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Risk-sharing or risk-taking? Counterparty risk, incentives and margins

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Objectives

- Analyze optimal hedging contracts, assuming there is a moral hazard problem on the side of the protection seller (one single or multiple protection sellers, transferring risk exposure among themselves by retrading)

- Compare two alternative formulation of moral hazard:

- risk-taking (first order stochastic dominance, *Holmstrom and Tirole (1998)* and *Tirole (2005)*)

- risk-shifting (second order stochastic dominance, *Jensen and Meckling (1976)*)

- Evaluate trade-off between risk-sharing and risk-taking (protection seller shirks on effort)

- Analyze the role of initial and variation margins

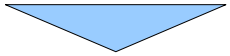
- Identify the channel through which derivative trading can propagate risk, in particular counterparty and systemic risk

Methodology

Analysis approach is based on comparison of optimal hedging contracts under the following sequential hypotheses:

1.effort is observable:

benchmark case against which the inefficiencies generated by moral hazard are identified



2.moral hazard without margins (effort after both a good and a bad signal, no effort after a bad signal (i.e. risk-taking)):

benchmark case against which the effects of margins are assessed

3.moral hazard with variation margins (effort after bad news, no effort after bad news)

4.case of multiple protection sellers, transferring risk exposure among themselves by retrading

Main Results (1/2)

Trade-off between risk-sharing and risk-taking

- Optimal contract under which the protection seller exerts effort after both signals entails limited risk-sharing for the buyer but has no risk-taking by the seller

- Optimal contract with no effort after a bad signal entails full risk-sharing for the protection buyer unless the seller defaults due to risk-taking (counterparty risk)

- Endogenous counterparty risk: optimal choice between the two contracts above depends by the "pledgeable income" threshold level of the protection seller (low pledgeable income → contract with risk-taking)

- Modelling moral hazard with risk-taking is isomorphic to risk-shifting formulation

Role of variation margins

- Optimal contract entailing effort after bad news and limited risk-sharing: margins improve incentives of protection seller, discouraging risk-taking

- Optimal contract without effort after bad news and counterparty risk: margins provide insurance against the protection seller's default

Main Results (2/2)

Multiple protection sellers

- Assuming that protection sellers can retrade the contract among themselves (e.g. novation in the CDS market), some protection sellers can built up by retrading positions whose embedded liability exceeds their pledgeable income.

- Such an excessive accumulation of contracts, and the corresponding counterparty risk, reduce the value of the insurance payment promised to the protection buyer

- In order to face counterparty risk, retrading can be regulated by:

- Requiring that it be allowed only if the protection buyer agrees with it

- Imposing initial margins designed to make accumulating contracts costly and allow to restore protection sellers incentives

Questions (1/2)

1. The paper deals with counterparty risk and systemic risk arising from the interconnectedness of banks and other financial institutions through the derivatives markets.
   It would be interesting to compare the main results of the paper with the recent supervision reform of these topics.

   - From the microprudential point of view, in particular with:
   Basel Committee on Banking Supervision (June 2011), Basel III: A global regulatory framework for more resilient banks and banking systems

   - From the macroprudential point of view, in particular with:
   Basel Committee on Banking Supervision (July 2011), Global systemically important banks: Assessment methodology and the additional loss absorbency requirement

2. Key assumption in the paper: margin deposits are observable and contractible, and contractual provisions calling for margin deposits are enforceable.
   As it is one of the roles of market infrastructures to ensure such contractibility and enforceability, wich kind of derivatives is the paper analysing?

   - Only future style derivatives?

   - What about OTC derivatives?

Questions (2/2)

3. As underlined in the paper, the overall effect of margins on counterparty risk is ambiguous:

- On one hand, margins improve the protection sellers risk-prevention incentives, which makes it more likely that the protection buyer chooses the contract without counterparty risk.
- On the other hand, margins protect the buyer from counterparty risk, which makes it more likely that he indeed chooses the contract with such risk.

- which additional assumption in order to identify the prevailing effect of variation *margins?*