



Has Financial Development Made the World Riskier

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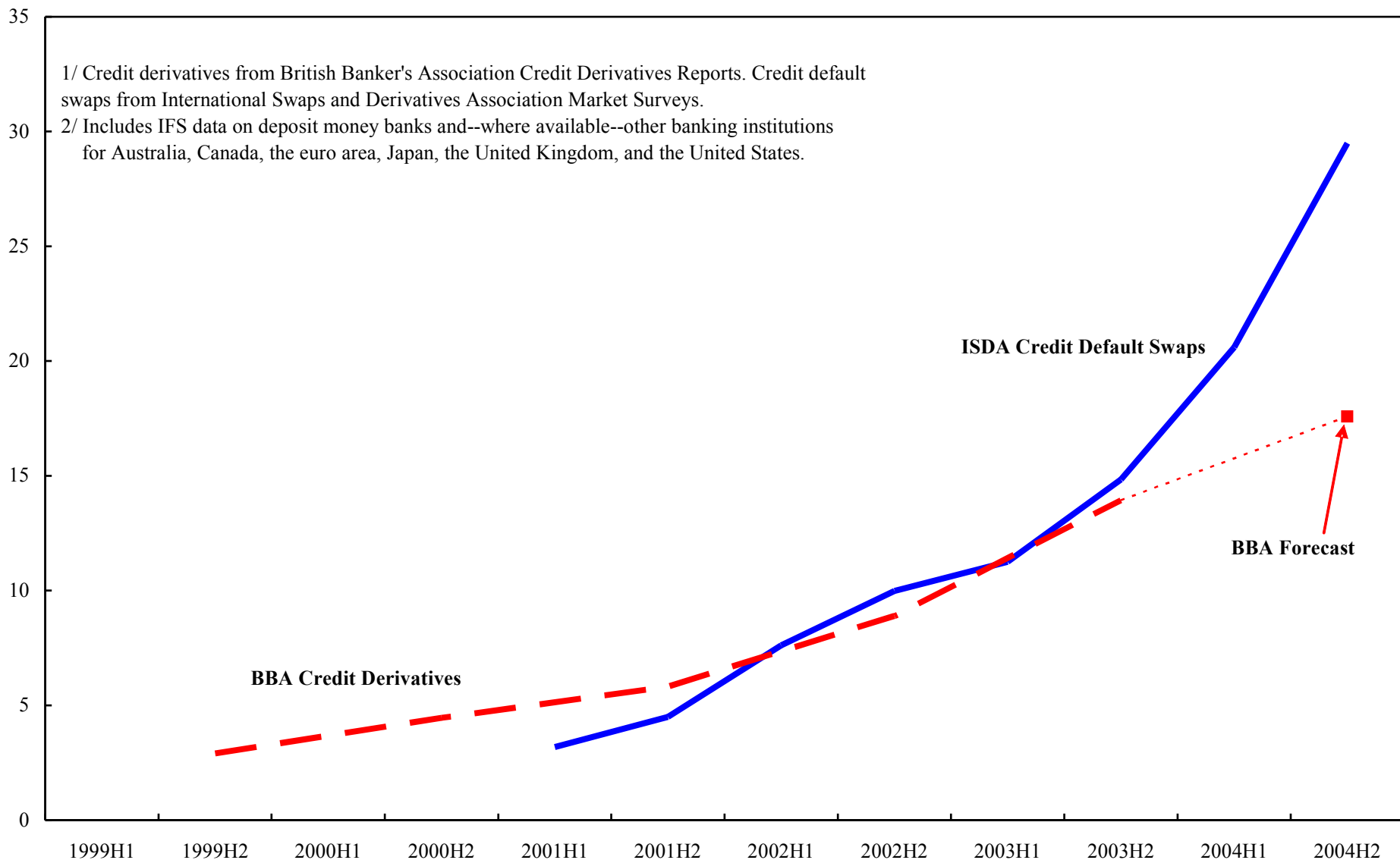
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Tremendous financial development

- Technological change
 - Financial engineering, portfolio optimization
- Deregulation
 - Competition : products, institutions
- Institutional change
 - Private equity
 - Inflation targeting

**Figure 1: Credit Derivatives and Credit Default Swaps 1/
(In Percent of Private Sector Bank Credit 2/)**

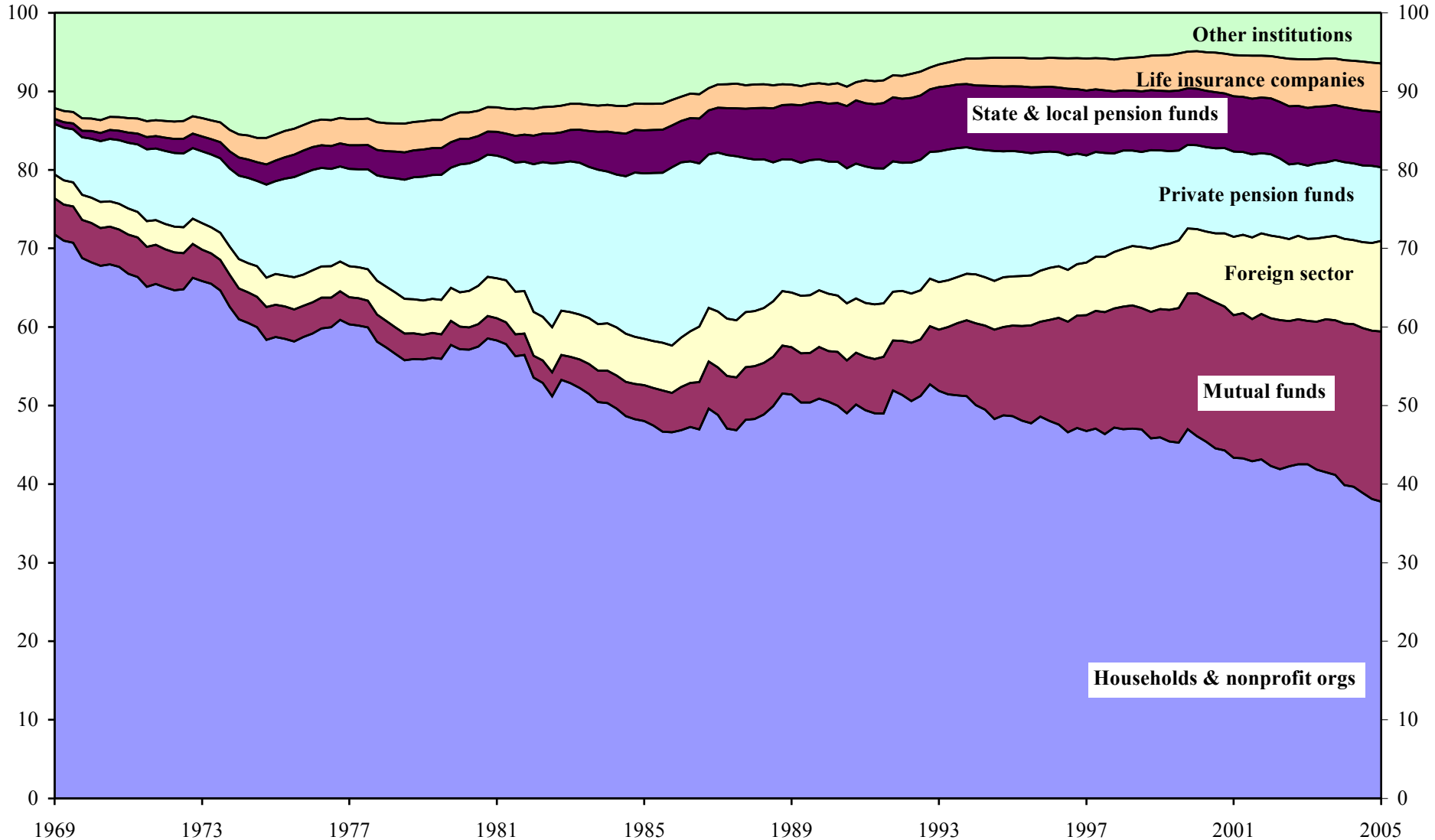




Arm's length transactions

- Disintermediation?
 - Credit Default Swaps
 - Loan sales
 - Money market funds
- Reintermediation
 - Investment managers :
 - Mutual Funds
 - Pension Funds
 - Hedge Funds
 - Venture Capital
 - Insurance Companies

Figure 3. Ownership of Corporate Equities in the United States
(In percent of total market value)



Source: U.S. Flow of Funds.

Banks

- Can sell much of risk associated with commodity transaction but have to hold a piece.
 - Riskier transaction, more retention
- As simple transactions become commodities, turn to more illiquid transactions
 - Back-up lines of credit
- Warehouse Risk



Tremendous benefits

- Spread risk, therefore can take more
- Greater access to capital
- Is there a potential downside?

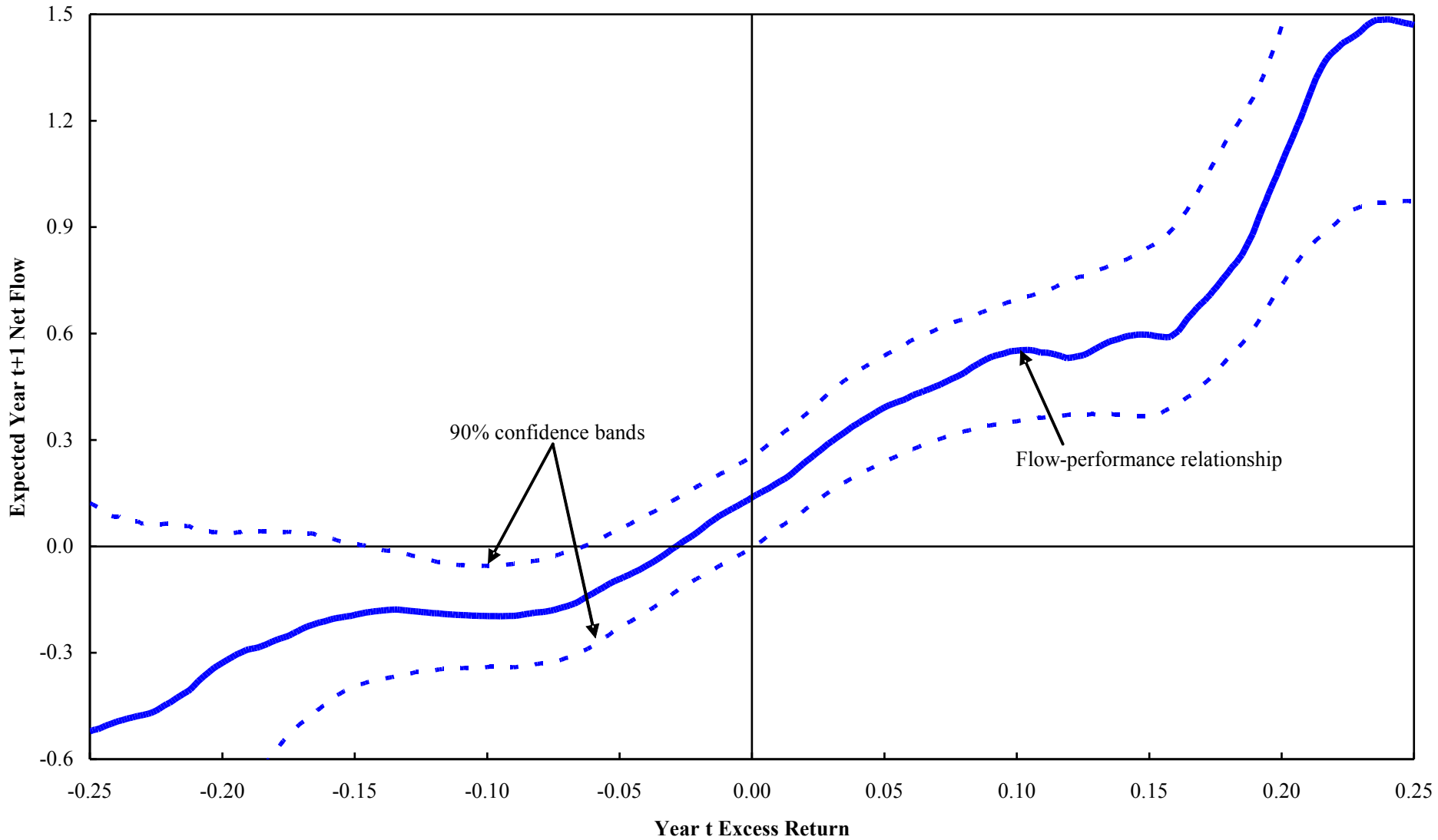
Incentives

- Limited competition => franchise value
- Little risk taking by bank managers

Not any more

- Competition, so compensation has to be sensitive to returns generated
- Relative performance evaluation
 - By organization
 - By market

Figure 4. U.S. Mutual Funds' Returns and Net Flows 1/



Source: Chevalier and Ellison (1997).

1/ Data for young funds (age 2 years).

Effective compensation structures

- Convex in returns – limited downside from losses, substantial upside
 - ⇒ Incentive to take risk
- Relative performance evaluation
 - ⇒ Take risk that is concealed from investors: tail risk – e.g., write disaster insurance
 - ⇒ Herd on same investments

Both behaviors come together in asset price booms, especially in an environment of low rates.



Low interest rates

- Fixed rate obligations contracted at time of high rates increases incentive to take risk.
 - Guaranteed Investment Contracts
- Compensation structures with minimum return hurdles also increase incentive to take risk.



Too much incentive to take risk?

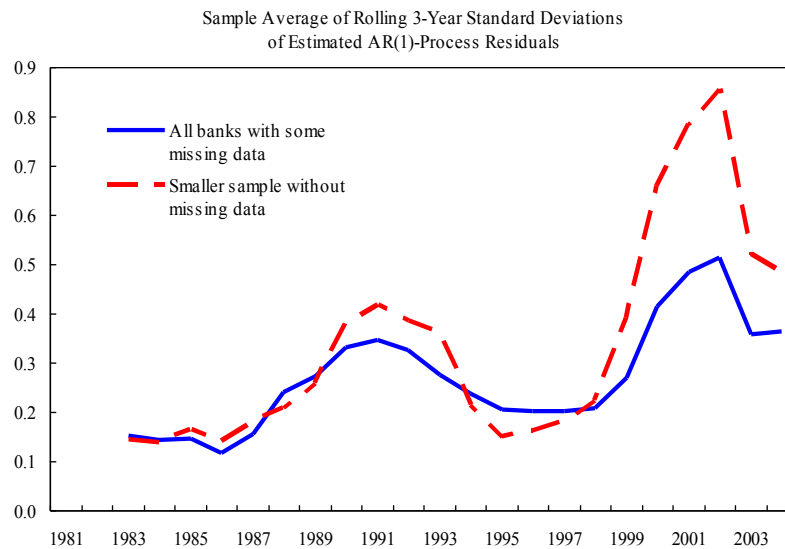
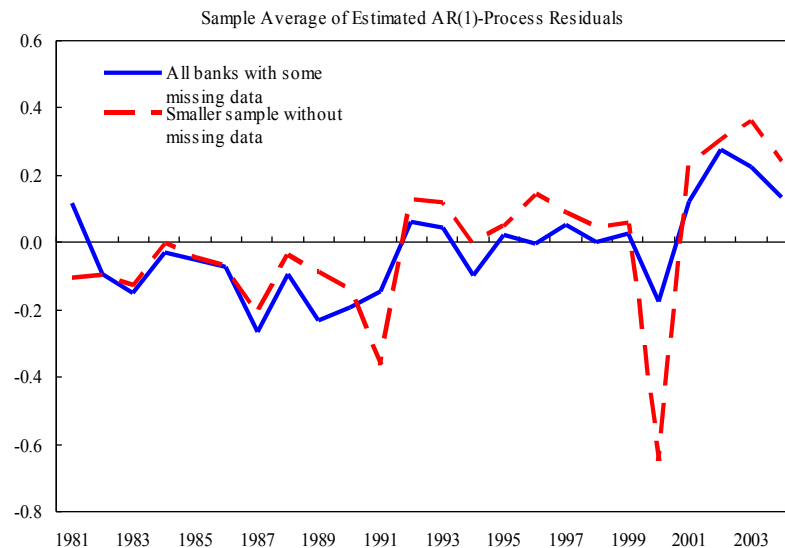
- Private incentive to generate returns exceeds social
- Private ability to punish small
- Moral hazard – breaking the buck in the 1990s



Are banks immune

- Stand against the trend?
- Feed it?
- Leveraged position on boom?

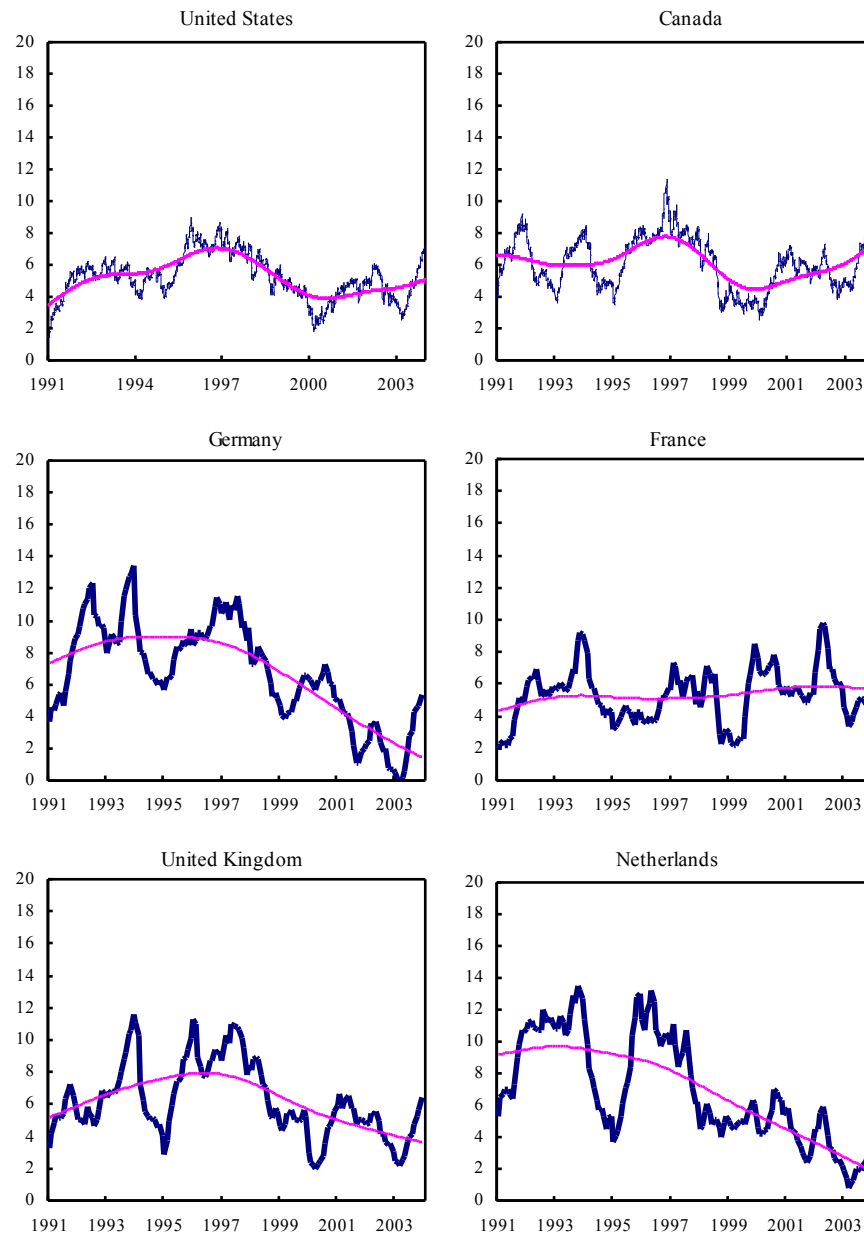
Figure 5. S&P 1500 Banks: Earnings Volatility



Source: Datastream; and IMF staff estimates.

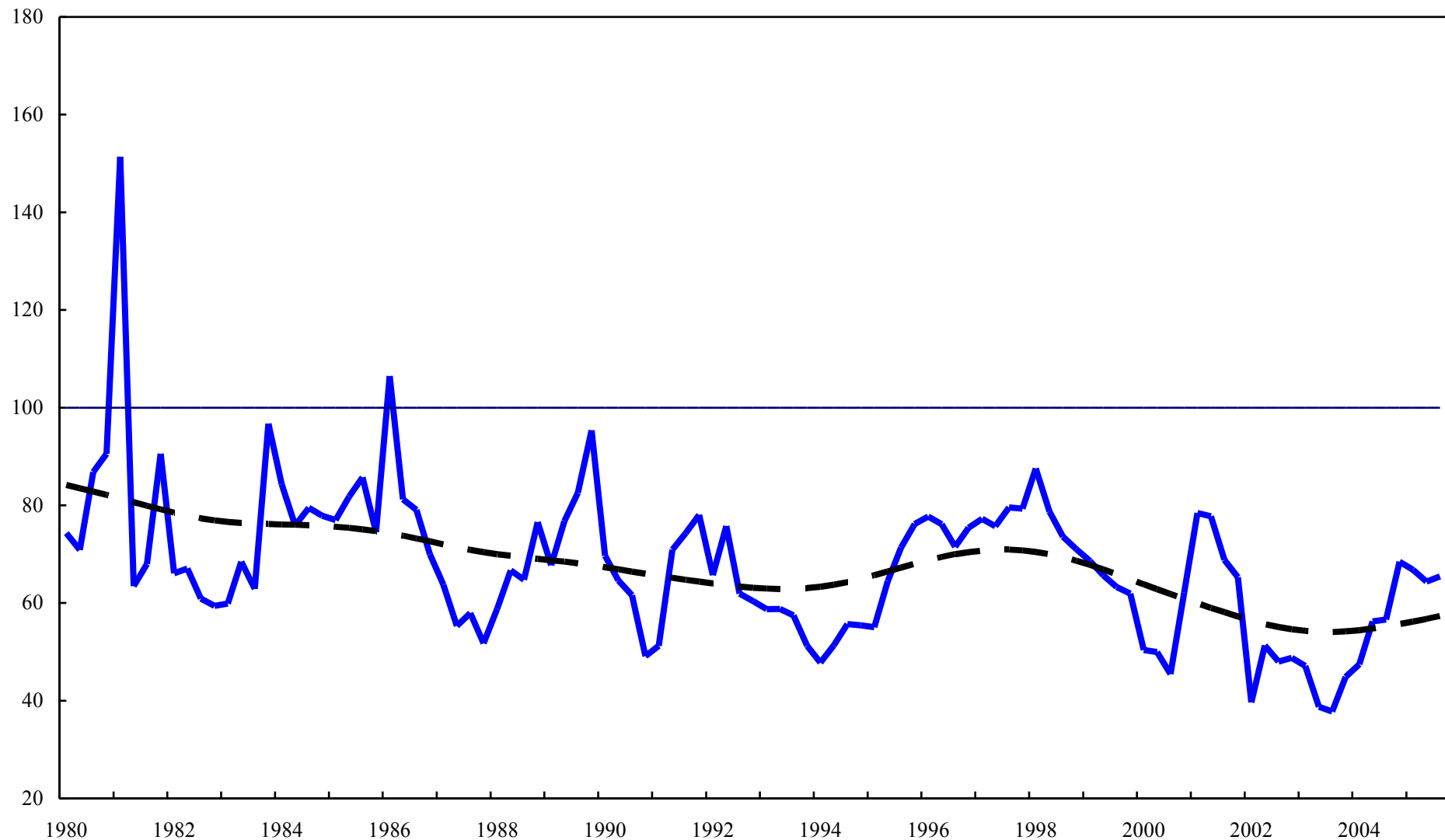
Notes: The residual is obtained from regressing annual bank earnings against lagged earnings. In the top panel, each residual is normalized by dividing by the average for that bank across the entire time frame then averaged across banks in the same period. In the bottom panel, a rolling standard deviation of the residuals is computed for each bank and then averaged across banks.

Figure 6. Bank Distance to Default and Trend Component




Source: Datastream; and IMF staff estimates.

Figure 7. S&P 500 Banks: Price-to-Earnings Ratios
(In percent of S&P 500 P/E Ratios)



Source: Datastream.



Even if not immune to the frenzy, will banks be able to provide liquidity if a big shock hits?

- Why liquidity important.
- Russian Crisis
- Banks need liquidity
 - Dynamic hedging
 - Opacity of balance sheets
- Will banks attract sufficient liquidity?



Implications

- Monetary Policy

- Measured change
- Costs of low rate environment
- Banking system tip of iceberg of credit
- Aggregate liquidity critical



Implications

- Prudential regulation
 - More capital?
 - More disclosure?
 - Better incentives?
 - Invest 10 percent of pay in assets under management, which stays invested till a year after manager leaves.



Smart regulation

- Light
- Facilitate market competition and innovation.
- Don't trust market participants to always get it right.