

Innovations in Credit Risk Transfer

Implications for Financial Stability

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Outline

- How does credit risk transfer motivate financial innovation?
- What are the key concerns going forward?

Key Forms of Credit Risk Transfer

- Loan sales and syndication.
- Default swap protection.
- Credit derivative product companies.
- Collateralized loan obligations.
- Specialty finance companies.

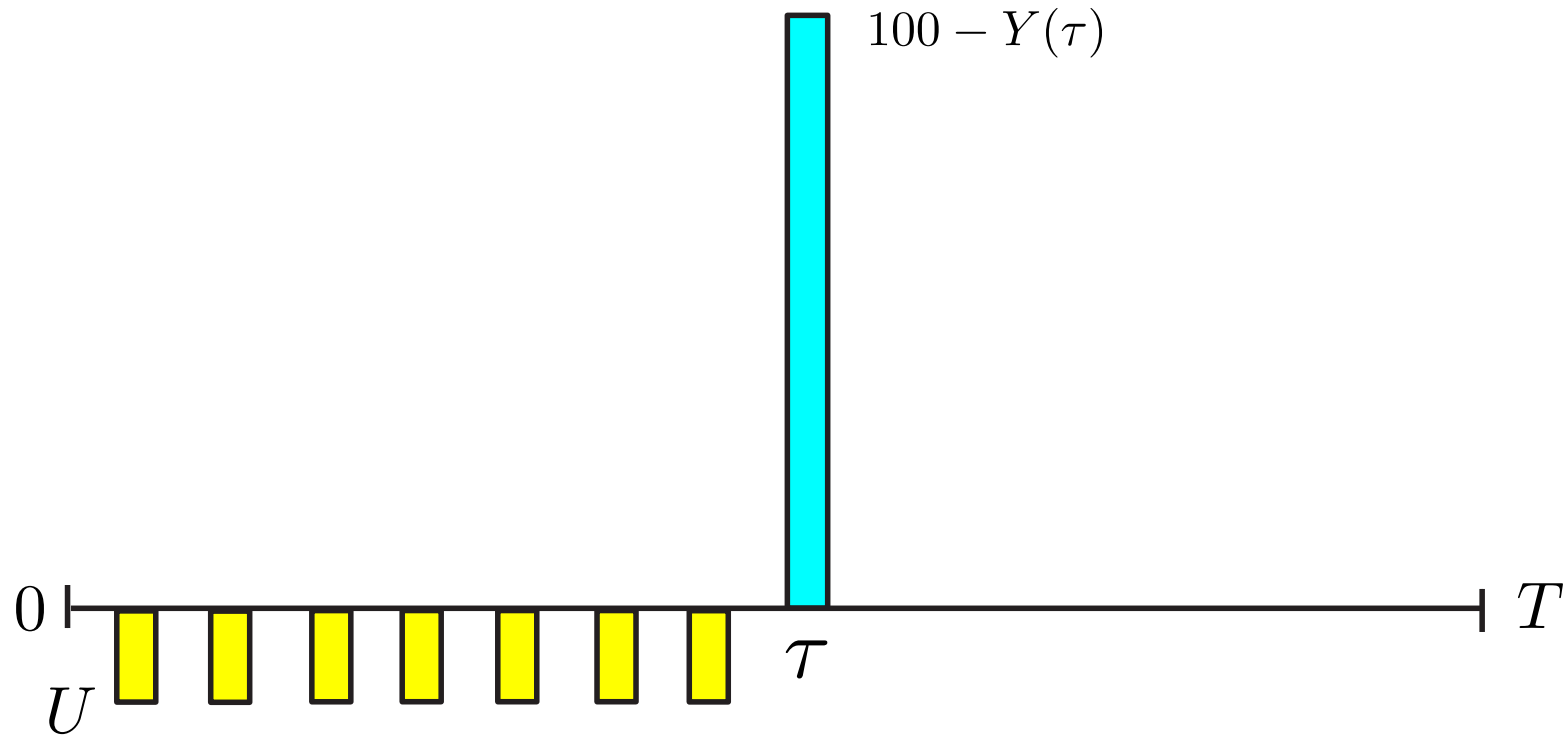


Figure 1: Default swap payments by protection buyer at a CDS rate of U , until default at time τ . Recovery of $Y(\tau)$ implies payment by protection seller of $100 - Y(\tau)$.

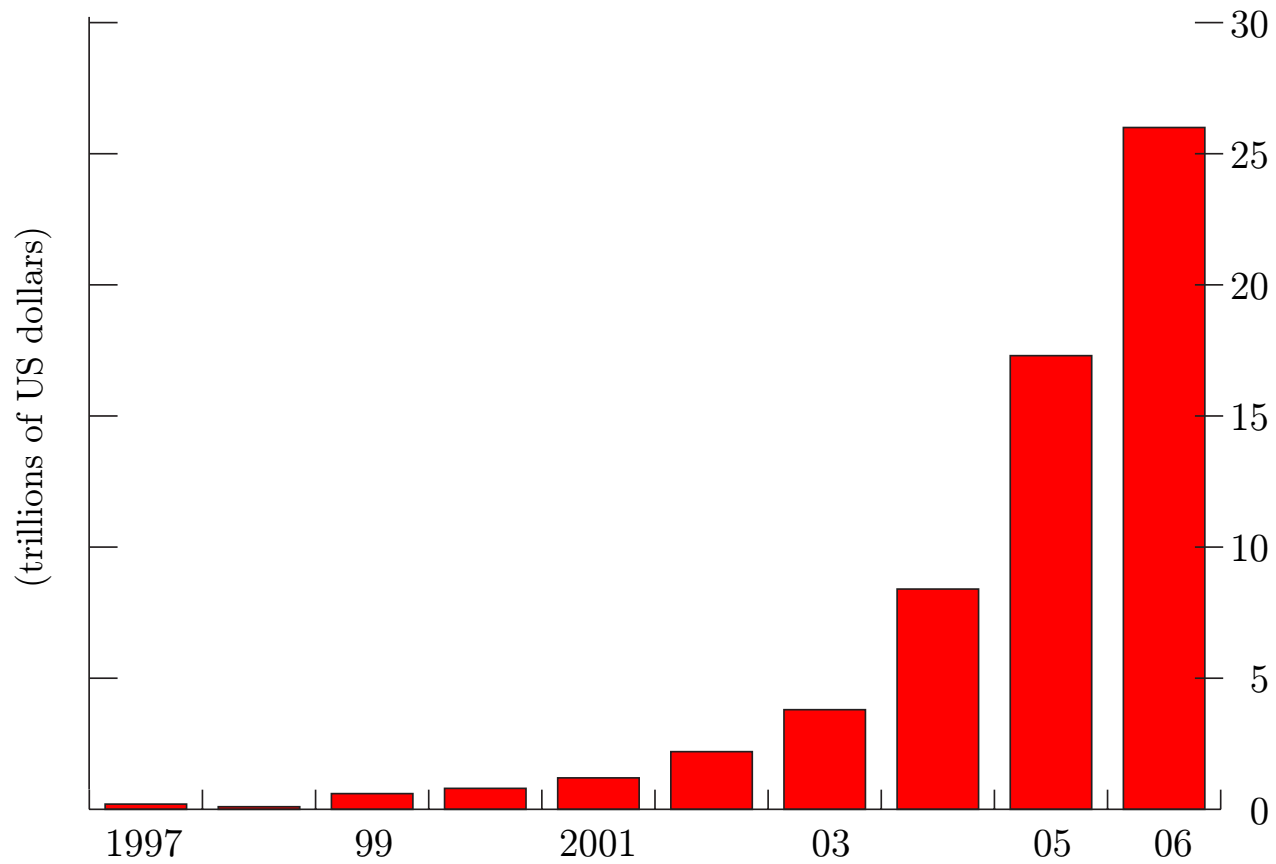


Figure 2: Outstanding notional amount of default swaps. Source: British Bankers Association.

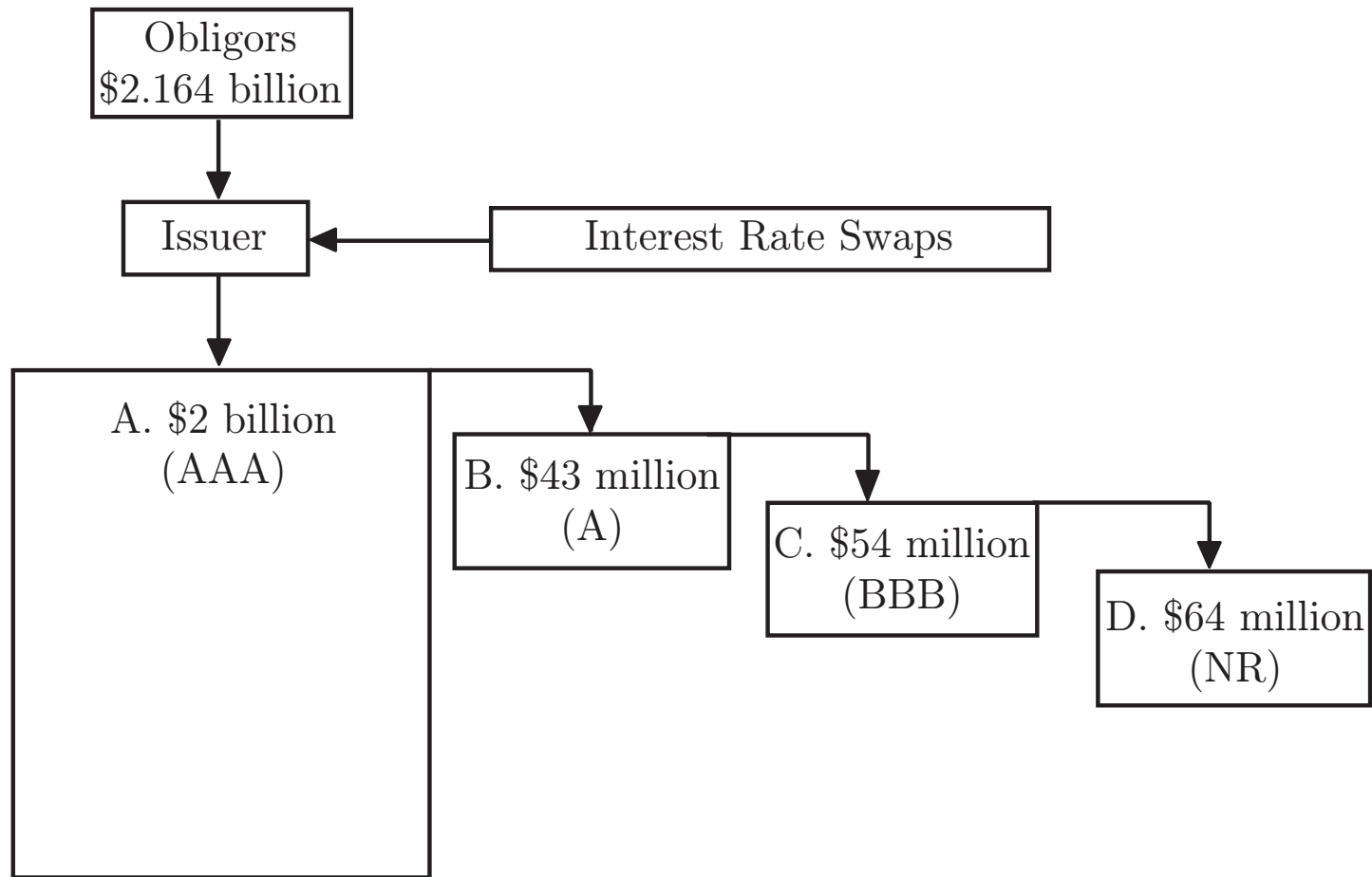


Figure 3: NationsBank 1997-1 CLO tranches (Source: Fitch)

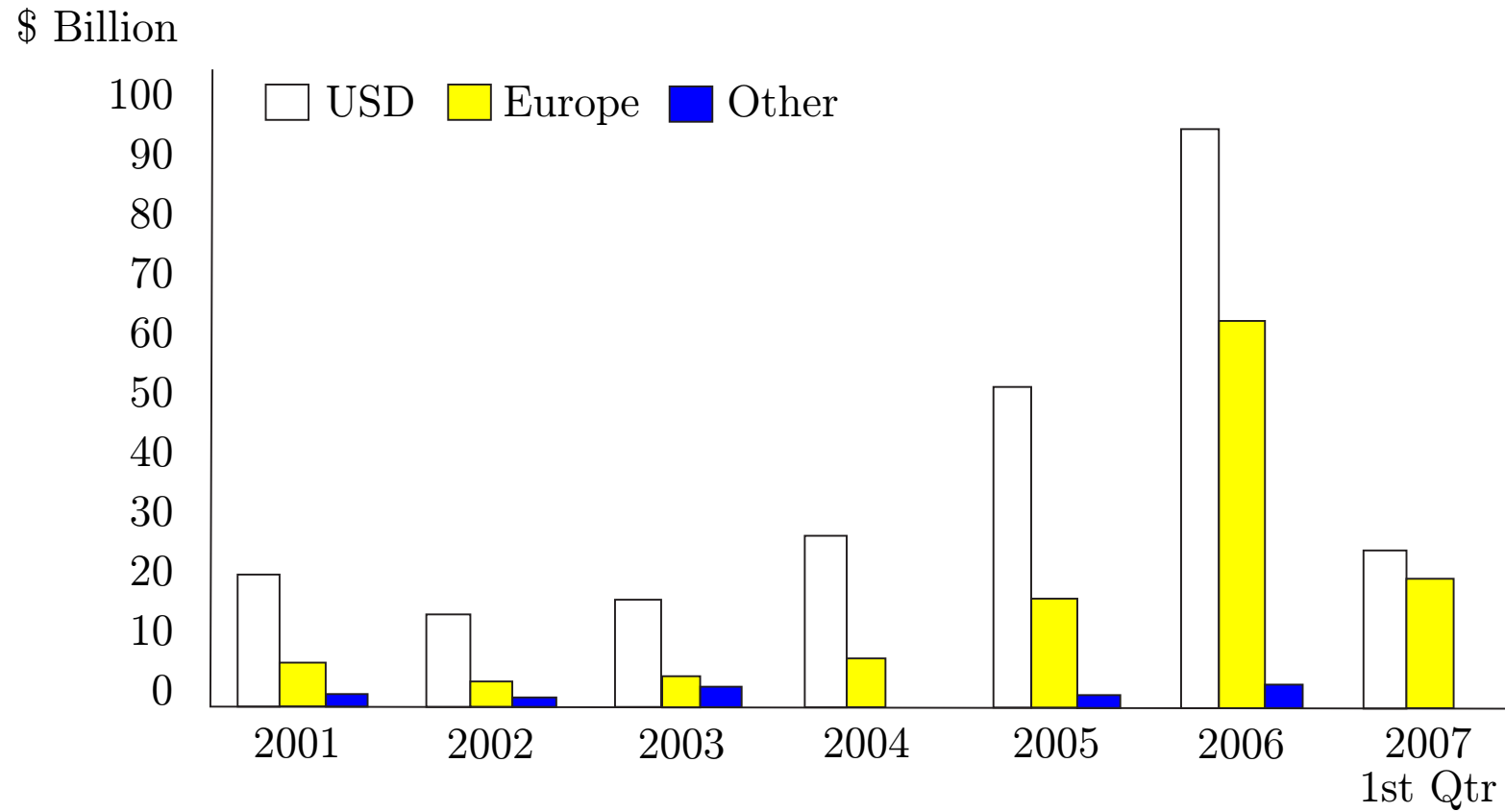


Figure 4: Issuance of CLOs by year and region. Source: Morgan Stanley.

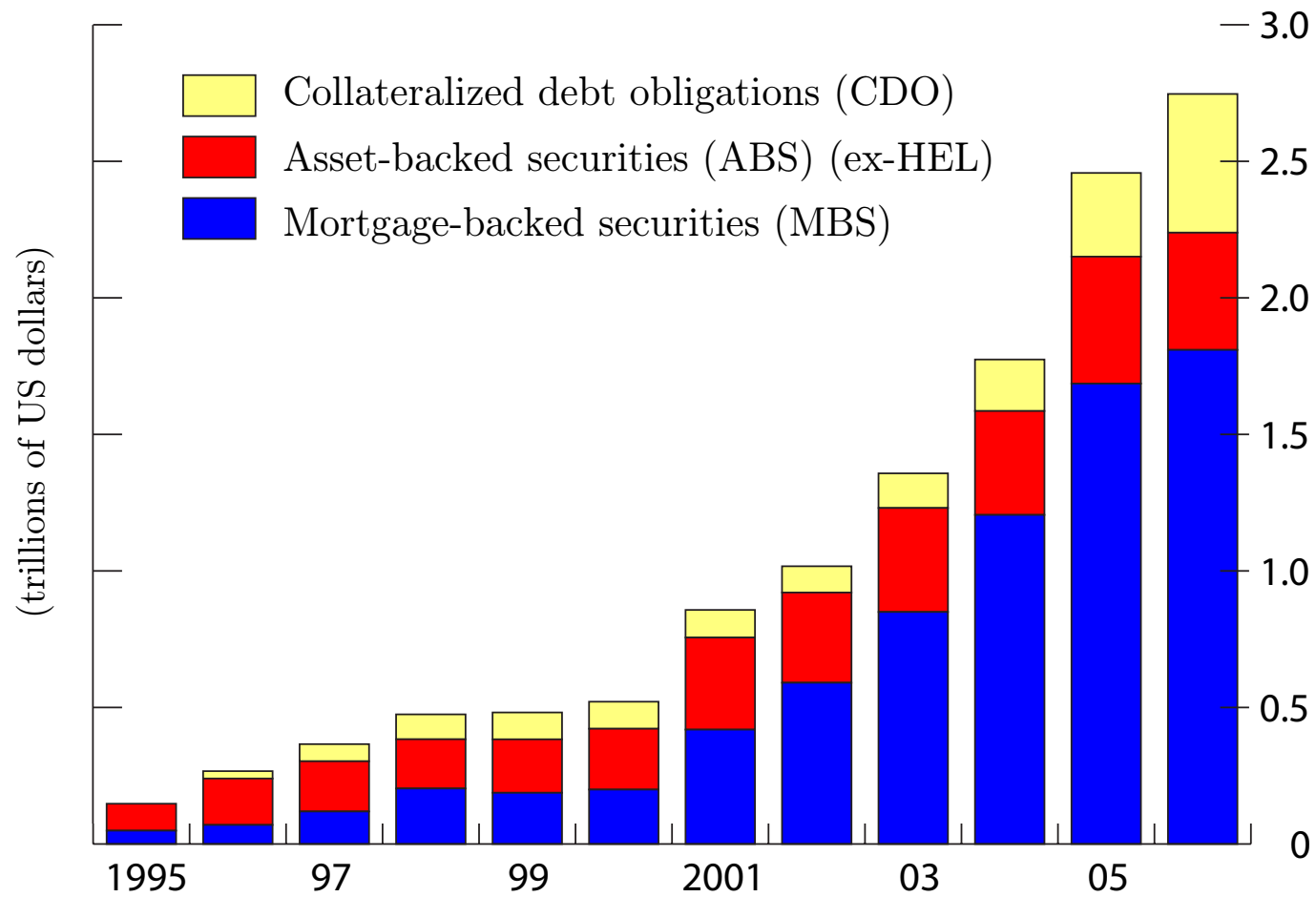


Figure 5: Securitization of bank credit risk. Source: IMF

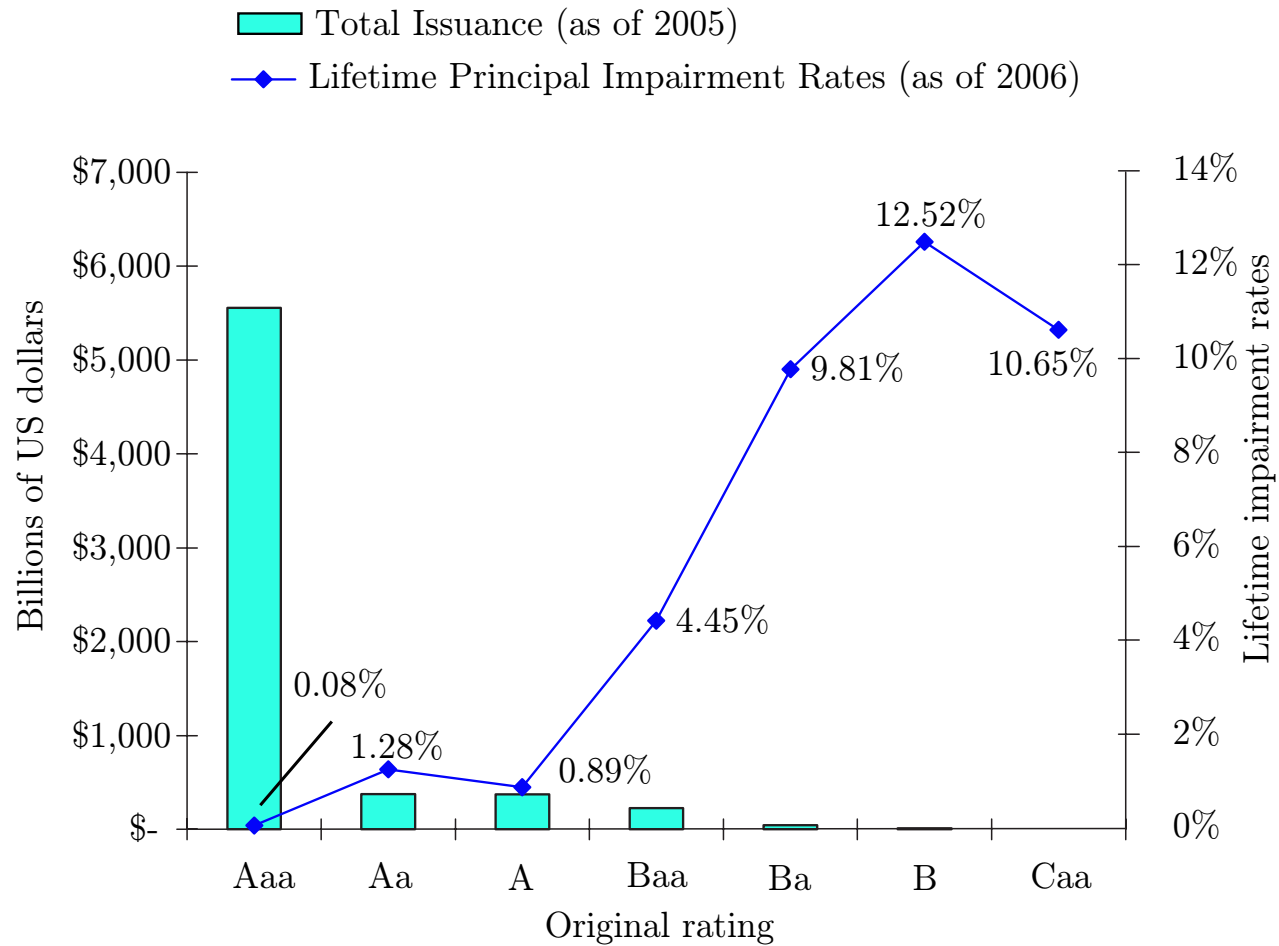


Figure 6: Structured finance issuance and impairment. Source: Moodys.

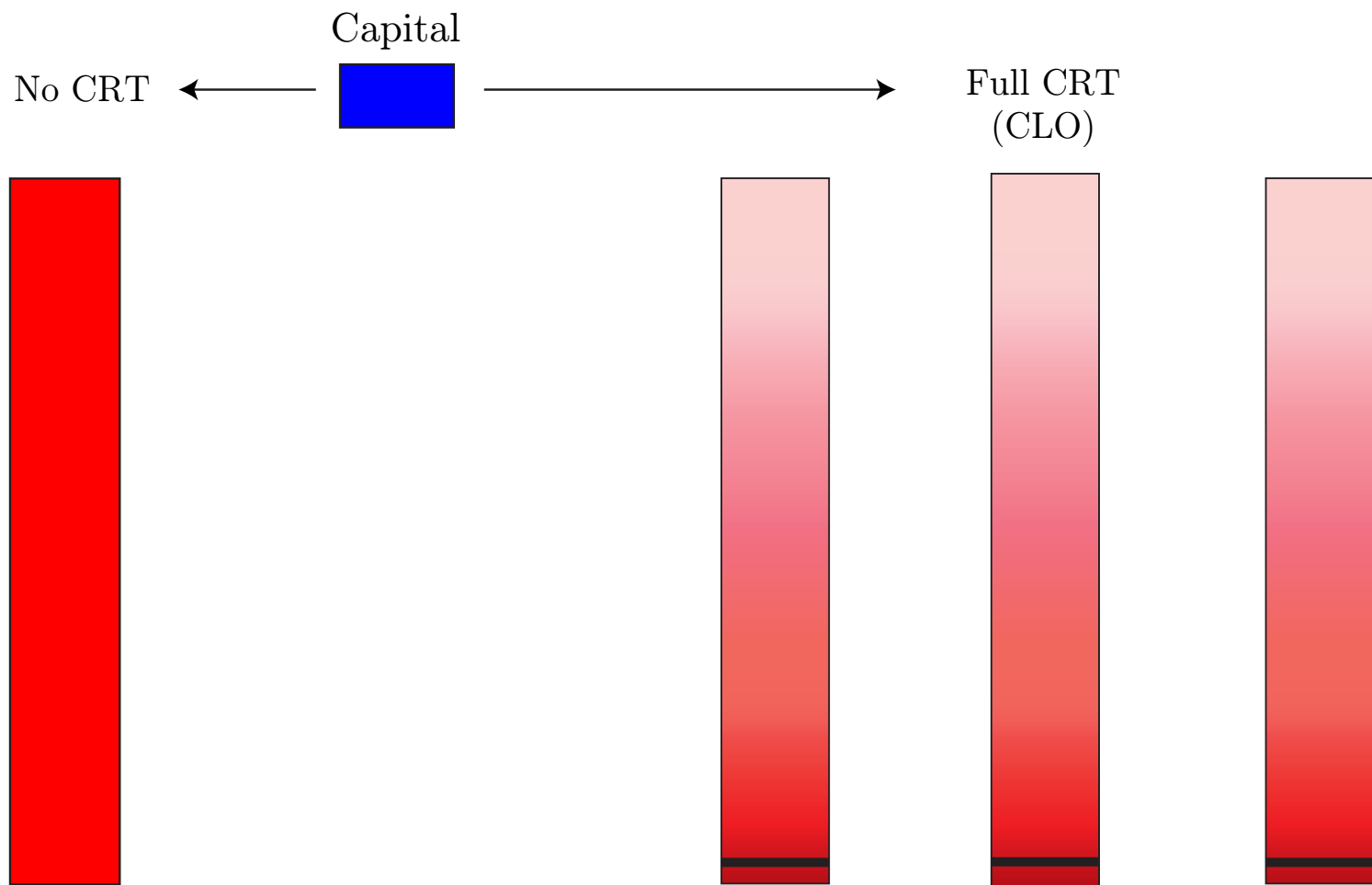


Figure 7: Retention of toxic waste at low leverage.

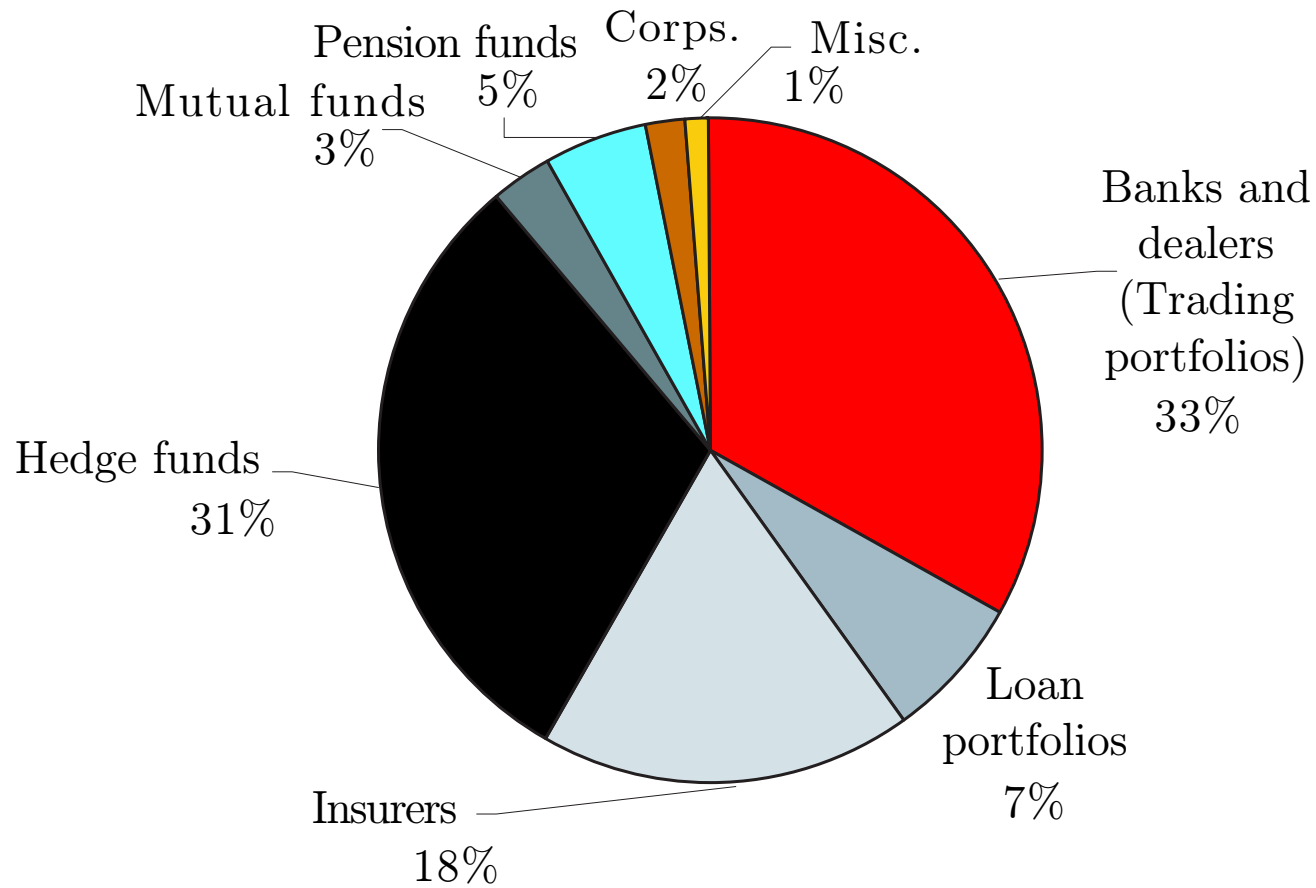


Figure 8: Estimated breakdown of CDS buyers of protection. Source: Bank of America, March 2007.

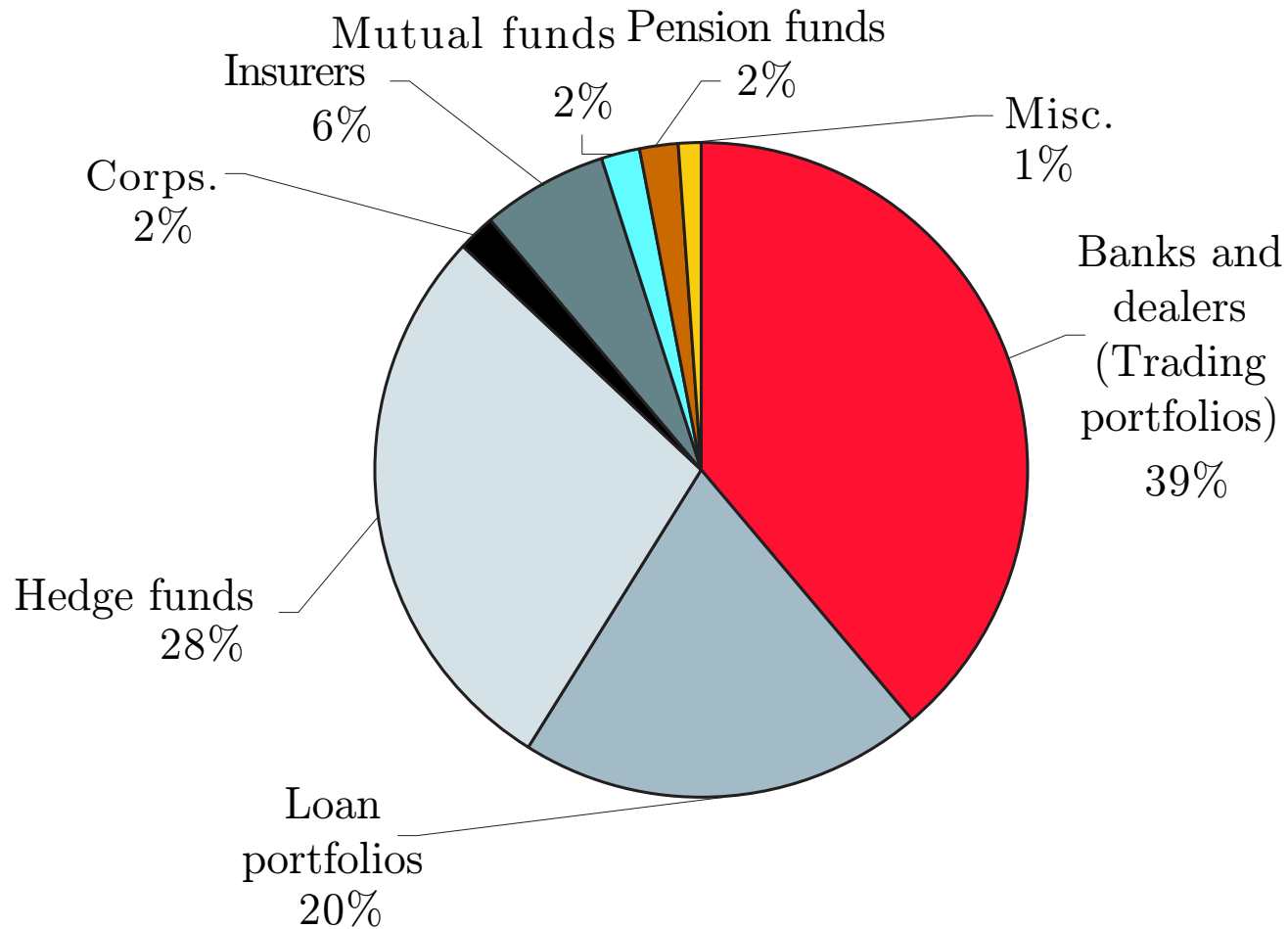


Figure 9: Estimated breakdown of CDS sellers of protection. Source: Bank of America, March 2007.

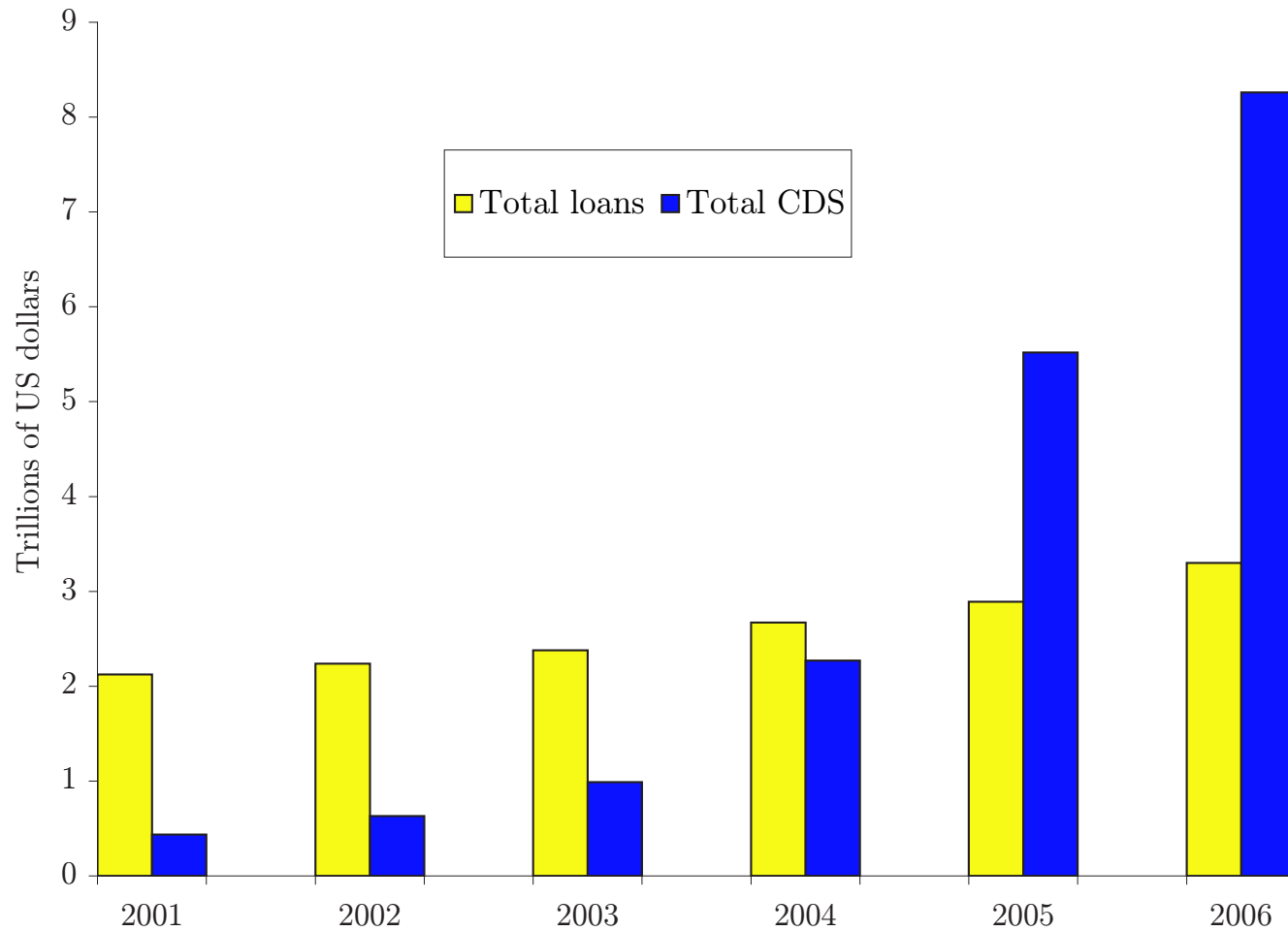


Figure 10: Aggregate U.S. Large-Bank Loans and CDS positions (Data: Federal Reserve Bank of Chicago).

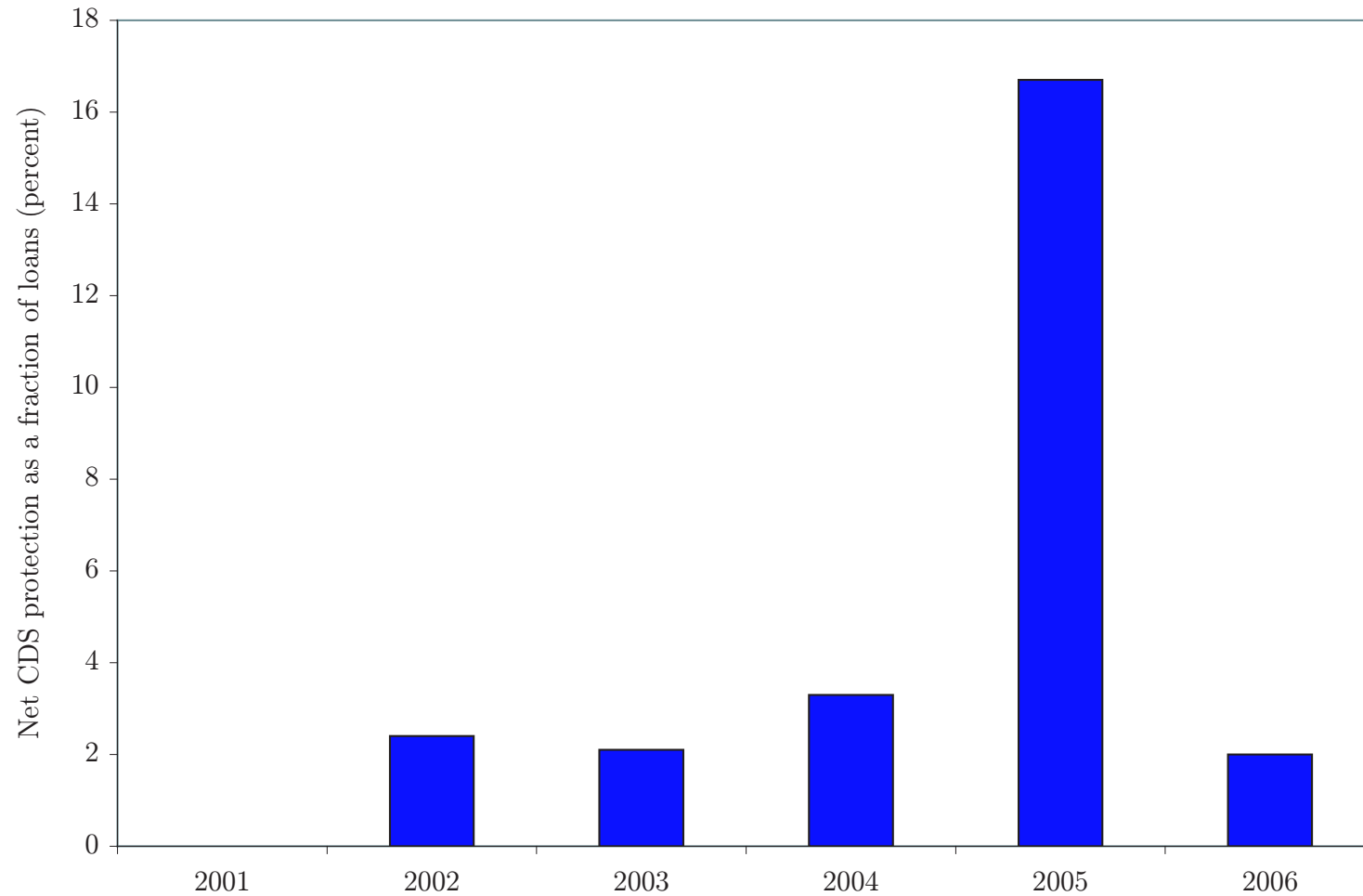


Figure 11: Net CDS protection bought as a fraction of loan book.

Benefits of credit risk transfer

1. Releases lender's capital for new credit intermediation, improving the efficiency of credit markets.
2. Provides diversification to lenders, lowering systemic risk.
3. Distributes risk to investors that are less critical to the provision of liquidity to the financial system.
4. Provides an improved menu and supply of assets and hedging opportunities to asset managers.

Costs of credit risk transfer

1. The lemon's premium that the investor charges because of the lender's inside information regarding the borrower's credit risk.
2. Moral hazard: inefficient control by the lender of borrowers' default risks.
3. Legal, marketing, and other arrangement costs.

Key Concerns Going Forward

1. Even specialists in collateralized debt obligations (CDOs) are ill equipped to measure the risks and fair valuation of tranches that are sensitive to default correlation. CRT markets could suffer a dramatic loss of liquidity in the event of a sudden failure of a large specialty investor or a surprise cluster of corporate defaults.
2. Improvements in credit risk transfer have reduced the degree to which credit is intermediated by banks, relative to hedge funds, credit derivative product companies, and specialty finance companies. Can banks still be sources of liquidity in systemic crises?

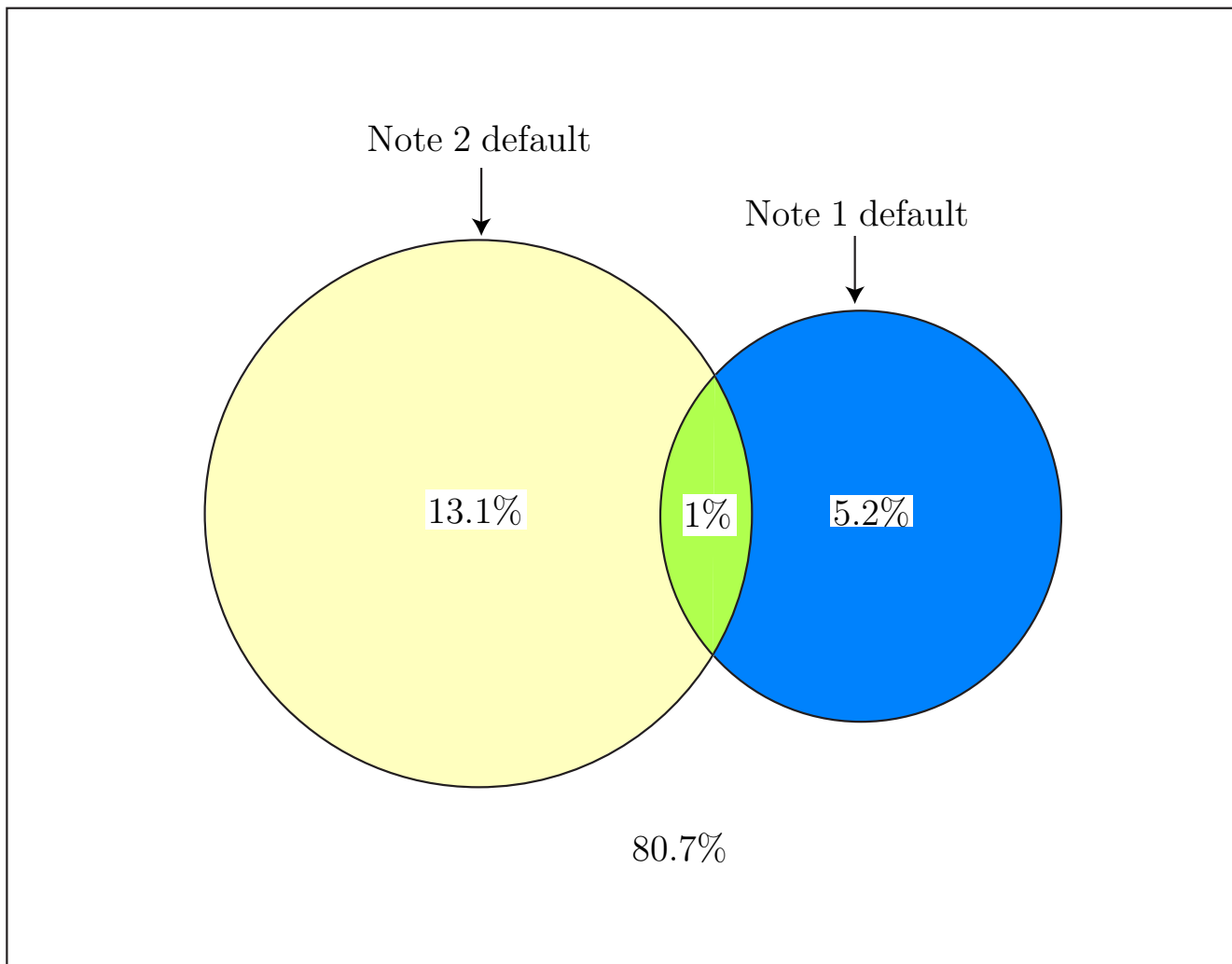


Figure 12: Venn diagram for obligors with a default correlation of 4.3%.

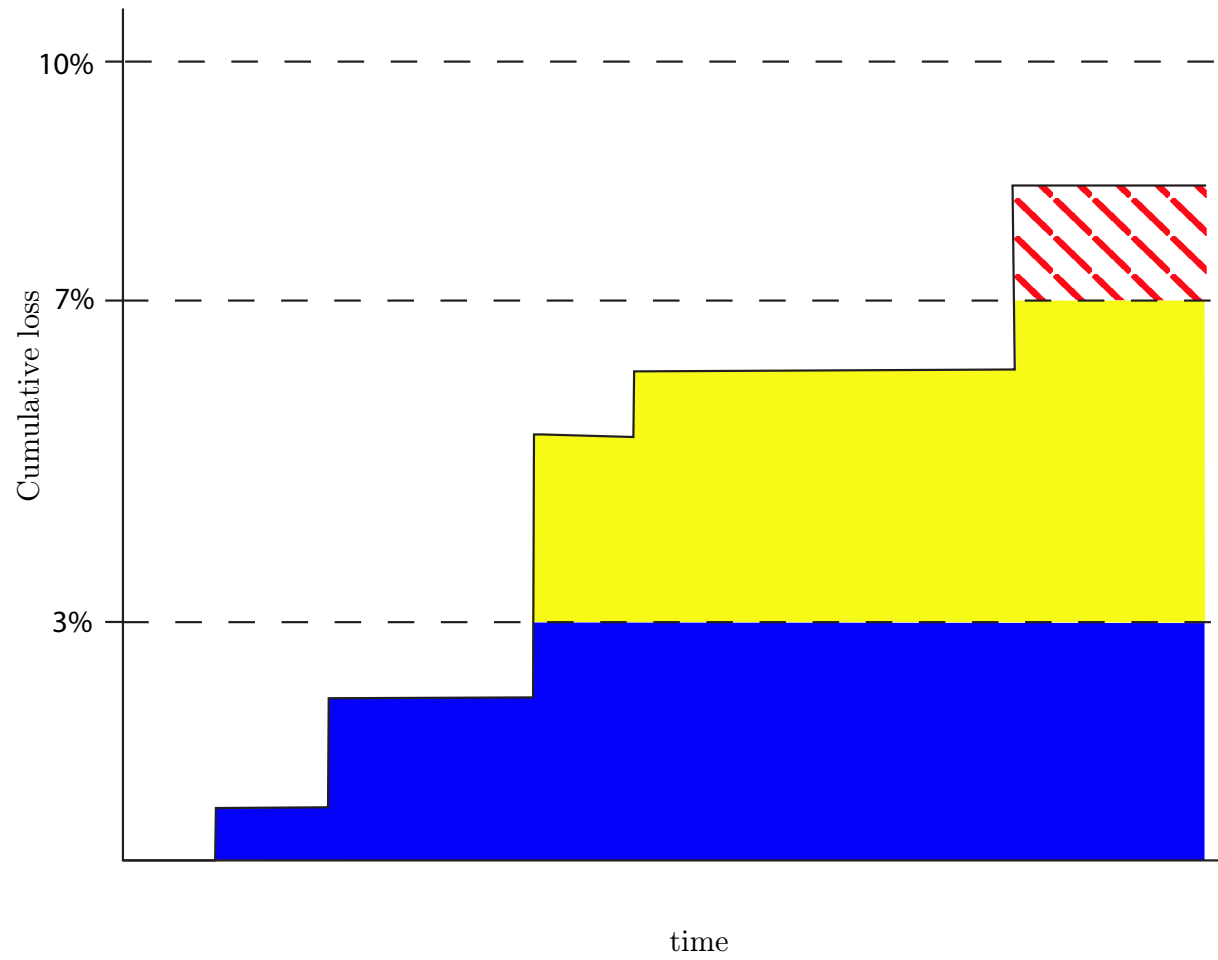


Figure 13: Tranching total default losses on a CDS portfolio.

Table 1: CDX NA IG 5-year Series 7 tranche premia, fraction of risk-neutral expected total loss rate borne by each tranche, and base Gaussian copula correlations to the respective detachment points. (Source: Morgan Stanley data for February 19, 2007.)

Tranche	Up-front fee (%)	Running spread (b.p.)	Fraction of total loss	“hedge” (Δ)	Base corr.
0-3%	19.25	500	84.9%	23.8	14%
3-7%	0	64	8.2%	4.6	27%
7-10%	0	12	1.2%	1.1	35%
10-15%	0	5	0.9%	0.5	46%
15-30%	0	2	1.8%	0.2	71%
30-100%	0	1	3.1%	0.1	na
CDX	0	31.0	100%	1.0	na

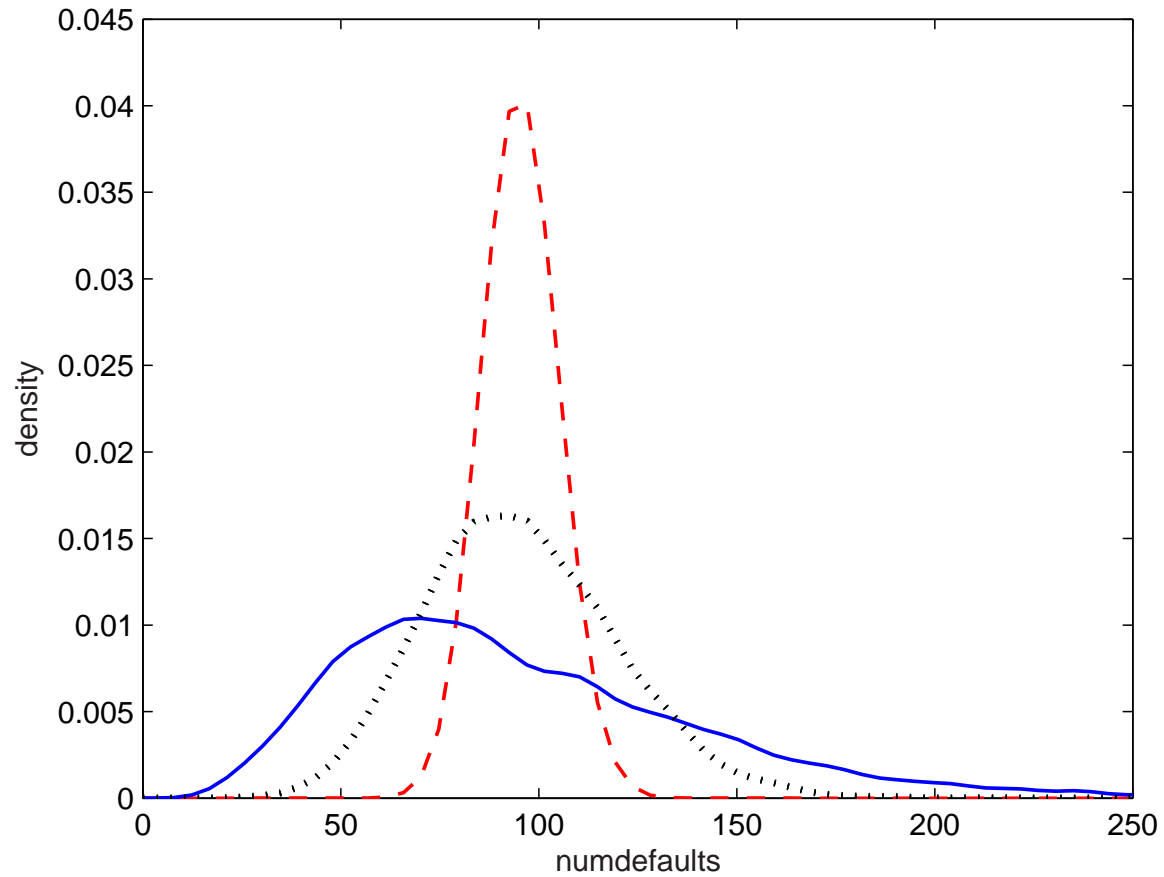


Figure 14: Default loss distribution, 1998-2003, on 1813-firm portfolio, with frailty (blue) and without (red). Source: Duffie, Eckner, Horel, Saita (2006).

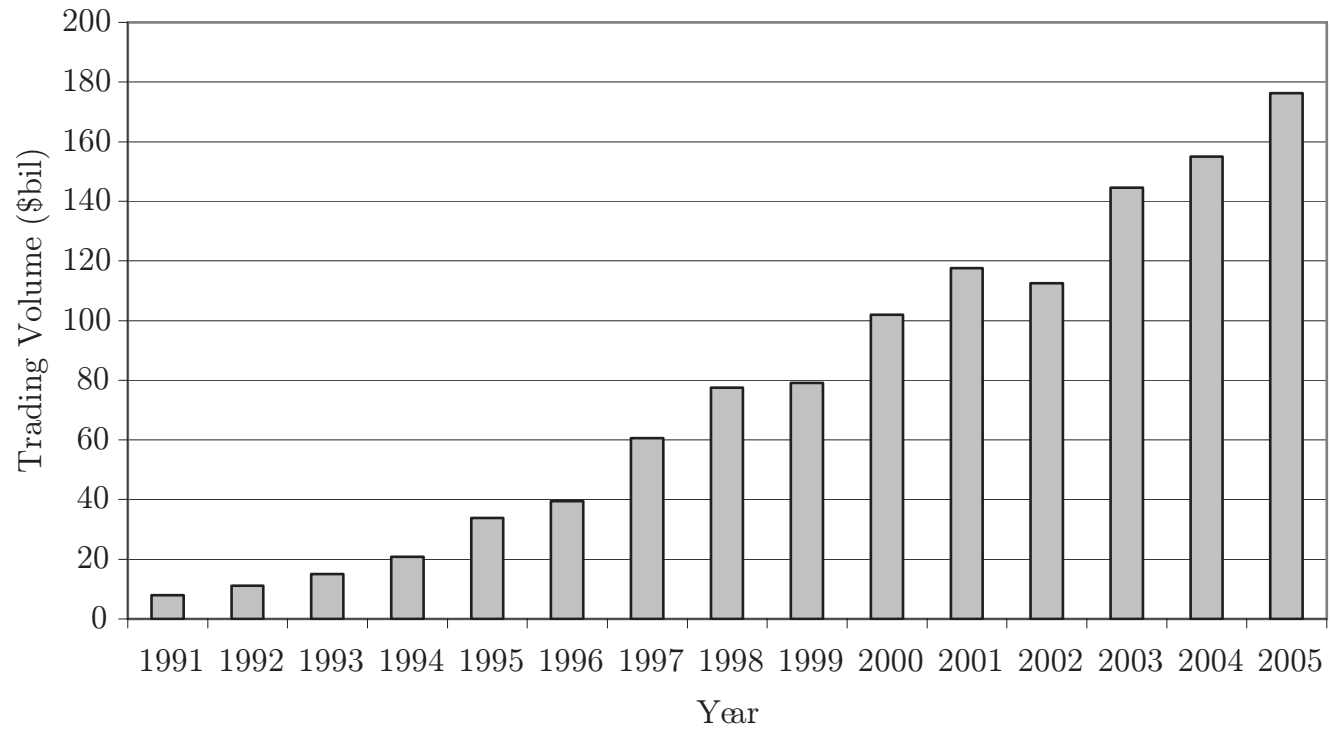


Figure 15: Secondary-market loan sales. Source: Drucker and Puri (2006).

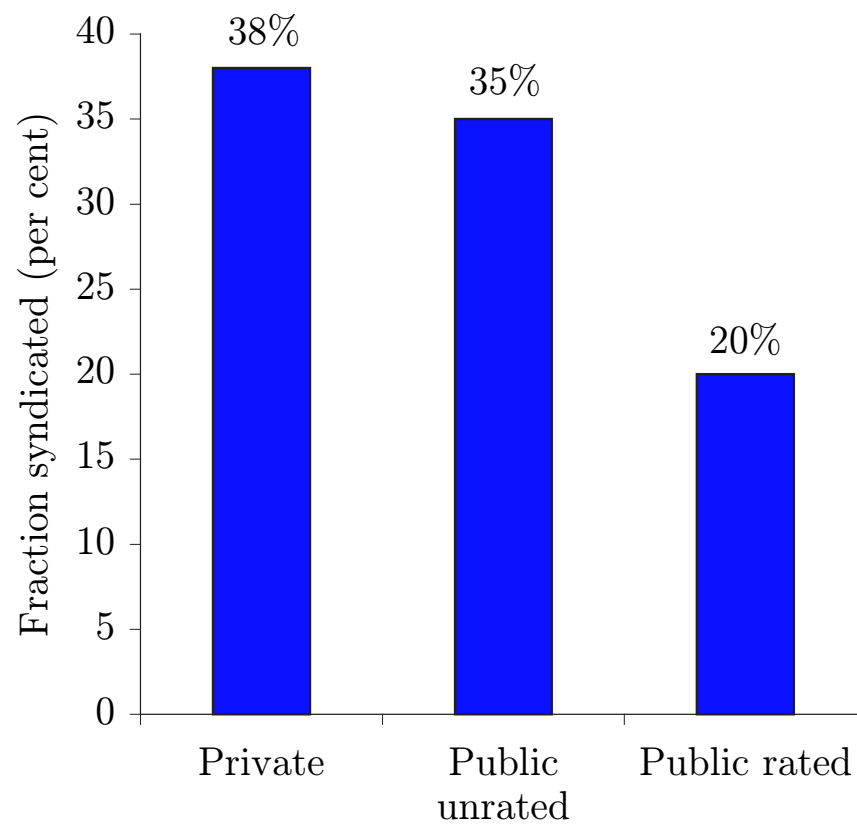


Figure 16: Estimates by Sufi (2007) of syndicated loan retention by lead arranger.

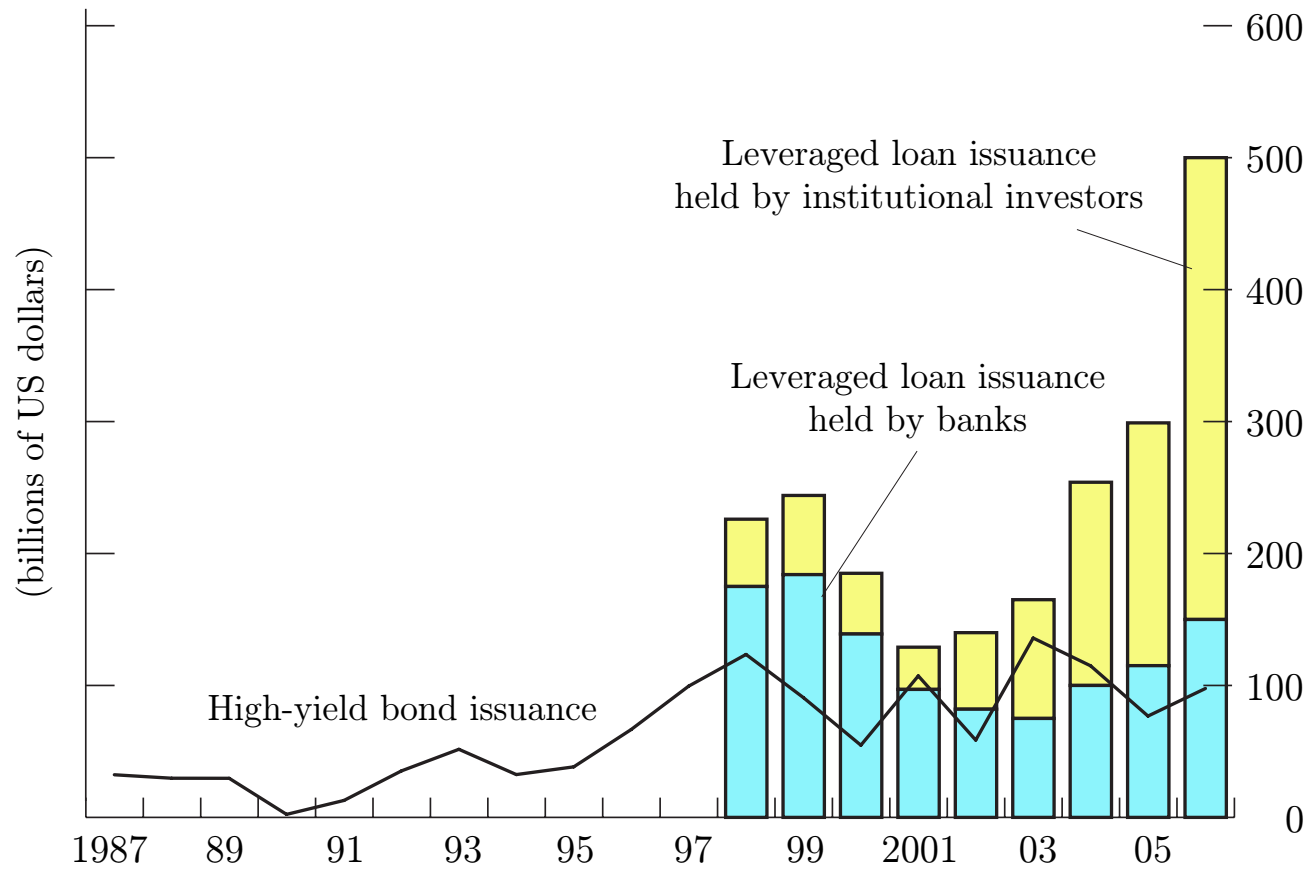


Figure 17: Bank and non-bank investment in leveraged loans. Source: IMF.

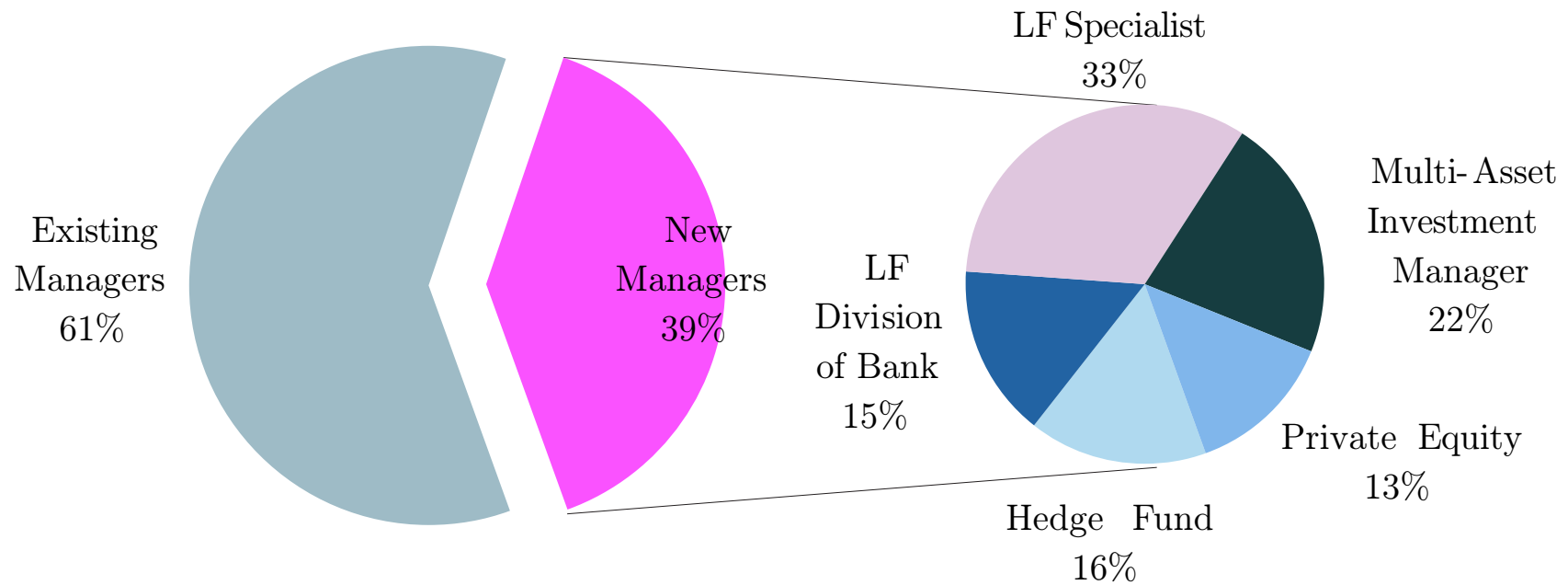


Figure 18: New European CLO issuers in 2006. Source: Fitch.