④ **Summary**

2 The Toxic Securities

Development of ABX.HE



ABX.HE represents a category of indexes that reflects the price development of subprime mortgage-backed securities. ABX.HE is a product of MARKIT and exists since 2006.

2 The Toxic Securities

Impairment Rates

Table: Impairment rates for all observations, per rating category and and per asset portfolio type, 1997-2007

Year	All	Aaa-A	Baa	Ba	B	Caa	ABS	CDO	HEL	MBS
1997	1.01%	0.00%	2.94%	17.86%	30.00%	0.00%	0.00%	0.00%	6.19%	0.57%
1998	0.87%	0.21%	4.35%	12.50%	9.09%	0.00%	0.19%	0.00%	6.15%	0.00%
1999	1.86%	0.30%	7.87%	5.56%	32.14%	75.00%	0.53%	0.00%	6.65%	0.92%
2000	1.35%	0.11%	0.46%	7.92%	9.43%	63.64%	1.17%	3.41%	2.34%	0.36%
2001	1.79%	0.24%	4.80%	7.14%	18.82%	26.67%	1.55%	7.36%	0.63%	0.13%
2002	3.45%	0.30%	4.74%	27.78%	30.23%	60.00%	4.16%	12.70%	0.52%	0.64%
2003	2.25%	0.18%	4.10%	14.47%	29.55%	36.54%	3.97%	6.38%	0.60%	0.71%
2004	2.10%	0.46%	2.35%	10.63%	19.63%	57.78%	4.64%	4.03%	0.18%	0.99%
2005	0.76%	0.01%	0.46%	4.05%	15.57%	39.08%	0.68%	2.36%	0.31%	1.24%
2006	0.60%	0.00%	0.30%	1.88%	13.97%	53.26%	0.89%	1.15%	0.20%	0.87%
2007	6.21%	1.04%	15.01%	42.60%	31.66%	59.55%	0.48%	14.70%	8.25%	2.08%
Total	2.02%	0.26%	4.31%	13.85%	21.83%	42.86%	1.66%	4.74%	2.02%	0.77%

Notes : This table shows that impairment rates are high in 2002 and 2007 and low in 1997, 1998 and 2006. Impairment rates per rating category fluctuate and impairment rates per asset portfolio type increase in 2002 for CDOs and in 2007 for ABSs, CDOs and HELs.

See Rösch/Scheule (2009)

2 The Toxic Securities

Fair Value Hierarchy of the German Institute of Public Auditors (IDW 2007)

If the market is active:

Level 1 Quoted market price

Level 2 Latest quoted market price (adjusted if necessary)

If the market is inactive:

Level 3 Transaction prices

Level 4 Comparison with fair value of **similar financial instruments**

Level 5 Valuation models (**DCF**, option pricing theory, other common valuation models)

2 The Toxic Securities

- Supposed **complexity** of credit risk-based contracts is actually NOT a problem
- **Illiquidity** of corresponding markets can show a disastrous impact
- Supervisory authorities should NOT ban **credit risk derivatives** (“nuclear weapons of the financial industry”)
- Regulatory activities should focus on a well-functioning **secondary market**

Agenda

- ① **Some Pieces of the Financial Crisis Puzzle**
- ② **The Toxic Securities**
- ③ **Regulatory Framework on Futures Markets**
- ④ **Summary**

3 Regulatory Framework of Futures Markets

- ➔ **Market makers** offer bid-ask intervals that, ideally, include the fair value (“mark to market to model”)
- ➔ **Bid-ask spreads** should be regulated reasonably small
- **Bad bank** approach is NOT effective, because the bad bank only “buys” (determination of transaction price is still an open question)
- ➔ Issuers should act a **designated sponsors** (like on ETF market)

3 Regulatory Framework of Futures Markets

- ➔ Futures are **standardized** forward contracts traded on public markets; Forward are non-standardized OTC contracts
- ➔ Standardization of traded contracts supports **liquidity** of the market
- ➔ Liquidity appears to be a condition for **fair prices**
- Standardization implies **basis risk** (imperfect hedge of exposure)

3 Regulatory Framework of Futures Markets

- From market micro structure theory (see Allen/Gale 1992) we know that prices can be manipulated by dominant **large traders**
- Answer from futures market regulation:
Size limits in open interest
- In particular important if **derivatives** on MBS are traded

Agenda

- ① **Some Pieces of the Financial Crisis Puzzle**
- ② **The Toxic Securities**
- ③ **Regulatory Framework on Futures Markets**
- ④ **Summary**

4 Summary

Assumptions

- The financial crisis shows its origin in over-reacting **illiquid markets**
- MBS market values appeared to be **mispriced** compared to model values (risk-adjusted present values)
- Supervisory authorities should create regulatory conditions for a well-functioning **public secondary market**
- For this, suggestions include a market maker organization with small bid-ask and the **obligation** for the originator to act as designated sponsor