

Discussion of 'Financial Deleveraging and the
International Transmission of Shocks' by
Michael Devereux and James Yetman

Paolo Pesenti

Federal Reserve Bank of New York, NBER and CEPR

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Public kudos to organizers for reserving section of this conference to discussion of global dimensions of crisis.

Excellent selection of paper. Congratulations extended to authors for clever and insightful contribution.

Paper makes its point coherently. Very well written and articulated.

Note for Ken: green light about JMCB publishability.

End of conference: we have all reached our satiation point in terms of technical aspects and modeling techniques. Way more fun to talk about broad issues.

The view of the crisis according to the paper

Critical role of financial markets in international propagation, transmission and magnification of shocks.

Quote: A relatively minor (on a global scale) deterioration in the US subprime mortgage market led to a much larger collapse in the asset values of major US investment banks, which in turn quickly precipitated a major world crisis affecting financial institutions across the globe.

Emphasis on macroeconomic outcomes.

Deleveraging alone may generate an immediate and powerful international transmission of shocks.

Pre-requisite: financial frictions or distortions in credit markets.

My discussion: set of variations upon a theme.

Broad agreement on approach.

However, international transmission mechanism described in the model lacks some key elements to provide fully compelling interpretive framework of recent events.

Probably more appropriate as a description of the crises of the 1990s (Tequila, Asia) where primary engine of contagion were margin calls leading common creditors to unwind positions simultaneously in different national markets, transmitting rapidly the turmoil across countries regardless of standard trade linkages.

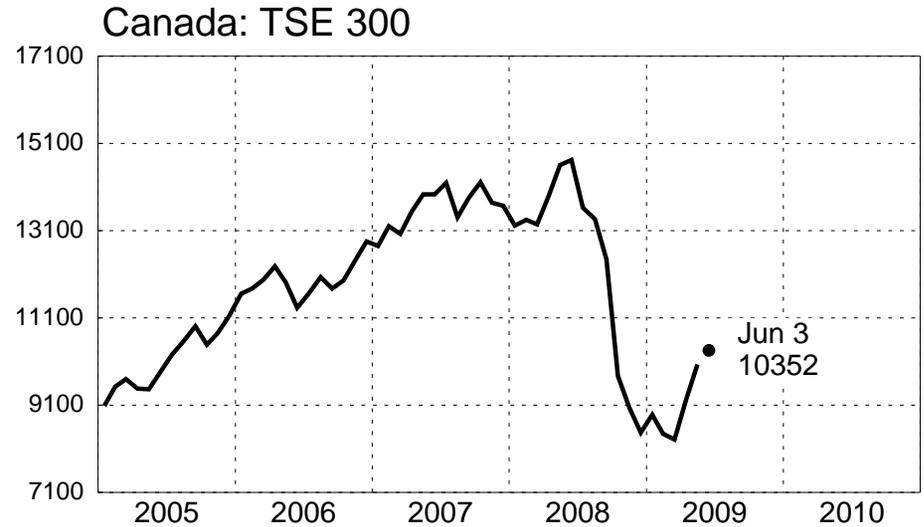
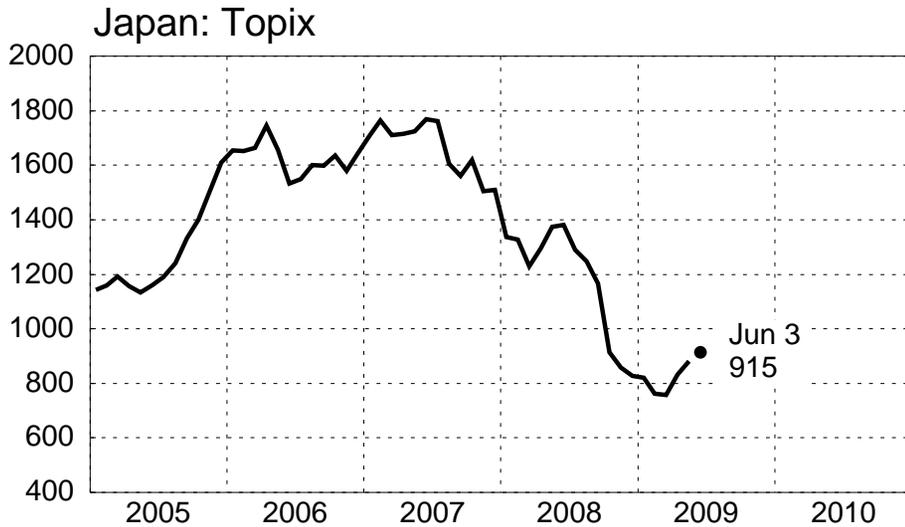
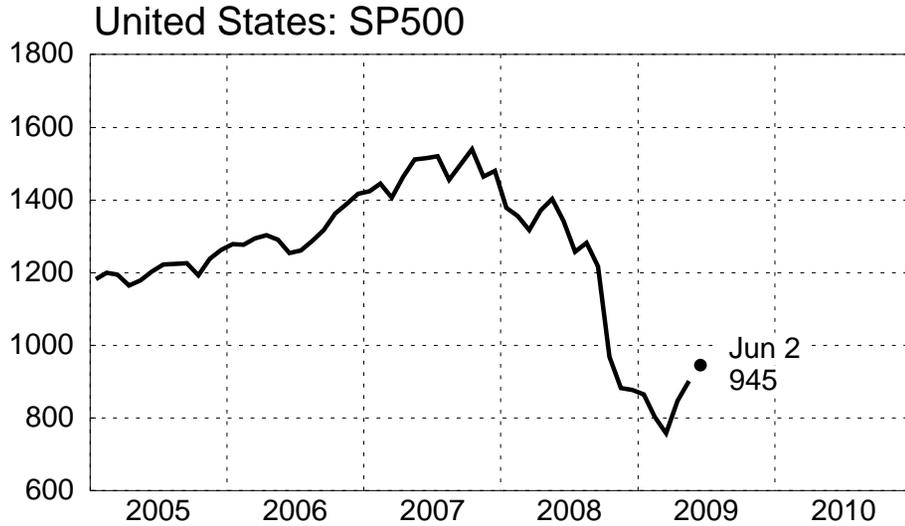
Instead, recent crisis seems to be more appropriately characterized in terms of global common shocks (elaboration to follow).

Global dimensions of crisis: widespread collapse of asset markets worldwide, highly synchronized transmission to national real economies.

A few charts.

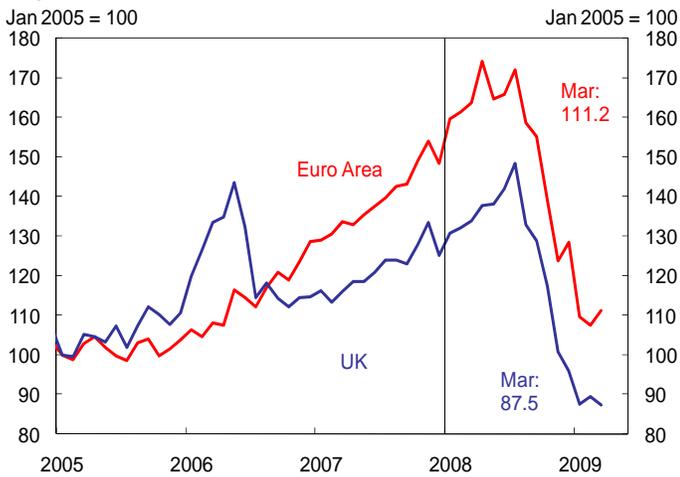
Stock Market Indices

Monthly Average

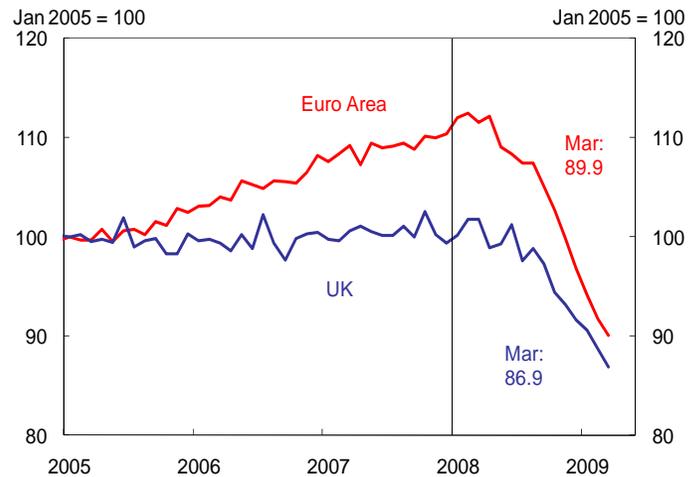


NOTE: Dots represent last reported daily close.
Source: National Sources

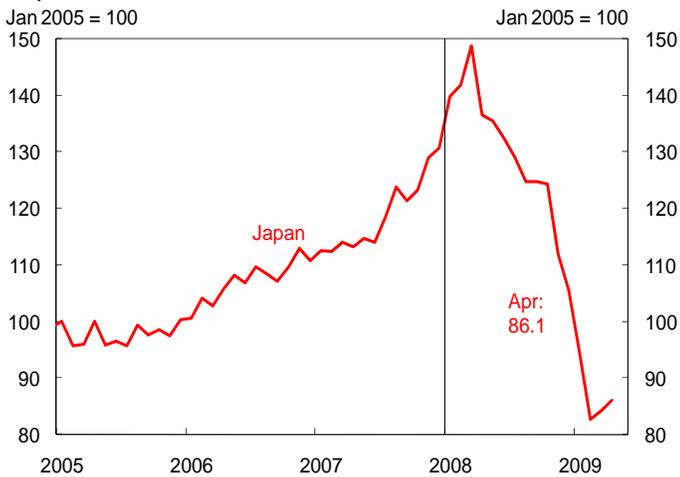
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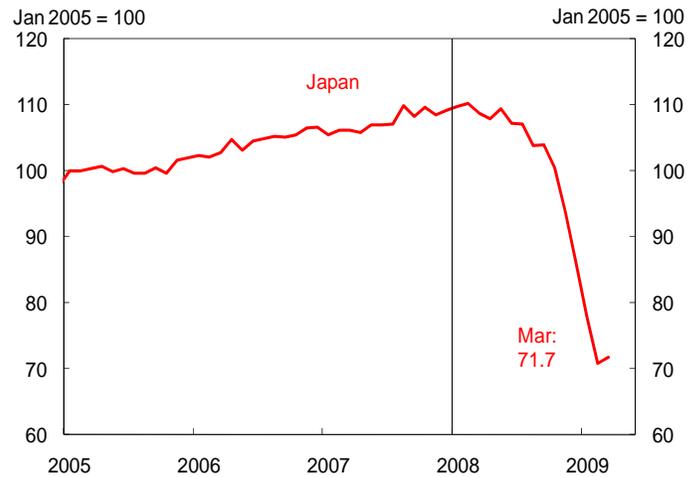
Industrial Production



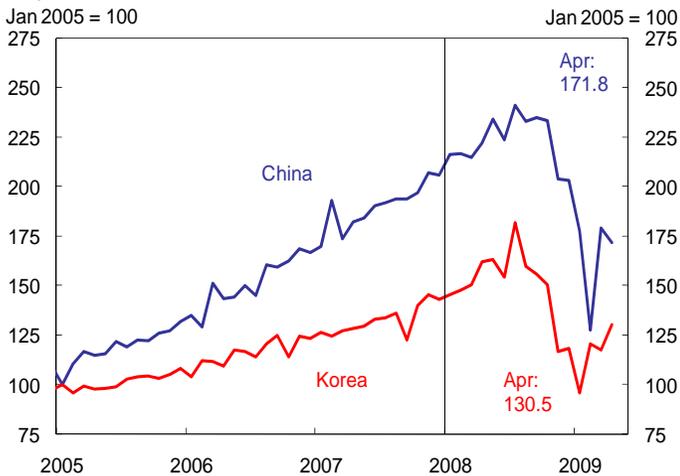
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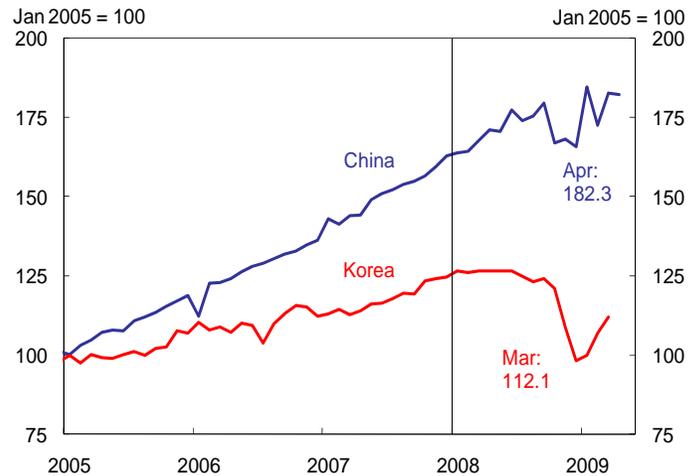
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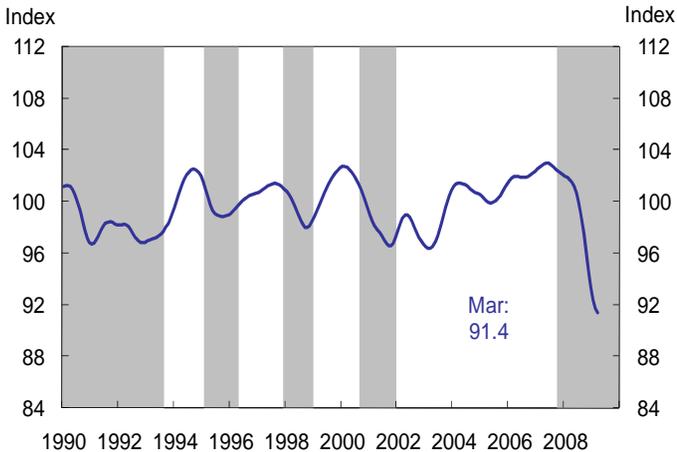
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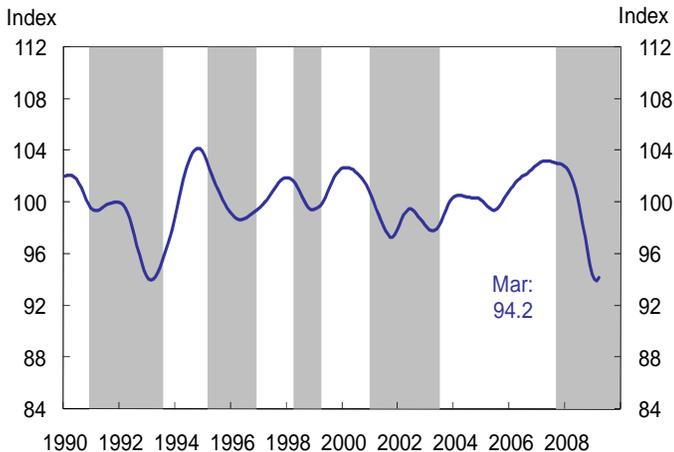
Industrial Production



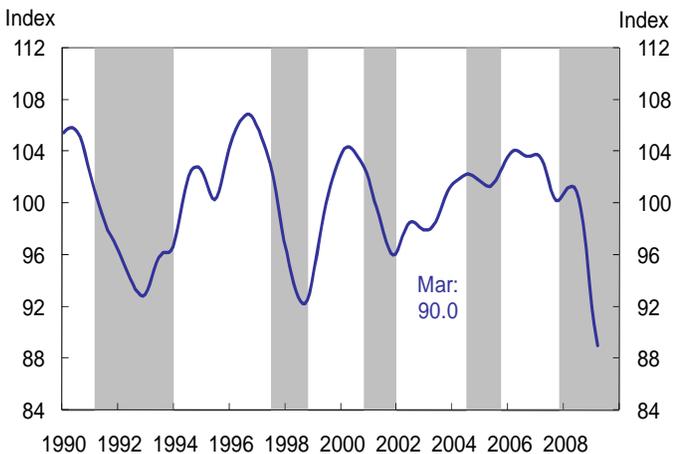
G7



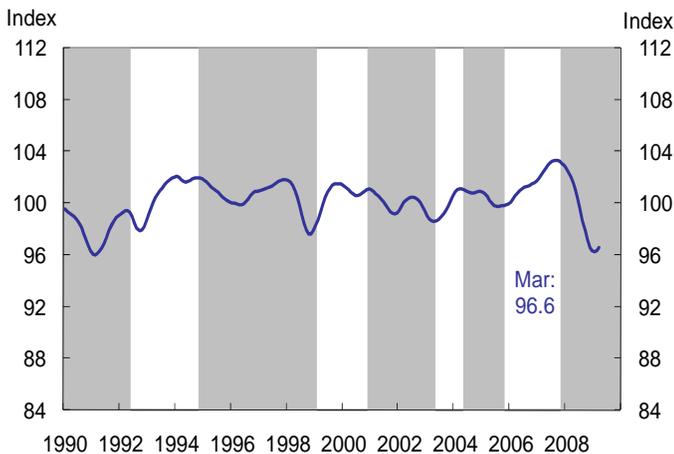
Euro Area



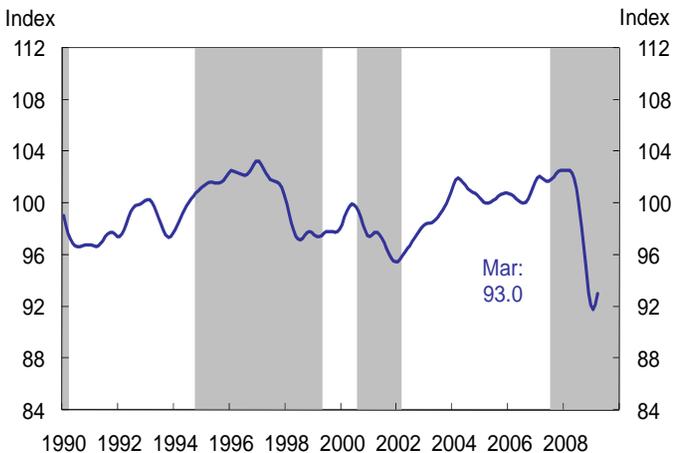
Japan



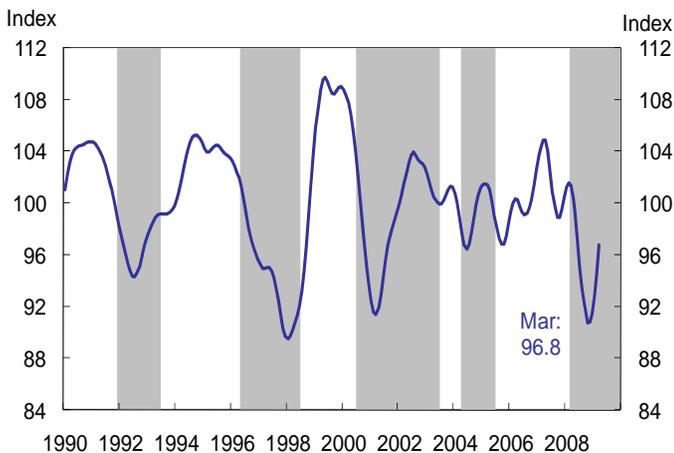
United Kingdom



China



Korea



Model.

Builds on several strands of literature. Credit cycles. Sudden stops. Liquidity and deleveraging. Portfolio selection in open economies.

General equilibrium analysis. Brings everything together in coherent way. Quite a bit of theoretical "grinding" behind the scenes. Everything looks simple and smooth only because authors are mastering their material so well to make it look almost obvious.

Quite an achievement.

In what follows:

Focus on primary ingredients of model.

Deliberately disregard secondary ingredients (equilibrium requirements such as endogenous discount rates, technicalities such as use of non-linear approximations to derive meaningful portfolio allocations, realism enhancements such as transaction costs to achieve partial diversification...).

Essential building blocks:

World economy (Home, Foreign) but one good only. No role for terms of trade/real exchange rate fluctuations. Wholeheartedly agree. Currency movements have played little role in the recent crisis (so far at least, keep your fingers crossed).

Distinction lenders/savers versus borrowers/investors (heterogeneity): market for funds ("bonds" B) needed to finance (purchase of inputs in) production.

Incidentally: Market for bonds is national (there is B and B^*). Not sure this is relevant nor appropriate.

Borrowing/leverage constraint: risk of borrower default, inability to commit to repayment. Specified in terms of market value of equity assets.

$$B_t \leq \kappa (q_{1t}K_{1t} + q_{2t}K_{2t})$$

Crucial: investors in each country face similar leverage constraint with both national assets appearing on RHS. Leverage constraint applies equally to borrowing for domestic or foreign equity purchases.

Quibble 1: Is this the "best" (most appropriate) way to introduce a collateral constraint? Grey area.

One could write the leverage constraint in terms of purely domestic assets (only domestic assets can be pledged as collateral).

Then the transmission channels emphasized in the paper (interconnected portfolios) pretty much disappear.

Quibble 2: κ treated as parameter, plays no role in model. But it could be the most important variable in the whole model.

Story:

Shock in Home country (US/Euro area) leads to fall in q_1 . Leverage constraints become binding. Sell assets (fire sales of illiquid assets to meet margin calls).

Leads to further asset price declines (q_2 as well).

Leads to further deleveraging. not only in Home country but also in Foreign country (Asia) not hit by original shock.

Borrowing falls worldwide. Production falls worldwide. Magnification and international transmission.

What do people think about global dimensions of crisis? Transmission or common shocks?

Two quotes (longish but representative) emphasizing common factors.

Carmen Reinhart (my italics) on transmission among industrial countries

There is little doubt that the *US crisis has spilled over into other markets*. Two major advanced economies, Japan and Germany, have been singled out by the financial press as being particularly hard hit. Indeed, after the fact, it has become evident that financial institutions in these countries had non-trivial exposure to the US subprime market. This is a *classic channel of transmission or contagion, through which a crisis in one country spreads across international borders*.

In the present context, however, contagion or spillovers are only a part of the story

If other countries are experiencing economic difficulties at the same time as the United States, it is due to the fact that *many of the features that characterized the run-up to the subprime crisis in the United States were also present in many other advanced economies.*

Specifically, many countries in Europe and elsewhere were having their own home-grown real-estate bubbles. *This, in and of itself, makes these countries vulnerable to the usual nasty consequences of asset-market crashes, irrespective of what may be happening in the United States.*

This cannot be pinned on the US subprime fiasco or on contagion. The odds of a correction were already present.

IMF WEO (my italics) on transmission of stress from advanced to emerging economies.

The current crisis in advanced economies is much more severe than any since 1980, *affecting all segments of the financial system in all major regions.*

The unprecedented spike in financial stress in advanced economies in the third quarter of 2008 had a major effect on emerging economies. In the fourth quarter, financial stress was elevated in all emerging regions and, on average, exceeded levels seen during the Asian crisis. *There is a strong link between financial stress in advanced and emerging economies, with crises tending to occur at the same time in both.*

The strong comovement of stress across emerging economies suggests that common factors play a role. One of these factors could be financial stress in advanced economies.

We present empirical evidence indicating that *stress in advanced and emerging economies is closely linked.*

Revisitation of the model in light of insightful analysis by Gorton 2009.

Think of the world economy (Home and Foreign) as participating in a large, interconnected, global repo market.

Think of savers/lenders as "depositors" (firms seeking a safe place to save cash in the short term): money market funds, corporations, insurance companies, pension funds, hedge funds.

Depositors lend funds (the B of the model) in the repo market and receive collateral for their deposits.

Recall

$$B_t \leq \kappa (q_{1t}K_{1t} + q_{2t}K_{2t})$$

and reinterpret as collateral constraint.

Think of borrowers as "banks" (shadow banking system). Leveraged financial intermediaries.

Think of K as securitized tranches (MBS...) pledged as collateral (evidence that demand for collateral grew to include securitized products precisely because of growing need for collateral in repo banking system).

Somewhat linked to fundamentals (mortgages), but roots (cash flows from assets) lost through complex packaging (securitization).

Deemed to be informationally-insensitive=immune to adverse selection by privately informed agents (senior, backed by portfolios, high credit ratings... perceived as almost as good as traditional insured deposits)

Collateral involves a haircut or margin $(1 - \kappa)$. A borrower can borrow \$95 for each \$100 pledged as collateral, haircut of 5%.

Haircut protects the depositors against the risk of borrower default.

Reflects credit risk of borrower and riskiness of pledged collateral.

” Depositors” can withdraw their funds by not rolling over their repo agreements and returning the collateral, or by increasing the haircut.

Like demand deposits at regulated commercial banks, this system is vulnerable to panic.

Global shadow banking system resembles pre-FDIC U.S. banking system.

Elements to develop an interpretation of global financial crisis.

Three dimensions.

1) The one stressed in the paper.

Correction in asset values somewhere (sub-prime crisis, fall in housing prices) transmits to other asset classes everywhere else through margin calls and widespread deleveraging.

2) Panic in repo market.

Run on shadow banking system when "depositors" require increasing haircuts due to concern about value and liquidity of the collateral should the counterparty fail.

κ falls sharply (average repo haircuts on structured debt are zero until August 2007, 10% end of 2007, 40% after Lehman).

In interconnected credit market, shock is global in nature. Worldwide freeze of credit market.

LIBOR-OIS spread and similar foreign measures jump. Borrower default not key element: creditors' reluctance to lend is key, confidence crisis in global interbank market, credit lines dry up.

3) Collateral securities that used to be perceived as informationally insensitive (good as insured deposits) suddenly become informationally sensitive (toxic assets).

It becomes profitable to produce information and speculate on the value of these securities.

Uncertainty about valuations (lemons market) makes them illiquid.

Devastating regime switch, worldwide flight to quality.

Transmission to real economy immediate.

No resources available to fund consumption/investment decisions.

Simultaneous wealth and demand shock worldwide.

Orders plunge. Industrial production nosedives. Sharp contraction in trade volumes, both because of direct dry-up of export credit and indirect fall in world demand.

Simultaneously and everywhere.

(Note for panelists to follow: how to avoid repetition of all this going forward?

Hint: may involve combination of guarantees, oversight and regulation...)

Summary:

1) What is the shock?

2) Who are the Lenders? Who are the Investors?

3) What is Home? What is Foreign?

In the paper:

- 1) "Productivity" shock. Reduces asset prices somewhere (say housing prices in US). Transmitted everywhere.
- 2) Unclear. Not terribly important. Emphasis on heterogeneity.
- 3) US/Euro area versus Asia

Suggested dimensions (extensions?) to be considered

1) Confidence, mainly.

2) Shadow banking system and counterparties.

3) No Home, no Foreign. We all live (and scramble for liquidity) in a global repo market.