Discussion: Assessing Systematic Risk in the Insurance Sector

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Growing importance of systematic risk in insurance

- **Relieve of withdrawal costs**: withdrawal taxes are prevented and premia have to be reimbursed within a short period
  - Insurers may face the risk of a growing number of premature withdrawals in times of an economic downturn
  - It cannot be guaranteed that sufficient liquid reserves are available to serve all policyholders that prefer to cancel their contracts
- **Deregulation, Convergence and integration of financial markets**:
  - Insurers have gained access to a larger variety of products and market: equity-linked life insurance contracts, unit-linked life insurance contract
  - Development of complex method of credit risk transfer: Financial guaranty insurer, monoline insurer
- **Reinsurance**
  - counterparty risk or default risk: failure of a large reinsurance company could result in rapid contagion to primary insurers
  - Business cycle in reinsurance industry may affect prices of primary insurers and underwriting volume (see Maiser and Outreville (2003))

Contribution of the paper

- The paper presents an analysis of extreme dependence amongst equity return of direct insurance companies
  - Using data set of equity return of 66 insurance companies between 1999 and 2005
- The analysis is sector specific: life insurance, non-life insurance and composite insurance
- Answer to the following questions:
  - Is the exposure to extreme-event risk diversified away at industry level?
  - Which "external" factors impacts the extreme event risk of individual insurance companies ?
- Three external factors have been proposed to explain extreme dependence between insurance companies
  - Exposure to financial market risk (common exposure to potential market downturn)
  - Exposure to catastrophic shock (earthquake, flooding, hurricane, terrorist attack) or underwriting risk (affecting liability side of the insurer balance sheet)
  - Country effect

Results

- importance of selected factors on extreme dependence between insurance companies (summary of the probit regression)

	% of Tail dependence	Financial market risk	Underwriting risk	Country effect factor
Life insurer	16.67%	significant	insignificant	insignificant
Non-life insurer	5.19%	significant	Significant (Retention)	insignificant
Composite insurer	18.75%	significant	Significant (Retention, Non-life premium, Asset multiplier)	significant

Assessing Systematic Risk in the Insurance Sector

- Composite insurers are larger than life or non-life insurer and they are active internationally
  - In one side, they benefit from the gain of diversification (mutualisation of idiosyncratic risks)
  - In another side, due to their global exposition, they are more exposed to systematic risk (See De Nicolo and Kwast (2002) and Minderhoud (2003))

Systematic vs Pure Contagion Risk

- Do economic difficulties of an insurer have an impact (positive or negative) on viability of other insurers?
  - Negative impact: Regarding equity return of insurance companies, asymmetric information about financial exposure may have an impact on pure contagion risk. A Financial stress in one insurance company may indicate similar difficulties in others.
  - Positive impact: An insurer may benefit from the default of a competitor
- Is it possible to detect pure contagion dependence from pairs of equity return? If yes, how could we formally distinguish pure contagion risk from systematic risk?
  - Could we set a statistical test based on equity return in order to reject the pure contagion hypothesis ?

References

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