Measuring Systemic Risk

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Discussion by Monica Billio

Background

- Current financial regulations seek to limit each institution's risk

- However, unless external costs of systemic risk are internalized by each financial institution, the institution will have the incentive to take risks that are borne by all

Objectives

- Introduce a model-based and practically relevant measure of systemic risk

- Measure the contribution of each single financial institution to systemic risk

- Support regulators to define rules able to limit systemic risk

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Measure   proposed

- Systemic expected shortfall (SES):

- SES=f(MES,leverage)

- Institutions internalize their externality if they are "taxed" based on SES

Out of sample

- How good is this measure?

- Crisis 2007-2009
- MES: losses and CDS
- Stress Test: Supervisory Capital Assessment Program (Spring 2009)

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Comments

This measure has many of the advantages a systemic risk measure should have, since it is able to measure the four "L":

– Leverage

– Liquidity

– Linkages

– Losses

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Comments

- Systemic risk is certainly a complex concept and maybe more than one measure can be helpful in identifying and quantify it

- In Billio, Getmansky, Lo and Pelizzon (2011) we propose other measures to capture systemic risk based on Granger causality networks

- To show how relevant it is the use of more than one measure we performed an out of sample analysis and combine ours and the MES measure

Comments

- *We provide out-of-sample results for our measure (# of "Out" Connections causality measure) and MES*

- *Measures are calculated over July 2005 – June 2007 and the out-of-sample period is July 2007 - December 2008*

- *Weekly frequency*

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Comments

- *We have performed a rank regression*

$$rank_{i,loss,t+1} = \alpha + \beta_1(rank_{i,MES,t}) + \beta_2(rank_{i,out,t}) + e_{t+1}$$

	Coeff	t-stat	p-value	R-square
alpha	11.05	1.81	0.08	0.13
Out	0.32	2.35	0.02	
MES	0.26	1.89	0.06	

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To Sum Up

- Excellent paper that addresses and answers very important questions!
- Interesting positive and normative insights on the regulation of the systemic risk

- Enjoy reading it!

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