Systemic Risk: The events of 1998 from an industry perspective

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Introduction

Defining Systemic Crises

- Events that impact the system, not just individual counterparties or a market.
- e.g. bank “runs”, market “gridlock”, crisis of confidence, failure of key utilities.
- In some definitions, also critical to impact the underlying real economy
- The normal rules and boundaries of usual market function are in question

Possible Candidates

- 9/11: „Is the payment system going to work? Will confidence return?“
- Post Tech-Bubble Correction (2002-03).
- Russia/LTCM: „Markets keep getting worse and less liquid. Will this continue? Are my counterparties solvent?“
- [Avian Flu – „Can I run my business if nobody comes to the office?“]
Russia Crisis:

Joint Announcement of the Government & Central Bank (8/17/98):
  – Devaluation of Ruble (previously pegged)
  – Implementation of capital controls
  – Restructuring of Local Currency Debt

CSFB research comment from that period:

“**A major surprise to the market . . . CSFB had certainly not expected Russia to devalue, default and restrict convertibility at the same time; one of the 3, but not all 3 at the same time.**”

Some estimates that market participants lost $100bn
Russian debt default (hard currency bond prices)

80% drop

Source: Datastream
Russian currency devaluation

Source: Bloomberg

70% drop
LTCM Returns – the good years

- Highly prestigious global hedge fund
- Very large (>100bn in assets)
- Sophisticated, arbitrage oriented
- Highly leveraged (>25-1 in early 1998)
- Moderate net realized volatility
  (target was risk of S&P 500)
- Excellent returns in first 4 years

Source: P. Jorion “Lessons of Long Term Capital Management
Spread expansion

US Corporate Spreads

US Swap Spreads

Source: Datastream
Volatility of S&P 500 (market implied)

Source: Datastream
### Estimated Source of LTCM Losses

<table>
<thead>
<tr>
<th>Investment</th>
<th>Loss ($mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia and other emerging markets</td>
<td>430</td>
</tr>
<tr>
<td>High-yield (junk bond) arbitrage</td>
<td>100</td>
</tr>
<tr>
<td>Standard &amp; Poor's 500 stocks</td>
<td>203</td>
</tr>
<tr>
<td>Equity pairs trading</td>
<td>286</td>
</tr>
<tr>
<td>Equity volatility bets</td>
<td>1300</td>
</tr>
<tr>
<td>Directional trades in developed countries</td>
<td>371</td>
</tr>
<tr>
<td>Yield-curve arbitrage</td>
<td>215</td>
</tr>
<tr>
<td>Interest swaps</td>
<td>1600</td>
</tr>
</tbody>
</table>

Source: R. Lowenstein “When Genius Failed: The Rise and Fall of LTCM”
LTCM Returns (cont’d)

Source: P. Jorion “Lessons of Long Term Capital Management
Financial stocks down 50% (fairly representative sample)

Source: Datastream
LTCM period

- Prices moved outside of “normal” ranges and continued to slide
- Normal stabilizers not working - no new “risk capital” entering market (most trying to exit)
- Bank management under pressure to avoid risk of further loss
- Forced liquidation of leveraged positions
- Volume declined in many markets, in some cases dramatically
- Rumors of major financial institutions under pressure
- Increase in derivative exposures and risk of contagion
- Crisis continued for a period, even after LTCM rescue
Comments & Conclusions
Conclusions

Systemic events are not just the „fat tails“ of normal markets; rather they involve fundamentally different processes & actors

Most risk processes and market behavior assumes that markets have a stable distribution – need to be wary around that assumption.

Markets will often converge to trades that provide profits assuming that certain market features are reliable in a given system; high value placed on stability of earnings. This stability can be threatened when trades get overcrowded.

No static „magic formula“ to deter systemic risk. An adaptive system will need an adaptive response.

Source: IB
Growing importance of hedge funds

Source: HFR
Current Conditions: Swap vs Corporate Spreads

Source: Datastream
Current Conditions – Equity volatility

Source: Datastream
Current Conditions – Emerging Markets

Source: Datastream