State-dependent contagion risks: using micro data from Swedish banks

Comments

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Why is this a useful paper ?

- Externalities and the role of central banks

- Contagion through the interbank loan market (Upper and Worms (2004), Degryse and Nguyen (2004), Alessandri et al. (2007))

Why is this a useful paper ?

- 4 players controlling 80% of the assets, 66% of the lending market and 75% of the deposit market.

- Consider both risks coming from correlated exposures and from contagion through the interbank market [Elsinger, Lehar, Summer(2006)]

Contribution of the paper

1. Very rich data: all unsecured exposures that impose credit risk (including off balance-sheet) from 1999Q1.

2. All bilateral exposures (would be useful to compare with entropy maximisation)

Methodology

- First step: estimate multiple default risks from common exposures only (ignoring interbank exposures)

- Second step: add the contagion risk through interbank exposures

Common exposures only

1. Univariate distributions of market value of asset for the 4 banks using the Merton model

2. Dependence structure assumed to be the historical covariance over the sample

3. Simulate asset values based on the MVD and compare with the default point

Common exposures only

- The adjustment made on the default point can be made clearer

- Could also consider a different default point [Chan-Lau and Sy (2006)]

Common exposures only

Using historical correlation is simple but subject to critics…

- Correlation changes over time and is particularly high in period of stress

- Stress test with max correlation

Common exposures only

- No economics. No story…

- Would be more useful if factors were identified

- Get credit and market losses distributions from macro economic stress scenarios instead…

Common exposure and contagion

1. In the case of one bank default, adjust assets of other banks for losses due to exposure to the defaulted bank

2. Look if that implies default of another bank

3. Go to 1.

Common exposure and contagion

- The adjustment made to assets is based on exogenous LGDs.

- How would using a clearing payment vector as in Eisenberg and Noe change the results?

Common exposure and contagion

- The max probability of one default over the sample is still low at 0.14 % without contagion

- The probability of contagion given one default reaches 40% with a LGD of 20% and 80% with an LGD of 40%.

Common exposure and contagion

- May want to consider another type of externality as in Allessandri et al. (2007)

- Balance-sheet effect of asset fire sales of distressed assets.

Conclusion

- Interesting and useful paper

- Great data

- Would gain from more economics

- Could be done through credit and market risk models linked to macro variables

- Would allow for macro stress-testing

- Would avoid the legitimate critic about fully efficient markets taking into account at least the on balance-sheet exposures in the interbank market…

- … and the associated double counting

Thank you!