



SAID BUSINESS SCHOOL, University of Oxford

## SEMINAR SERIES / Hilary 2012

Convenor: Felix Reed-Tsochas, Institute for Science, Innovation and Society,  
Saïd Business School

For further  
information please  
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Seminar webpage:  
[www.cabdyn.ox.ac.uk/complexity\\_seminars.asp](http://www.cabdyn.ox.ac.uk/complexity_seminars.asp)

Sandwiches and  
drinks will be  
provided

Please note: although  
the seminar  
programme detailed  
was correct at time of  
printing, seminar  
arrangements are  
subject to change -  
for the latest  
information, please  
check the seminar  
webpage.

**Tuesday 14<sup>th</sup> February**  
(12.30pm - 2.00pm) Seminar Room 13

**Dr Lavan Mahadeva**  
Oxford Institute for Energy Studies

### 'Risk sharing or contagion in the build up to the crisis?'

#### ABSTRACT

Systemic risk among the network of international banking groups arises when financial stress threatens to crisscross many national boundaries and expose imperfect international coordination. To assess this risk, we use Rosvall and Bergstrom's (PNAS, 2008, 1118-1123) information theoretic map equation to partition banking groups from 21 countries into modules. We consider a quarter of a century of data on the cross-border interbank market. We show that in the late 1980s four important financial centres formed one large super cluster that was highly contagious in terms of transmission of stress within its ranks, but less contagious on a global scale. But the expansion leading to the 2008 crisis left more transmitting hubs sharing the same total influence as a few large modules had previously. We show that this greater entanglement meant the network was more broadly contagious, and not that risk was more shared. Thus, our analysis contributes to our understanding as to why defaults in US sub-prime mortgages spread quickly through the network. Lavan will also present some other examples of interconnectedness in the recent crisis to stimulate discussion.



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