



Understanding Financial Interconnectedness

Key Messages

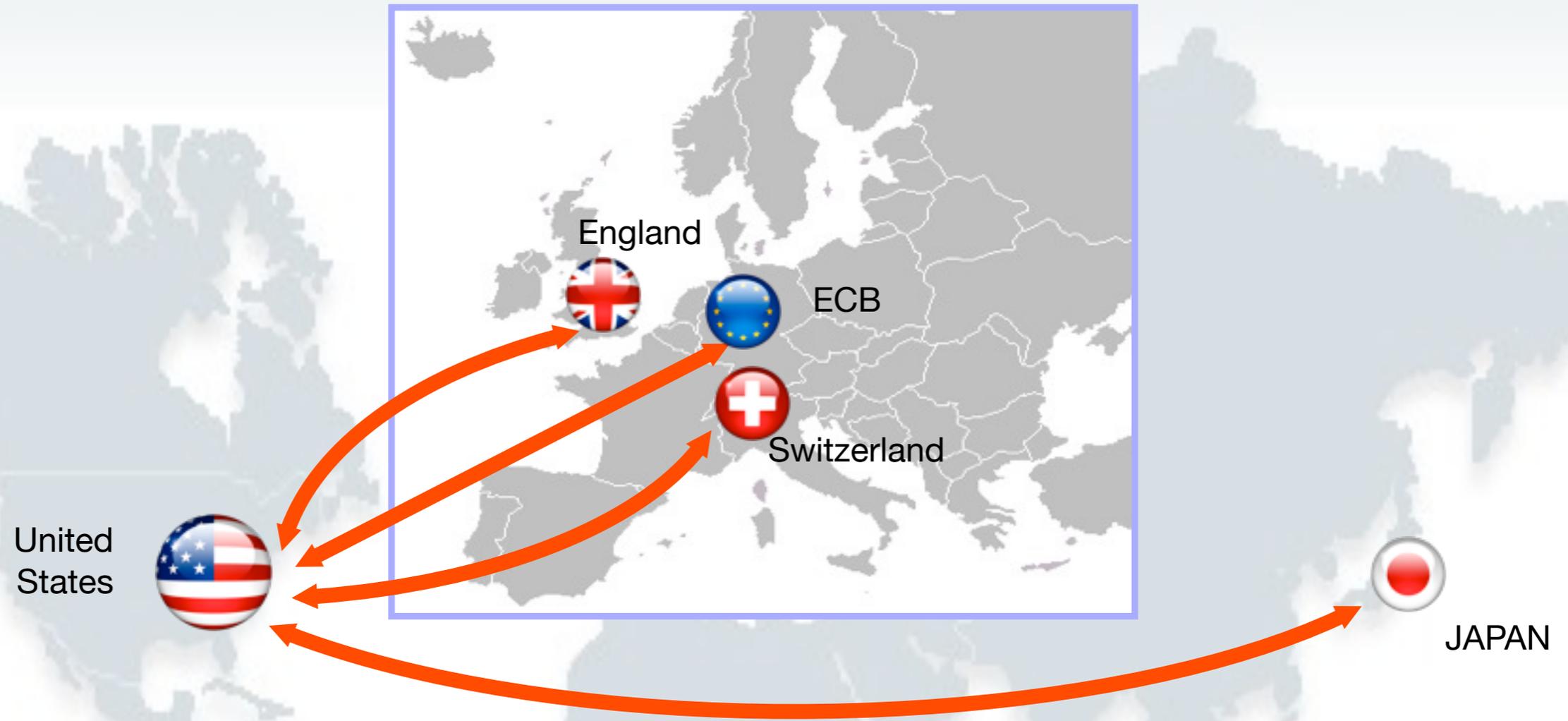
Utility

Bilateral surveillance

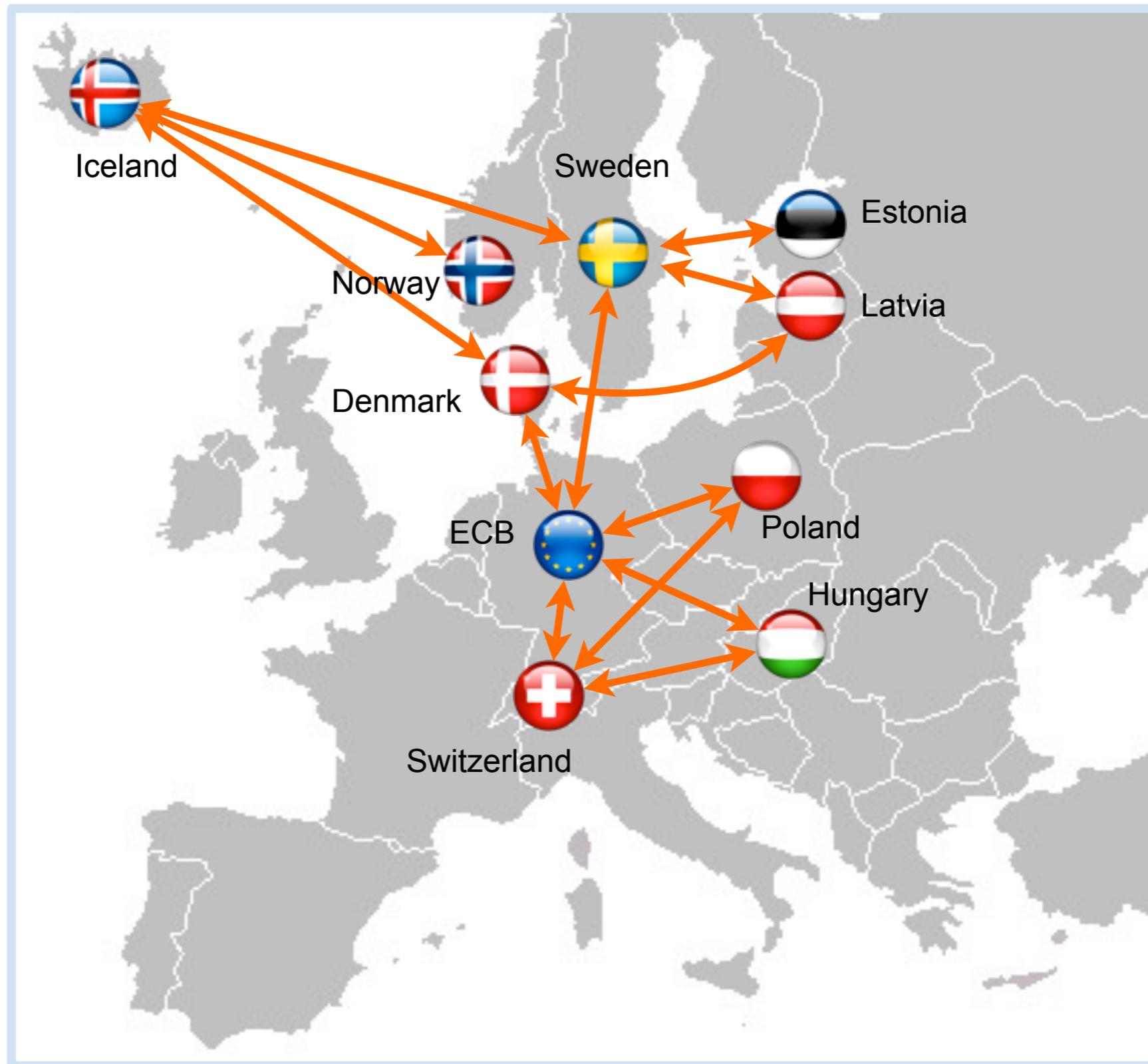
Multilateral surveillance

Macro-prudential policies

Swap Lines



Swap Lines



Swap Lines



Key Messages

Utility

Bilateral surveillance

Multilateral surveillance

Macro-prudential policies

Architecture of global finance

Concentrated

Interconnected

Related “fault lines”

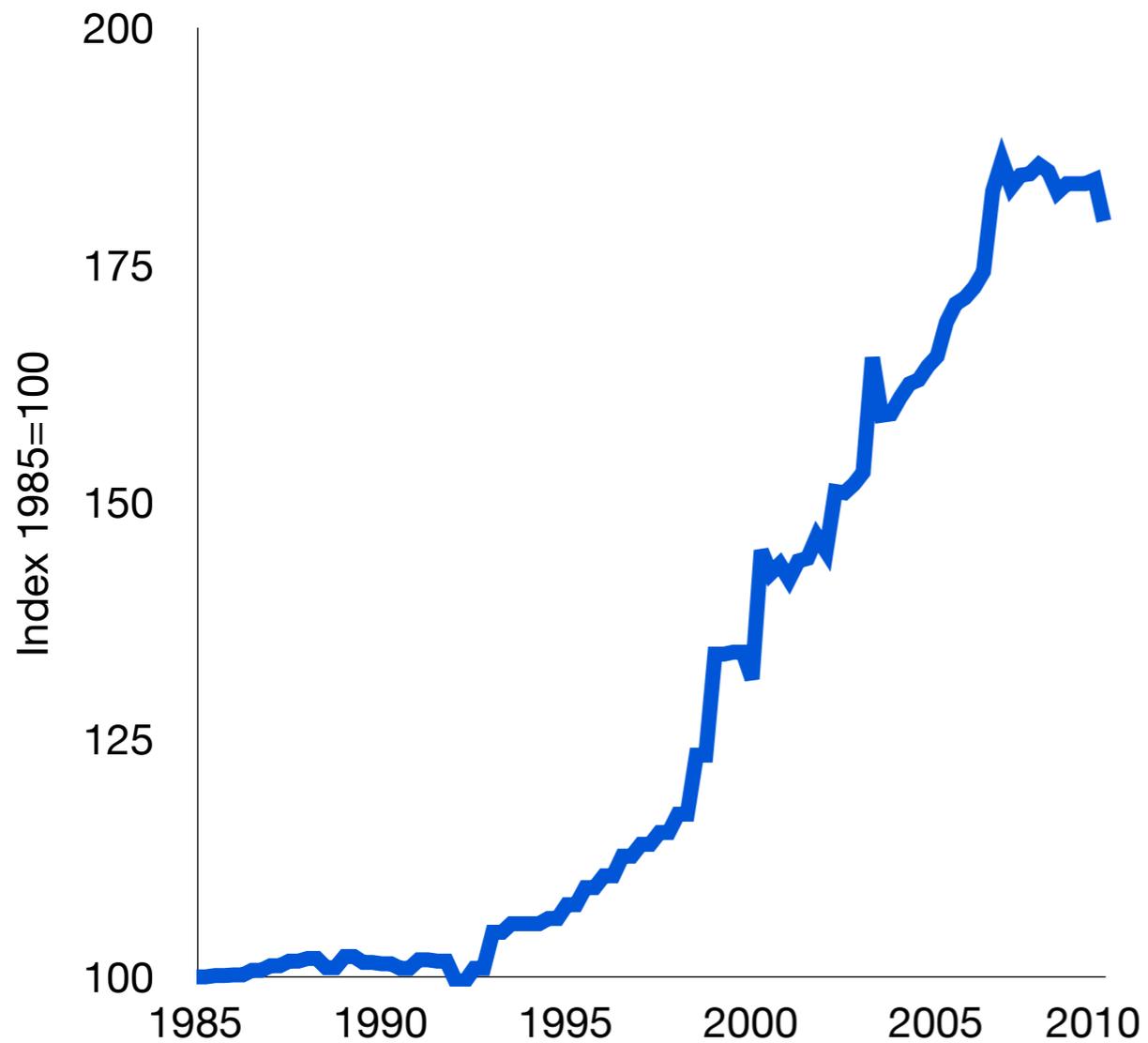
Funding

Ratings

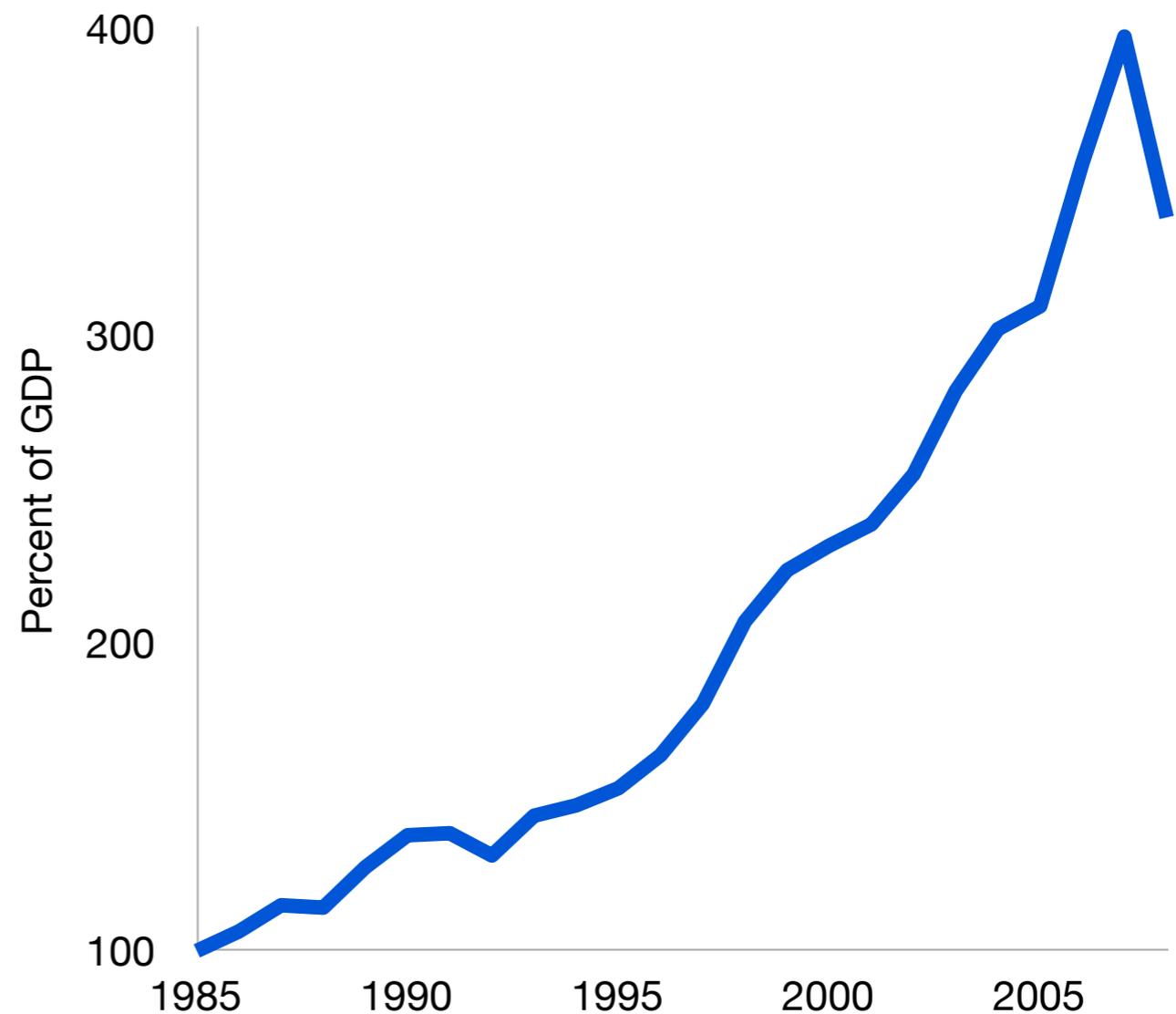
Payments platforms

Measuring Interconnectedness

Interconnectedness Index*



Total External Assets+Liabilities



*: Financial interconnectedness = number of bilateral connections/total number of possible bilateral connections

LCFIs

About 20 key LCFIs

- Top book runners (BoE)
- Banks & nonbanks (funds)
- Global ALM
- Highly correlated markets

Infrastructure

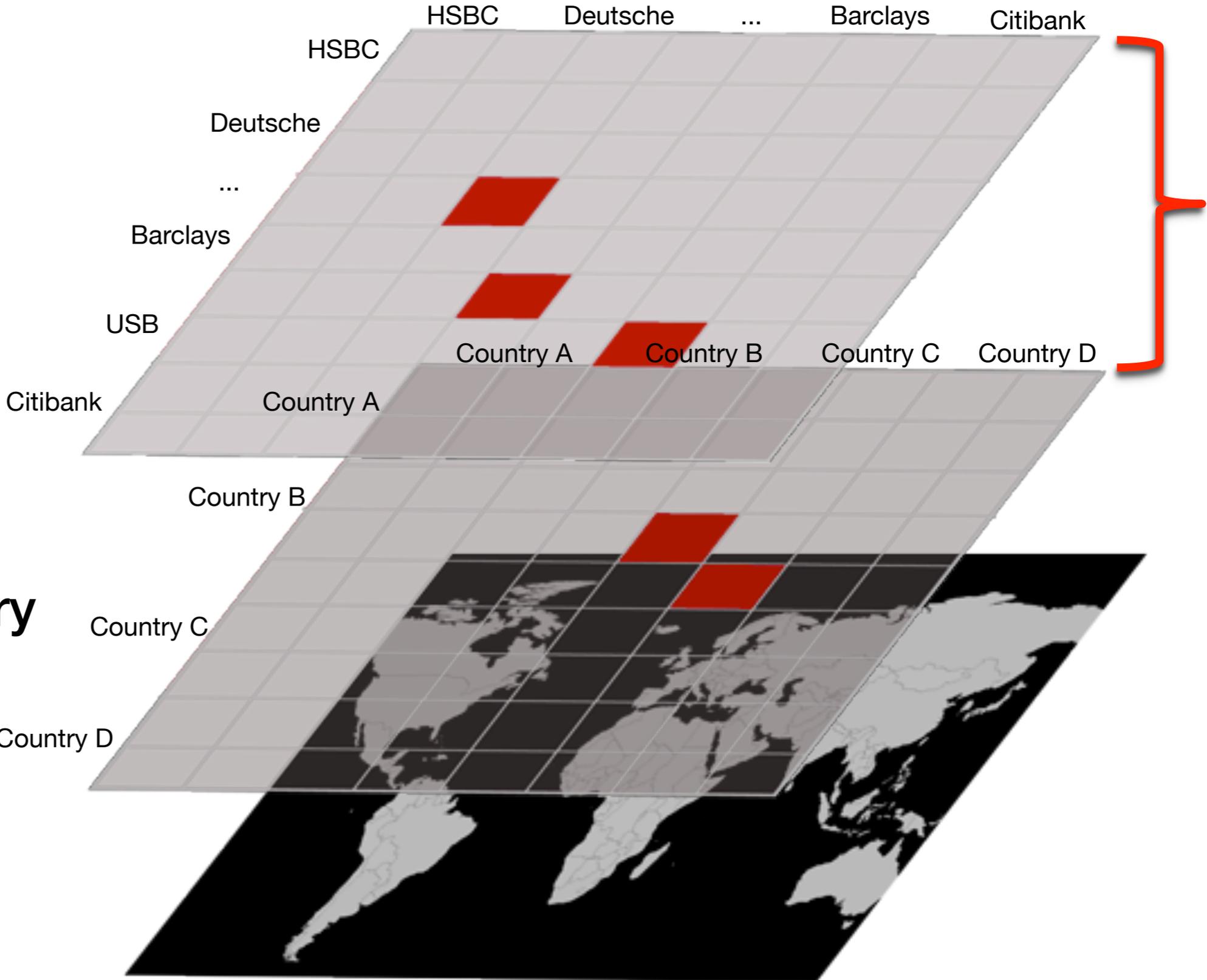
- Custodians
- Payment and settlement

JPMorgan Chase *	US
Barclays Bank PLC	UK
Deutsche Bank AG	Germany
Bank of America	US
HSBC	UK
Credit Suisse Group	Switzerland
Citigroup *	US
UBS	Switzerland
BNP Paribas	France
RBS	UK
Goldman Sachs	US
Morgan Stanley	US
Credit Agricole SA	France
Lloyds Banking Group	UK
Rabobank	Netherlands
Wells Fargo	US
State Street *	US
BNY Mellon *	US

* Some of the largest holders of custody assets.

Data and Risk Maps

**LCFI-
exposures**



**Country-country
exposure**

Financial Interconnections

Banking System

(cross-border bank claims = \$30 Trillion)



Source: BIS reporting banks

Financial Interconnections

Banking System

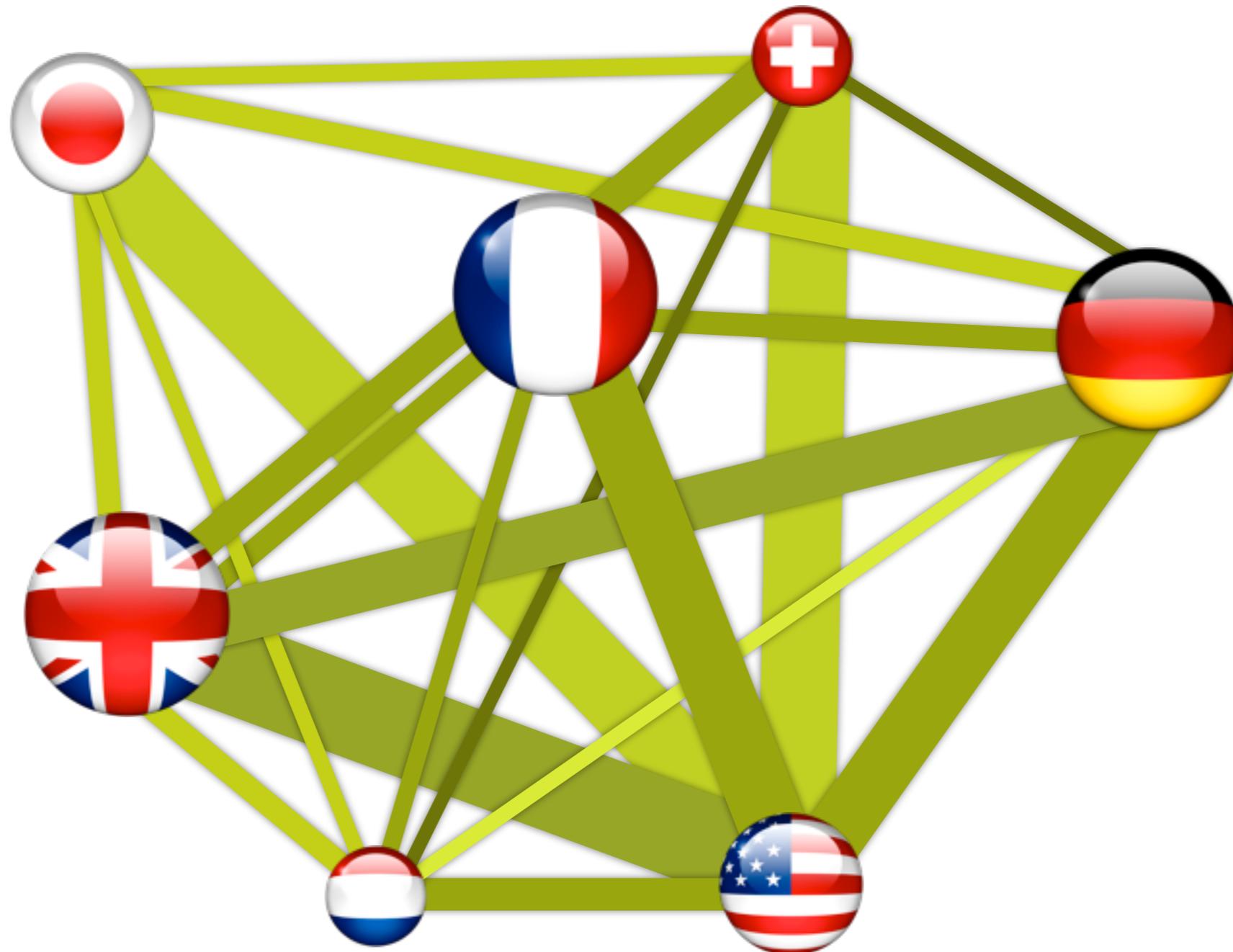
(cross-border bank claims = \$30 Trillion)



Source: BIS reporting banks

Financial Interconnections

Banking System
(cross-border bank claims = \$30 Trillion)  = Net bilateral exposures

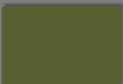


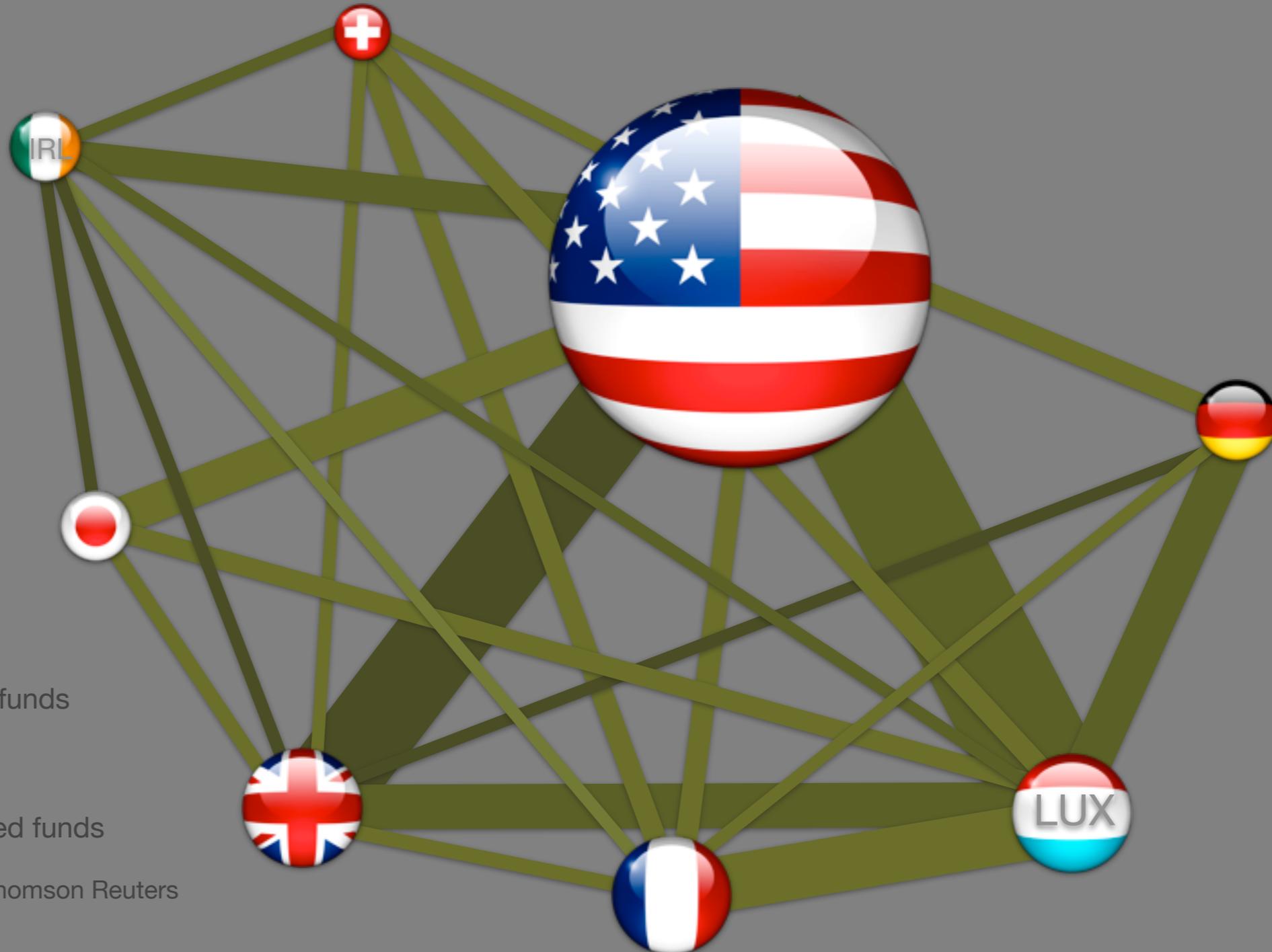
Source: BIS reporting banks

Financial Interconnections

“Shadow” Banking System

(total claims = \$25 Trillion)

 = Net bilateral exposures



Coverage:

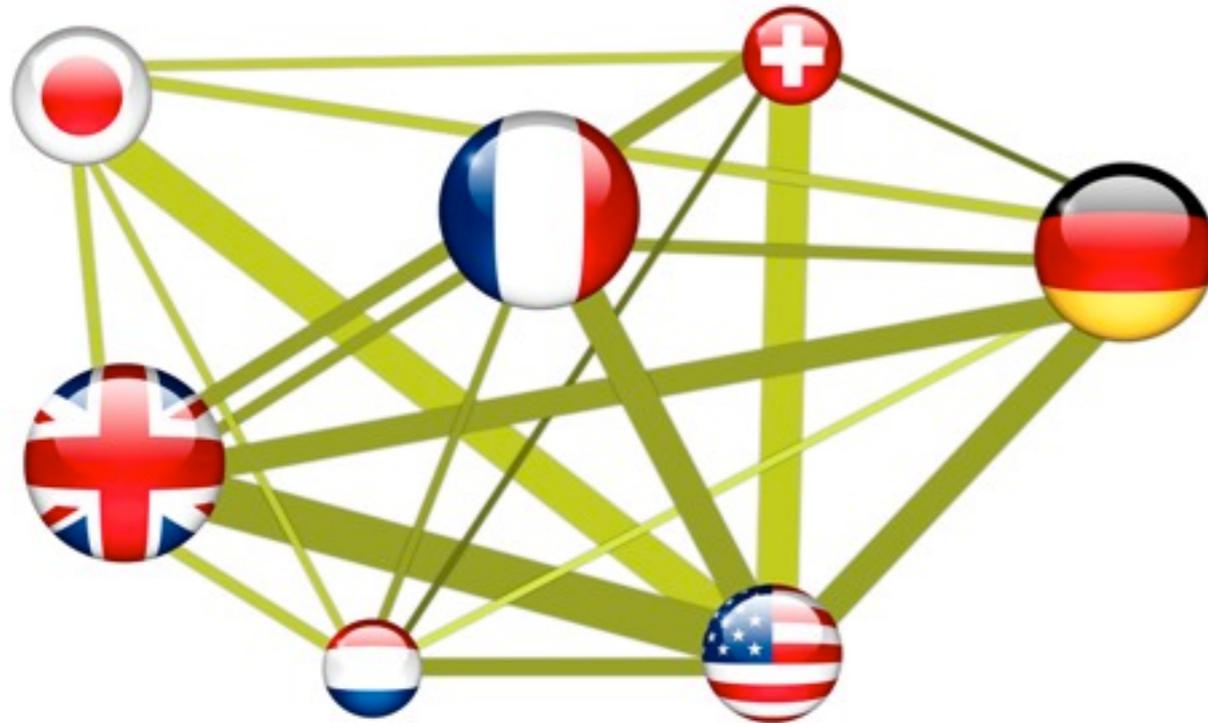
- Money market funds
- Mutual funds
- Hedge funds
- Pension funds
- Exchange traded funds

Source: Lipper/Thomson Reuters

Financial Interconnections

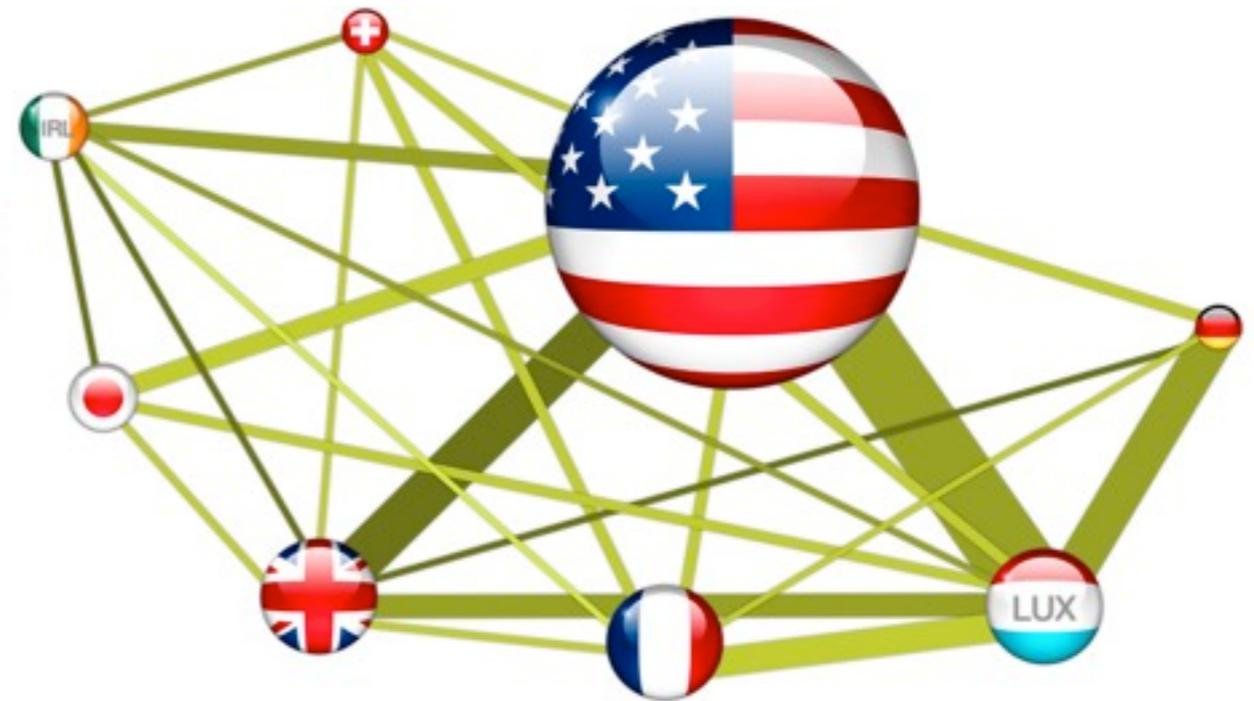
Banking System

(cross-border bank claims = \$30 Trillion)



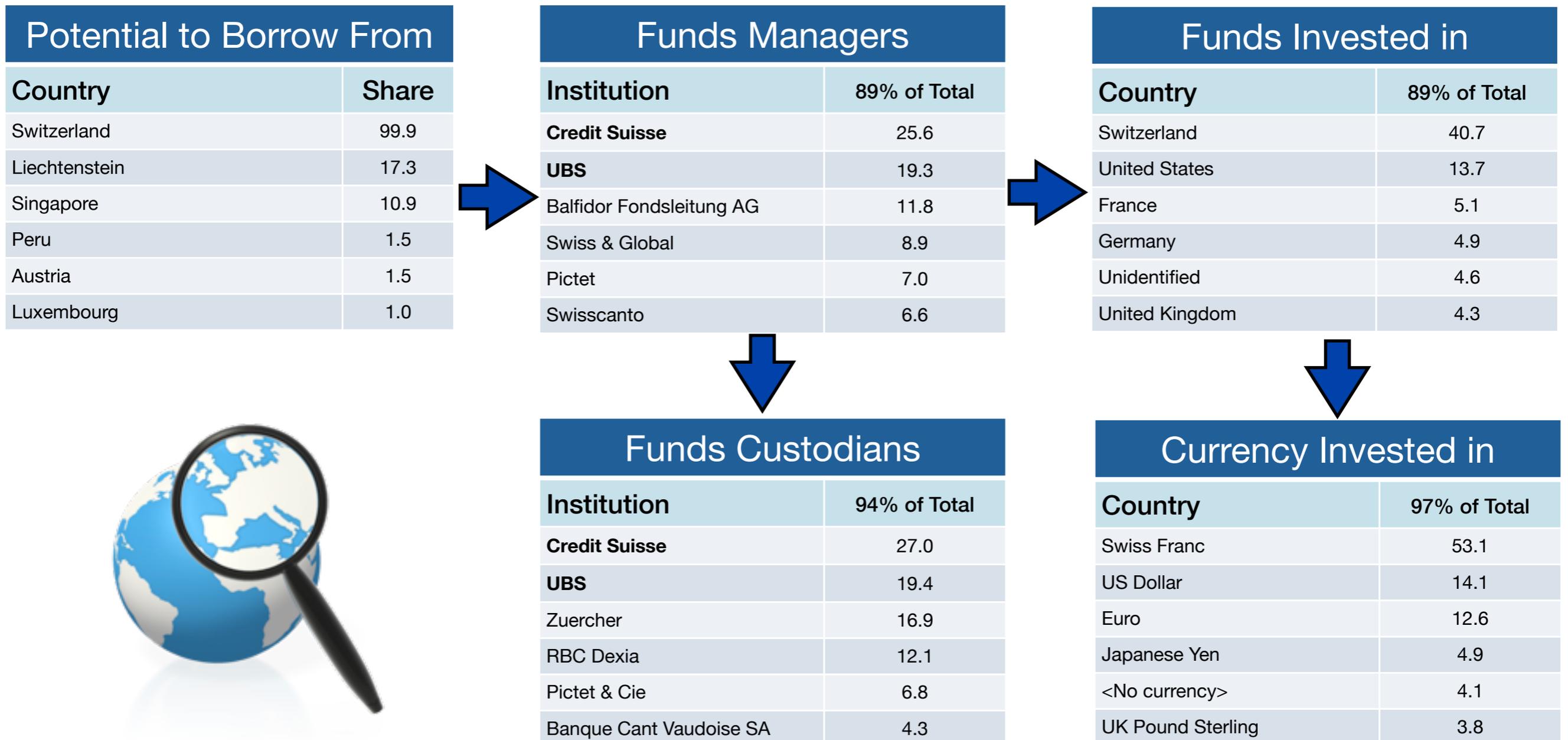
“Shadow” Banking System

(total claims = \$25 Trillion)



Funds

Switzerland: A Simplified View of the Funds Industry



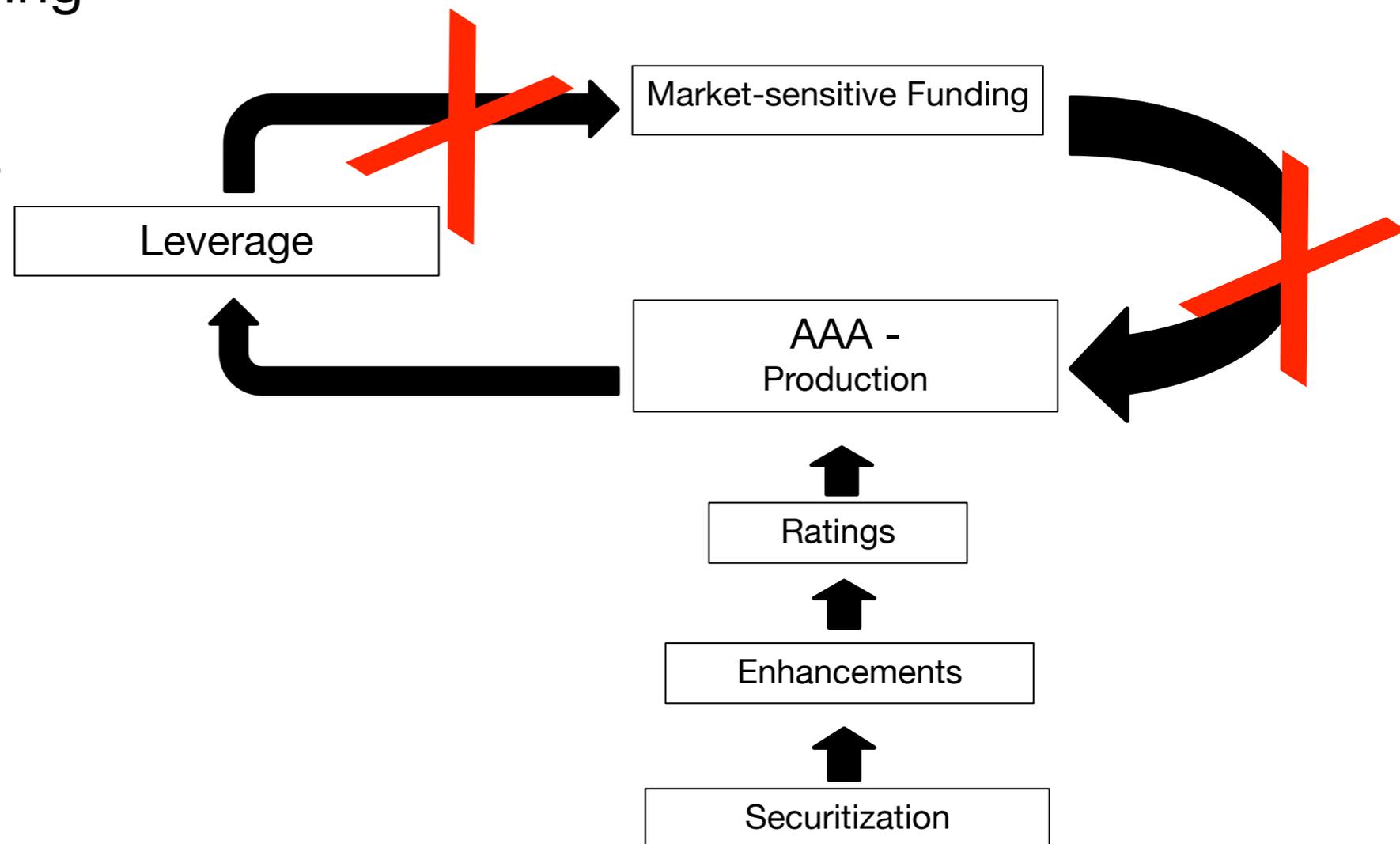
Share of total is calculated separately for each category. "Potential to Borrow From" is the total value of funds that are registered for sale. For each category, the top six are listed.

Sources: Lipper (Thomson Reuters) and staff calculations.

Balance Sheet Transformations

Broadly similar global ALM strategies

- Market-sensitive funding
- Securitization, ratings
- Leverage



→ Growth

→ Fault lines

Fault Line: Funding

Funding models

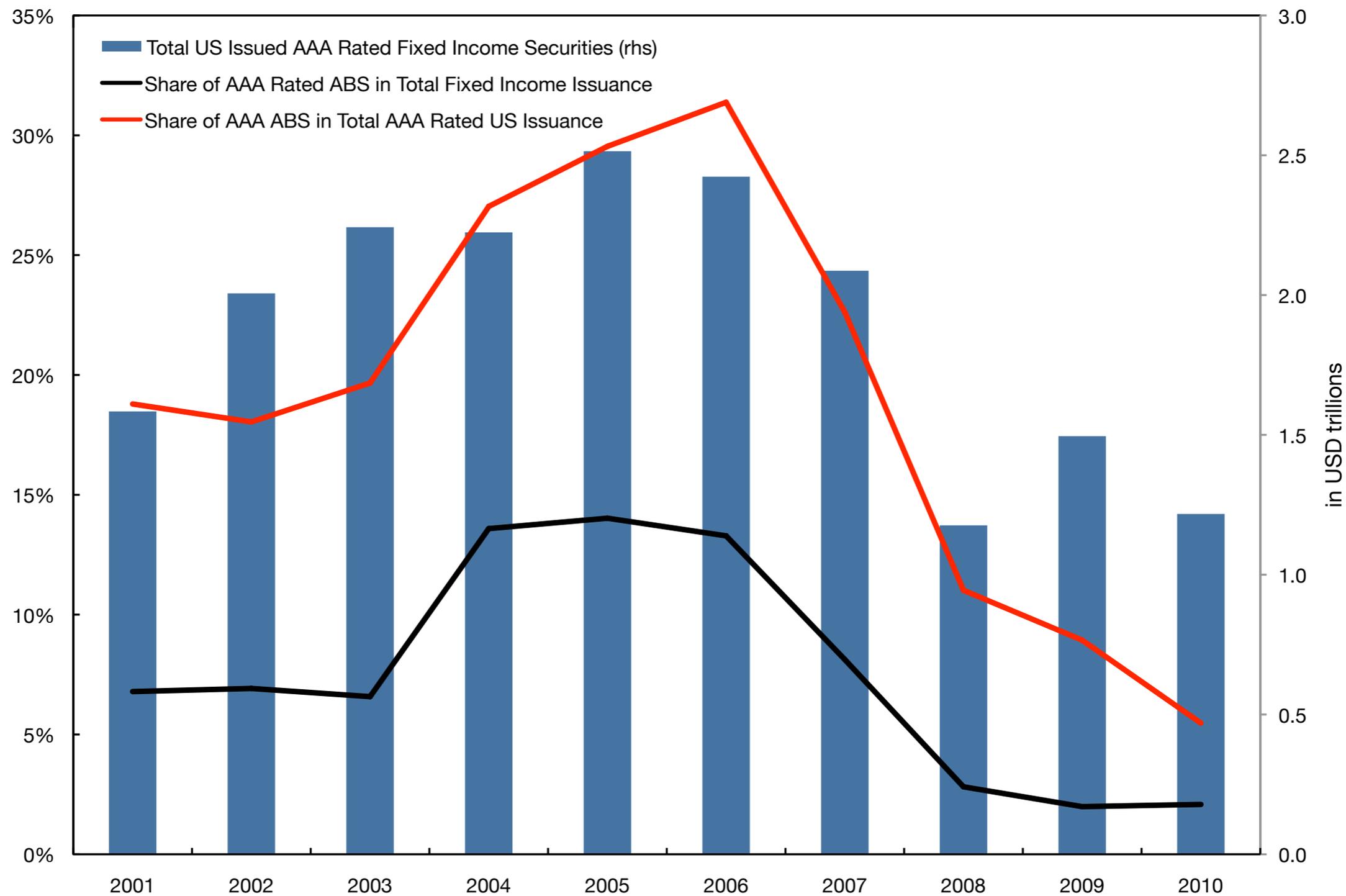
- Banks—wholesale, deposit, home
- Cross-currency risks
(BIS—shortfall: \$1-1¼ trillion)
- Nonbanks
Redemptions --> ST funding
Bailouts

Inter-LCFI linkages

Contagion Round	1	2	3	4
CITIGROUP INC	X			
BANK OF AMERICA CORP	X			
JPMORGAN CHASE & C			X	
WELLS FARGO & C			X	
CREDIT S				
DEUTSC				
HSBC HOLDING				X
BARCLAYS PLC			X	
UNICREDIT SPA			X	
INTESA SANPAOLO		X		
BANCO SANTANDER SA			X	

Other Fault Line: Ratings

Growth and Decline of AAA Rated Fixed Income Securities



Way Forward

Surveillance

Financial

Bilateral surveillance

Multilateral surveillance

Macro-financial policies

Data

BIS
IMF reserves

G20 Data
Gaps

Lipper, DTCC,
Custodians

Supervisors

