



The World Bank Group
DECRG



Contagion as Domino Effect in Global Stock Markets

Discussion

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Main Findings

- This paper empirically examines how local emerging market stock market crashes evolve into more severe stock market crashes.
- The main findings are:
 - Bond market returns, interest rate levels and stock market volatility are important determinants of local, regional, and global crashes, while currency changes are not;
 - Global crashes are economically and statistically significantly related to previous day local and regional crashes in emerging markets;
 - Yet, a previous day crisis does not affect the statistical significance of the relation between macro/financial variables and crash likelihood.



Main Contributions

- The main contributions of the paper are:
 - Explicitly distinguishing between local, regional, and global crashes;
 - New research in the debate on contagion and interdependence;
 - A novel investigation of the inter-dependencies of markets at the global level.



Definition of 'Crash'

- A '*crash*' is defined as the daily return below the lower 5th quintile in the empirical return distribution.
- Does this allow for the distribution to change over time or not? Volatility changes... and therefore in certain periods it is more likely to have daily returns in the tails of the distribution while in other periods this much more unlikely.



Definition of Events

- The definition of a **local** crash is when 1-3 individual emerging markets experience a crash.
- The definition of a **regional** crash is either:
 - For the regional index to 'crash'; or
 - When 4 or more countries indices in the region 'crash'.
- The definition of a **global** crash is the simultaneous occurrence of **two or more regional crashes** (1 of which must be in EU or US)



Definition of Events

- The S&P/IFC regional indices assign country weights based on market capitalization.
- As of August 31, 2004, the weightings result in the regional indices being driven by only a few countries:

<u>Country</u>	<u>Weight</u>	<u>Country</u>	<u>Weight</u>
Argentina	2.90%	China	16.10%
Brazil	49.70%	India	9.70%
Chile	10.70%	Indonesia	3.30%
Colombia	0.70%	Korea	34.70%
Mexico	33.20%	Malaysia	8.40%
Peru	2.80%	Pakistan	0.40%
		Philippines	1.00%
		Taiwan	21.60%
		Thailand	4.80%



- Multivariate binary logits....
 - The definition of binary variables could be made in several different ways: no crash vs. some type of crash, etc.
 - Try to model directly the correlation between crashes, which could provide some additional evidence regarding the existence or not of contagion.
 - The advantage of a multivariate binary model is that it would allow for correlation between crashes & market returns.
 - The paper claims that there is a contagion effect between crashes, but the ordered logits impose a conditional independence.



Robustness and Discussion

- Is contagion more likely to show up with 1-day or 1-week or 1-month return?
 - With the herd behavior of investors and cascade effects the process of contagion might take more time to show up.
 - As the authors note, the 1997 Asian crisis infected other developing countries, but this process took place over a series of months and not overnight.
- ADRs....Do they matter?
 - Larger trading of ADR shares of Latin American stocks – does this affect local volatility?



Suggestions

- The authors could construct an equal weighting of each country when defining a regional crash.
- Discuss better why we should care about daily returns and not weekly or monthly returns when defining crashes.
- Pay more attention to the changes in volatility that occur over time, which might substantially affect the identification of crashes. (see literature on Value at Risk - VaR)
- Explore the literature on herd behavior and cascade effects more in order to understand the timing of events.