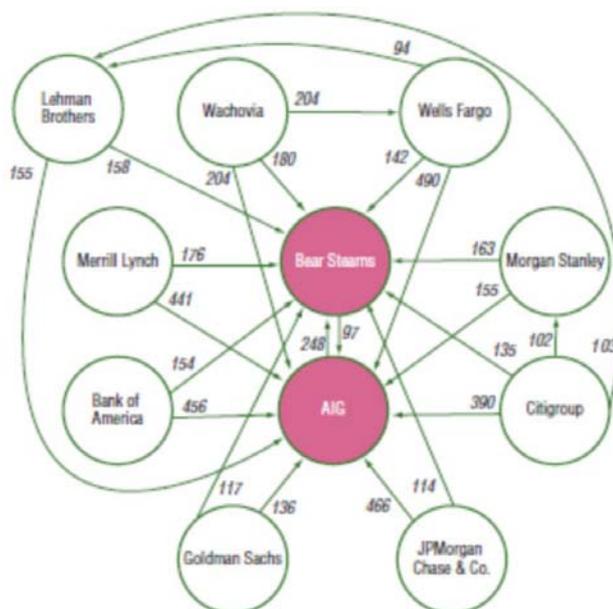


desired risk-taking profile and leverage, given their strong capital position. In such a scenario, banks take on more of each others' debts and the intertwining of claims and liabilities become more far-reaching. The image is of an increasingly elaborate edifice built on the same narrow foundation, so that the structure becomes more and more precarious. The systemic risks therefore increase during the boom scenario.

Figure 8 is the map of CoVaR measures for the conditional Value at Risk for US financial institutions (conditional on distress of another institution) (Adrian and Brunnermeier (2009), IMF (2009)). Andy Haldane (2009) has recently highlighted the highly interconnected nature of financial institutions in the run-up to the financial crisis.

Figure 8
US financial institutions' co-risk measure



Source: IMF global financial stability report, April 2009

Our accounting identity above shows why such closely interconnected balance sheets is a necessary feature of a boom scenario when banks have strong capital positions and measured risks are low. For any fixed pool of funding to be drawn from the household sector, any substantial increase in balance sheet size of the financial intermediaries can be achieved only by *borrowing and lending from each other*. The key variables are the $\{z_i\}$, which gives the proportion of funding obtained from outside the intermediary sector. In order to increase the profile of leverage $\{\lambda_i\}$ within the intermediary sector, banks must lower the funding profile $\{z_i\}$, since they are competing for the same limited pool of outside funding. Banks can raise their risk exposure to their desired level only by borrowing and lending between themselves, since outside funding is inadequate to meet their growing needs.

An architectural analogy is appropriate. In order to build additional rooms into a house whose footprint is limited by shortage of land, the only way is to build upward - like a skyscraper in Manhattan. The lower is the funding profile $\{z_i\}$, the taller is the skyscraper. However, even this analogy is somewhat misleading in that the Manhattan skyscraper would be planned in advance and built as a coherent whole. An interconnected financial system that builds upward is much less coordinated, and hence is liable to result in greater unintended spillover effects. It would be as if additional floors are built on top of existing ones, where the architects of lower floors did not anticipate further building on top.³