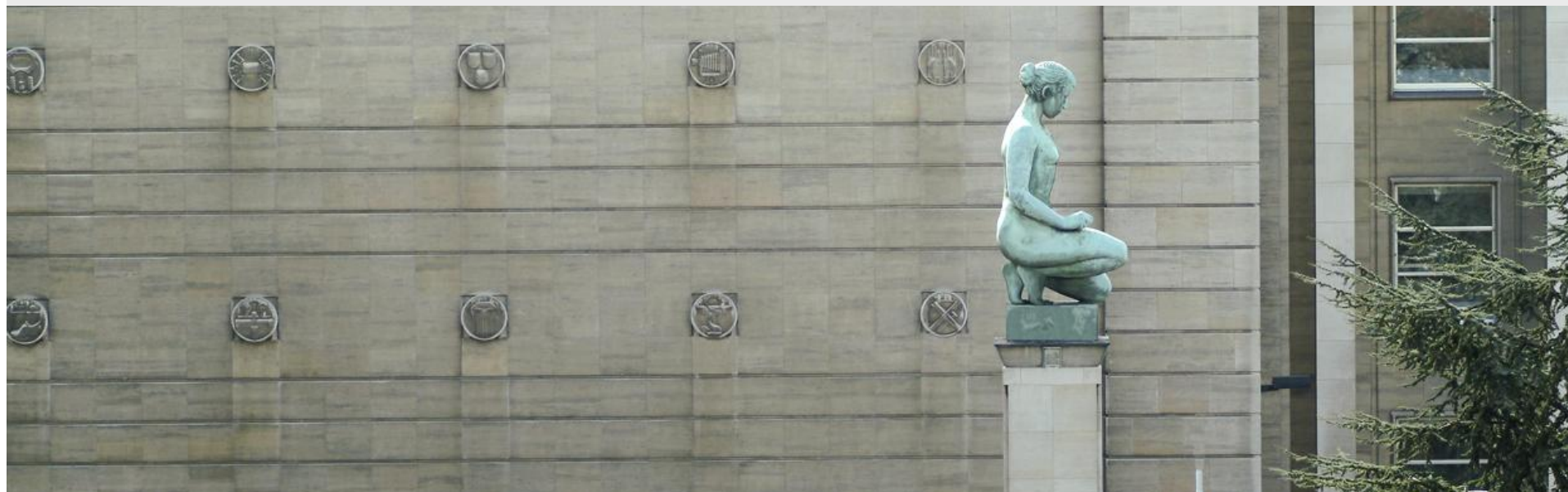


# Credit Derivatives and the Default Risk of Large Complex Financial Institutions

## Discussion

Research conference on "Government intervention and moral hazard in the financial sector", Norges Bank, Oslo, 2-3 September 2010



Stijn Ferrari

## Research questions

- ▶ What was the role played by CDS index markets in the destabilization of banks' balance sheets?
- ▶ Were the banks most affected by the current crisis identifiable under normal market measures, using the CDs market as a sensitivity factor?
- ▶ Could these market measures be used to assist in the identification of other possible casualties as the crisis continues?



# Methodology

- ▶ 16 LCFIs, daily data from 10/2003 to 04/2009
- ▶ step 1: predict time-varying conditional equity volatilities from VAR-MV-GARCH model of equity returns and % spread changes of 2 CDS indices
- ▶ step 2: obtain the value and volatility of assets, D-to-D and PDs from Merton model
- ▶ step 3: do stress testing exercise by simulating a range of asset volatilities from the VAR-MV-GARCH models and computing the required capital injections to maintain a maximum tolerated yearly PD of 1%



# Comments/questions: Result 1

- ▶ Result 1: "CD markets are not effectively functioning as a mechanism of credit risk mitigation having, as a result, destabilizing effects on the financial system"
- ▶ What does the paper aim to measure?
  - "effect of fluctuations in the CDS index market on systemic risk"
- ▶ What does the paper actually measure?
  - banks' (sensitivity to) credit risk exposures
    - "the two CDS indices represent the condition of the global credit market"; "This study looks at banks' sensitivities to the corporate credit risk environment"
    - cfr. Knaup and Wagner (2009) on banks' credit quality



## Comments/questions: Result 1 (ctd)

- no causal effects?
  - omitted variables: e.g. risk aversion, market liquidity and government interventions affect both equity and CDS
  - estimated for each bank separately: interlinkages between banks are not taken into account
  
- ▶ cannot conclude that CD markets have destabilizing effects on the financial system
  - need concentration and value of banks' CDS exposures?
  - discuss channels (credit risk of reference entities, counterparty risk, ...) through which CDS markets affects risk
  - equity value in Merton model not affected by CDS indices?
  - add control variables



## Comments/questions: Result 2

- ▶ Result 2: "information content of the CDS market indices would have led to predict the demise of Bear Stearns as well as the collapse of Lehman Brothers several months in advance"
- ▶ Main RQ and main conclusion of paper, but no discussion in the paper itself on BS and LB events
  - formal test predictive power vs false alarms (but: many of the sampled banks needed intervention)
  - comparison to other predictors of default risk, e.g. the banks' own CDS spreads?
- ▶ Time-varying coefficients? Out-of-sample prediction of crisis based on model estimates over pre-crisis period?



## Comments/questions: Result 3

- ▶ Result 3: "ongoing government re-capitalization programmes considerably underestimate the necessary injections to preserve financial system stability"
- ▶ Increase transparency
  - moving explanation of Appendix D Asset Injection Plots (p 42) to main text
- ▶ Do assumptions bias towards or against finding?
  - normal distribution
  - fixed asset values (and liabilities) through simulation
- ▶ Time-varying coefficients? Lucas critique



## Comments/questions: Other

- ▶ Extension of GARCH to allow for asymmetric volatility responses?
- ▶ More background on individual bank's evolutions in the data, e.g. why do liabilities increase sharply for some banks over the period 2007-2008, timing and effects of government interventions
- ▶ Missing (references to)
  - figures (e.g. impulse response functions, Figure 2 on capital injections)
  - methodology (e.g. matched term risk structure from at-the-money options)

