

Wholesale funding market freeze, security loss in a dynamic model of banking¹

Jochen Mankart¹ Alex Michaelides² Spyros Pagratis³

¹Deutsche Bundesbank

²Imperial College London

³Athens University of Economics and Business

November 2015

¹The views expressed in this presentation represent the authors' personal opinions and do not necessarily reflect those of the Deutsche Bundesbank.

Basic idea

- Huge amount of cross sectional heterogeneity in banks balance sheets.
- Different exposures to funding risks.
- Use a quantitative structural model to assess this.
- Investigate role of policy instruments like liquidity requirements.

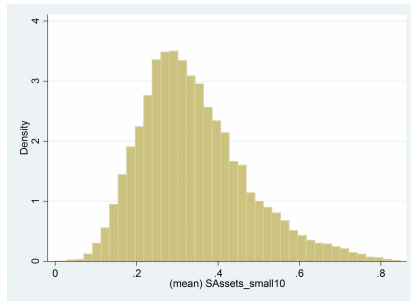
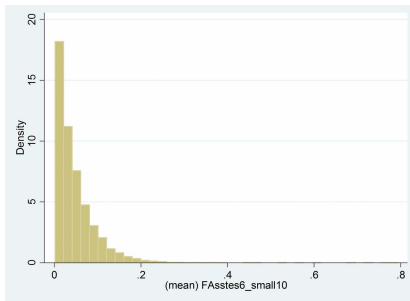
Our starting point: stylized balance sheet

Assets	Liabilities
loans L_t	deposits D_t
safe securities S_t^s	short term liabilities F_t
risky securities S_t^r	equity E_t

Balance sheets by size in 2010 Q4; 6'871 banks

size percentile	$\leq 95^{th}$	95 – 98	≥ 98
Number of banks	6528	206	137
Mean assets (2010 \$million)	238	2715	72000
Median assets (2010 \$million)	141	2424	13600
Frac. total system as.	13%	5%	82%
<u>Assets</u> (in % of tangible asset)			
Cash	9%	7%	7%
Securities	21%	21%	20%
Fed funds lent & rev. repo	2%	1%	2%
Loans to customers	62%	64%	61%
<i>Real estate loans</i>	45%	49%	38%
<i>C&I loans</i>	9%	10%	11%
<i>Loans to individuals</i>	4%	5%	11%
<u>Liabilities</u> (in % of tangible asset)			
Total Deposits	85%	79%	68%
<i>Transaction deposits</i>	22%	10%	7%
<i>Non-transaction deposits</i>	63%	70%	61%
Fed funds borrowed & repo	1%	4%	6%
Other liabilities	4%	7%	16%
Tangible equity	10%	9%	10%

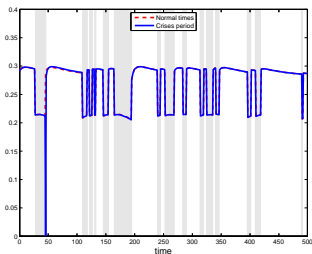
Heterogeneity: Wholesale Borrowing & Securities



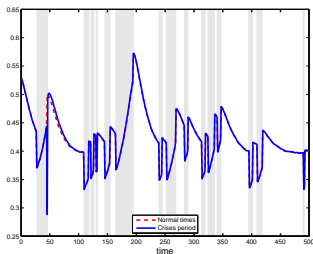
Money market freeze: result

Big banks

Wholesale borrowing



Securities



- Banks compensate lost funds by reducing securities.
- Failure rate in crises period increases from 0.65% to 1.1% for big banks.
- However a return shock (fire sales) affects big and small banks similarly, though.

Forced Sales

	Normal recession	Freeze	(fire sale) losses	both
Small banks	0.58%	0.58%	3.2%	3.3%
Large banks	0.65%	1.1%	3.5%	3.6%

Table: Failure rates in different crisis periods