

The Evolving Global Regulatory Framework and Its Impact on Asia

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Financial crises and regulatory reforms

- Financial crises have led to some major reforms over time.
- Importance of an inclusive approach to regulatory system.
- Gross international asset positions from 50 percent of GDP to 150% (1990s-2012)
- A market maker of last resort?
- The role of central banks, the intervention along the yield curve

Some lessons learnt?

- An early warning system
- Macro-prudential policies vs monetary policies
- Stress tests for banks
- Shadow banks

The importance of containing systemic risk

- A common thread in the dialogue regarding the current international reform agenda relevant to emerging Asian economies is the necessity of addressing systemic risk, as it was at the core of the global financial crisis. In this regard, there is increasing concern at the international level regarding the risks inherent in Asia's domestic financial systems. Reforms that address shadow banking, CRAs, hedge funds, and OTC markets are thus thought to be relevant to Asia insofar as they address systemic risk to the global financial system.

Recent Policy Developments Towards the Regulation of Systemic Risk

- The Identification of G-SIFIs and D-SIBs to Enhance Regulation of Systemic Risks
- Government Guarantees, Risk-Taking, Moral Hazards and Ending Too-Big-To-Fail
- The Emerging Contours of Macroprudential Regulation
- The Need for Greater Cross-Border Cooperation and Coordination in Asia

Recent Policy Developments Towards the Regulation of Systemic Risk

- Reforming markets in which financial derivative instruments are traded.
- Improving accounting standards, achieving a single set of global accounting strands
- The role of credit rating agencies
- Addressing risk imposed by hedge funds and shadow banking institutions

The Identification of G-SIFIs and D-SIBs to Enhance Regulation of Systemic Risks

- A financial institution whose distress or failure would significantly impact on other financial institutions, the wider financial system and the domestic and international economies.
- Could disrupt the provision of financial services because:
 - Complexity
 - Size
 - Interconnectedness

G-SIFS

- Three factors to determine G-SIFI status
 - Size: volume of financial services provided and market capitalisation
 - Lack of substitutability: determining the financial system's relative dependence on services provided by that financial institution
 - Interconnectedness: Identifying the direct and non-direct links with other stakeholders across multiple jurisdictions

FSB G-SIFI LIST BY SRISK RANK

For 2013 (Last ranking from November 2011 in parenthesis)

SRISK

Rank

Firm

1	Mitsubishi UFJ FG
2 (7)	Mizuho FG
3 (1)	Deutsche Bank
4 (4)	Group Credit Agricole
5 (6)	Barclays
6 (15)	Sumitomo Mitsui FG
7 (8)	Bank of America
8 (2)	BNP Paribas
9 (3)	Royal Bank of Scotland
10 (14)	Citigroup
11 (21)	Bank of China
12 (11)	Societe Generale
13 (12)	JP Morgan Chase
14 (10)	ING Bank
15 (18)	Unicredit Group

SRISK

Rank

Firm

16 (13)	Lloyds Banking Group
17 (16)	UBS
19 (20)	Commerzbank
21 (19)	Credit Suisse
22 (17)	Santander
24 (25)	Morgan Stanley
26 (26)	Goldman Sachs
32 (29)	Dexia
35 (24)	Nordea
45 (9)	HSBC
	Bank of New York Mellon
	State Street
	Wells Fargo

MEASURING SYSTEMIC RISK

- Acharya, Pedersen, Philippon, and Richardson(2010) propose the use of market data to estimate systemic risk contributions of firms.
- Brownlees and Engle use new time series methods to estimate and forecast systemic risk.
- The question – How much capital would a firm need if we have another financial crisis? This could be supplied by taxpayers or spill into the economy with all the externalities that the failure causes.

Empirical Results of Banks Systemic Risk for US, Europe and Asia

• Figure 1 Global Systemic Risk by Country: US

Systemic Risk Rankings for 2013-01-11 ▼ (MES is equity loss for a 2% daily market decline)

Institution	SRISK%	RNK▲	SRISK(\$ m)	MES	Beta	Cor	Vol	Lvg	MV
<u>Bank Of America</u>	19.03	1	97,089	3.90	1.58	0.62	34	16.38	125,349.0
<u>Citigroup</u>	15.82	2	80,740	3.70	1.50	0.68	25.2	15.03	124,162.9
<u>JP Morgan Chase</u>	13.77	3	70,296	2.69	1.09	0.70	17.1	13.10	175,396.7
<u>MetLife</u>	8.57	4	43,710	3.67	1.49	0.68	24.5	20.72	39,648.5
<u>Prudential Financial</u>	7.40	5	37,764	3.64	1.46	0.73	21.8	24.56	26,841.6
<u>Morgan Stanley</u>	7.24	6	36,955	3.74	1.52	0.67	26.4	18.47	39,822.0
<u>Goldman Sachs</u>	7.11	7	36,294	3.32	1.35	0.69	23.1	14.15	66,455.0
<u>Hartford Financial Services</u>	3.57	8	18,237	4.08	1.65	0.68	25.7	28.38	10,427.8
<u>Lincoln National Corp</u>	2.49	9	12,711	4.20	1.70	0.71	25.4	27.15	7,656.4
<u>American International Group</u>	1.87	10	9,519	3.32	1.35	0.57	24.8	9.62	52,010.2
<u>SLM Corporation</u>	1.81	11	9,234	2.05	0.83	0.49	19.9	23.33	8,027.7
<u>Bank Of New York Mellon Corp/The</u>	1.46	12	7,456	3.00	1.22	0.68	22.7	10.68	31,295.3
<u>Principal Financial Group</u>	1.40	13	7,145	2.76	1.11	0.68	17.7	18.41	8,572.7
<u>Genworth Financial</u>	1.22	14	6,227	4.92	1.94	0.58	36.5	25.25	3,988.8
<u>Suntrust Banks</u>	0.88	15	4,467	3.29	1.34	0.64	24.9	11.02	15,254.2
<u>Ameriprise Financial</u>	0.71	16	3,644	3.42	1.35	0.75	22.6	10.61	13,392.5
<u>Regions Financial</u>	0.69	17	3,497	3.45	1.40	0.59	25.1	11.45	10,230.1
<u>Capital One Financial</u>	0.59	18	3,004	3.40	1.38	0.58	27.1	8.27	36,058.6
<u>Protective Life Corp</u>	0.55	19	2,812	2.97	1.21	0.57	23.4	22.34	2,406.6
<u>E-Trade Financial</u>	0.48	20	2,467	4.34	1.76	0.60	28.9	17.52	2,740.4

- Source: Estimated by NYU V-Lab, using data mainly from Bloomberg

Empirical Results of Banks Systemic Risk for US, Europe and Asia

• Figure 2 Europe SRISK Top 20

Systemic Risk Rankings for 2013-01-11 ▾ (MES is equity loss for a 2% daily market decline)

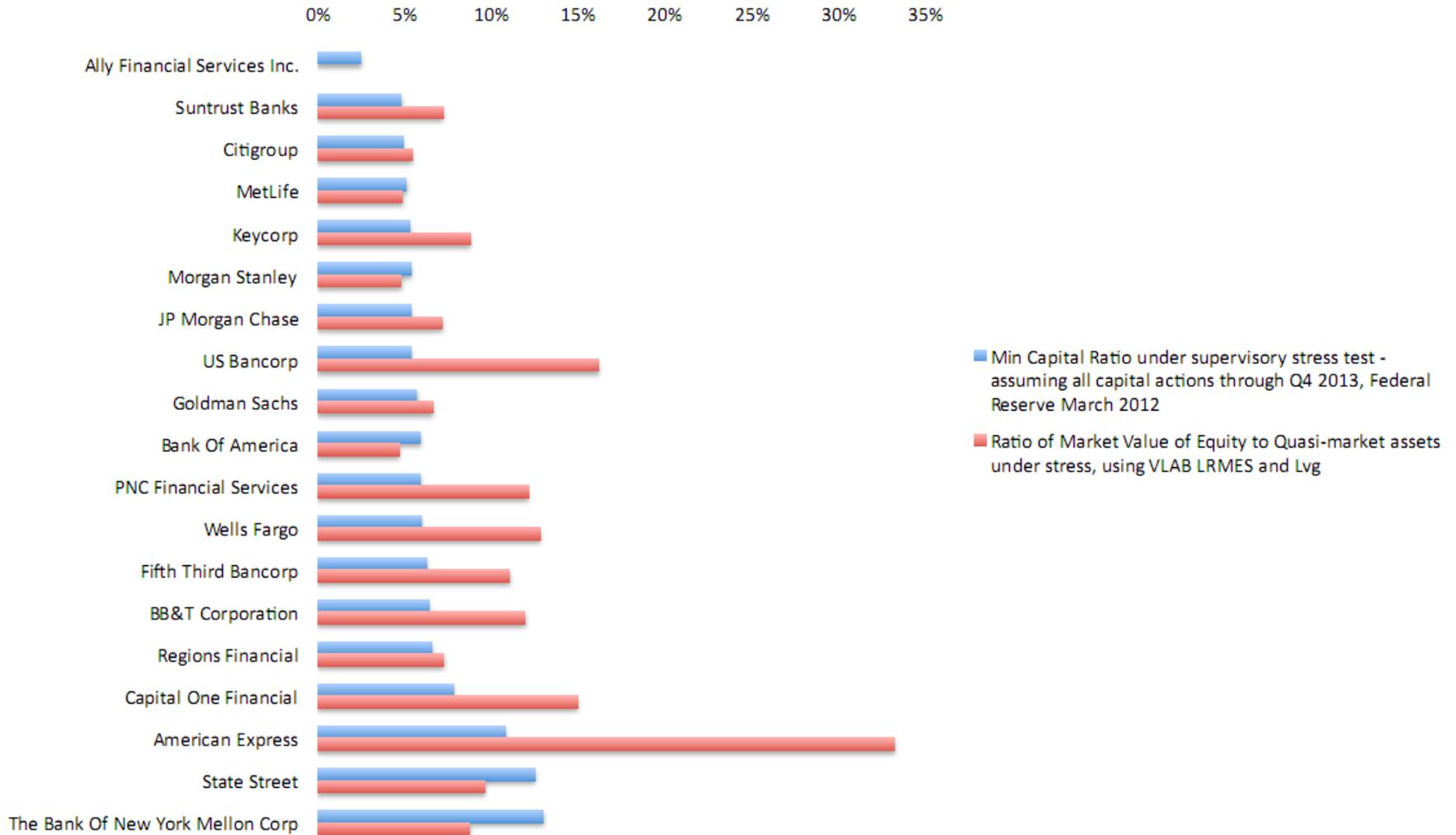
<u>Institution</u>	<u>SRISK%</u>	<u>RNK▲</u>	<u>SRISK (\$ m)</u>	<u>MES</u>	<u>Beta</u>	<u>Cor</u>	<u>Vol</u>	<u>Lvg</u>	<u>MV</u>
<u>Deutsche Bank AG</u>	8.05	1	131,404	4.53	1.84	0.62	30.5	60.37	46,158.1
<u>Credit Agricole SA</u>	7.53	2	122,872	4.75	1.91	0.51	34.1	102.27	23,775.3
<u>Barclays PLC</u>	6.67	3	108,849	4.18	1.70	0.51	26.5	42.52	59,209.7
<u>BNP Paribas</u>	5.83	4	95,247	3.91	1.59	0.55	24.1	32.25	76,099.0
<u>Royal Bank of Scotland Group PLC</u>	4.96	5	80,905	3.15	1.28	0.47	25.3	33.39	64,978.7
<u>Societe Generale</u>	4.51	6	73,696	4.96	2.01	0.56	31.6	47.12	34,291.1
<u>ING Groep NV</u>	4.14	7	67,560	4.47	1.81	0.57	25.9	39.58	39,753.9
<u>UniCredit SpA</u>	3.03	8	49,431	4.26	1.73	0.47	35	36.14	33,089.9
<u>Lloyds Banking Group PLC</u>	2.99	9	48,872	3.47	1.41	0.44	28.7	24.67	61,424.0
<u>UBS AG-REG</u>	2.79	10	45,486	3.87	1.57	0.48	27.2	21.97	66,653.2
<u>Commerzbank AG</u>	2.52	11	41,116	5.15	2.09	0.53	43.4	66.44	12,749.3
<u>Credit Suisse Group AG</u>	2.50	12	40,764	4.02	1.62	0.50	27.1	29.73	36,353.7
<u>Banco Santander SA</u>	2.43	13	39,614	3.41	1.38	0.57	21.1	18.23	90,883.9
<u>Natixis</u>	2.00	14	32,600	4.36	1.72	0.49	30.5	58.83	11,858.3
<u>AXA SA</u>	1.91	15	31,245	4.70	1.89	0.63	23	21.32	43,894.7
<u>Intesa Sanpaolo SpA</u>	1.82	16	29,756	4.32	1.75	0.52	35.9	25.59	32,404.8
<u>Dexia SA</u>	1.80	17	29,432	11.54	4.64	0.22	269.9	5,141.00	104.2
<u>Nordea Bank AB</u>	1.61	18	26,358	3.21	1.30	0.56	20	22.16	41,593.9
<u>Danske Bank A/S</u>	1.36	19	22,253	2.92	1.19	0.40	27.9	32.25	19,173.3
<u>Legal & General Group PLC</u>	1.24	20	20,311	3.00	1.22	0.53	17.1	36.63	14,419.8

• Source: Estimated by NYU V-Lab, using data mainly from Bloomberg

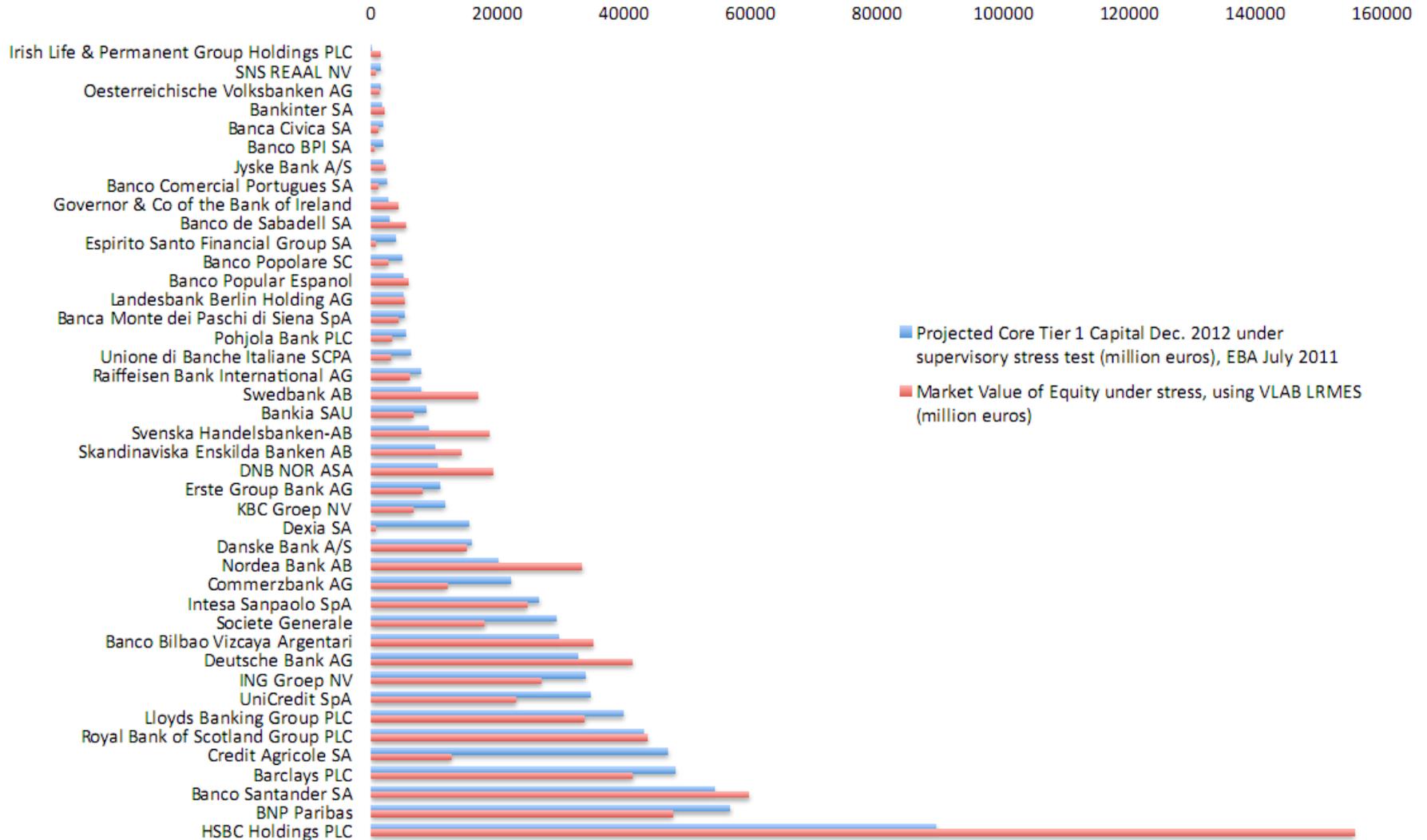
Being proactive with supervision

- FSB meeting in Moscow in Nov 2013
- Comprehensive banks stress tests
- Crisis management vs an early device

US FED STRESS TEST



EUROPEAN STRESS TEST



ASIA SRISK

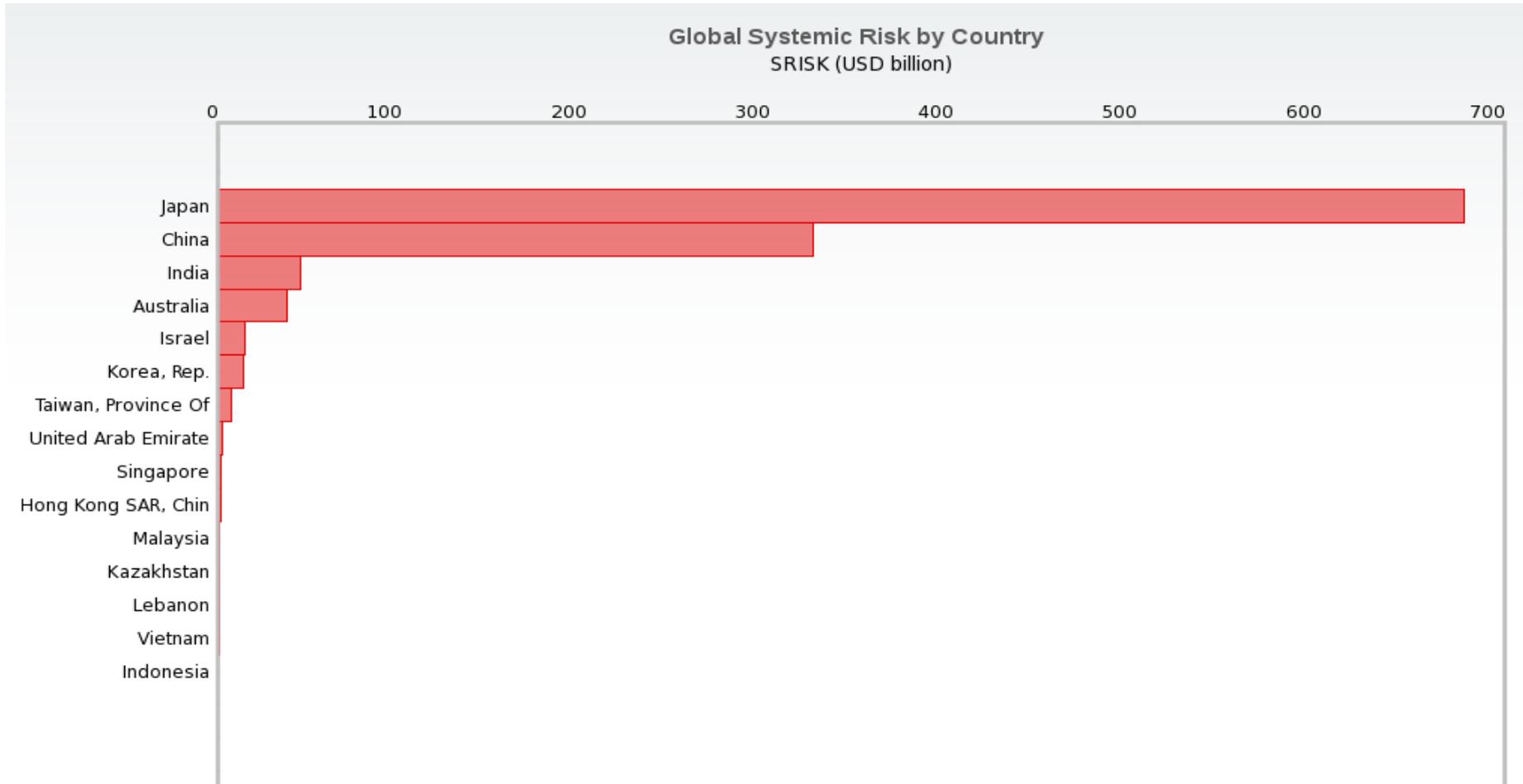
Top 20 Firms Sorted By SRISK

Systemic Risk Rankings for 2013-06-14 View changes

<u>Institution</u>	<u>SRISK%</u>	<u>RNK</u> ▲	<u>SRISK (\$ m)</u>	<u>MES</u>	<u>Beta</u>	<u>Cor</u>	<u>Vol</u>	<u>Lvg</u>	<u>MV</u>
<u>Mitsubishi UFJ Financial Group</u>	12.79	1	140,620	2.84	1.09	0.07	52.0	28.53	85,194.9
<u>Mizuho Financial Group Inc</u>	10.50	2	115,491	2.36	0.89	0.04	46.3	38.94	47,459.2
<u>Sumitomo Mitsui Financial Group</u>	7.81	3	85,870	2.81	1.07	0.09	46.7	25.86	59,875.6
<u>Bank Of China Ltd-H</u>	6.59	4	72,524	2.15	0.82	0.24	28.2	15.95	126,761.3
<u>China Construction Bank-H</u>	5.91	5	65,005	2.12	0.80	0.23	27.7	13.45	176,793.9
<u>Agricultural Bank Of China-A</u>	5.21	6	57,245	0.70	0.25	0.13	11.7	16.13	143,327.9
<u>Ind & Comm Bank Of China-A</u>	2.91	7	32,053	0.75	0.29	0.16	14.0	12.75	235,049.2
<u>Bank Of Communications Co-H</u>	2.79	8	30,711	2.39	0.91	0.24	24.7	15.64	53,587.9
<u>Resona Holdings Inc</u>	2.49	9	27,419	2.15	0.82	0.03	47.8	38.07	11,716.7
<u>National Australia Bank Ltd</u>	2.29	10	25,217	3.13	1.20	0.37	29.1	12.33	65,968.7
<u>Dai-ichi Life Insurance</u>	2.01	11	22,108	3.28	1.20	0.07	39.1	28.09	13,340.2
<u>Shanghai Pudong Development Bank-A</u>	1.93	12	21,254	1.24	0.48	0.11	36.1	19.88	27,444.1
<u>Sumitomo Mitsui Trust Holdings</u>	1.86	13	20,482	2.75	1.04	0.07	52.2	23.05	17,025.7
<u>China Citic Bank Corp Ltd-H</u>	1.79	14	19,721	2.74	1.05	0.20	30.1	16.87	27,864.3
<u>Nomura Holdings Inc</u>	1.64	15	18,087	4.41	1.70	0.13	64.3	13.93	29,248.3
<u>Industrial Bank Co Ltd -A</u>	1.61	16	17,751	1.36	0.53	0.10	34.5	16.50	34,142.6

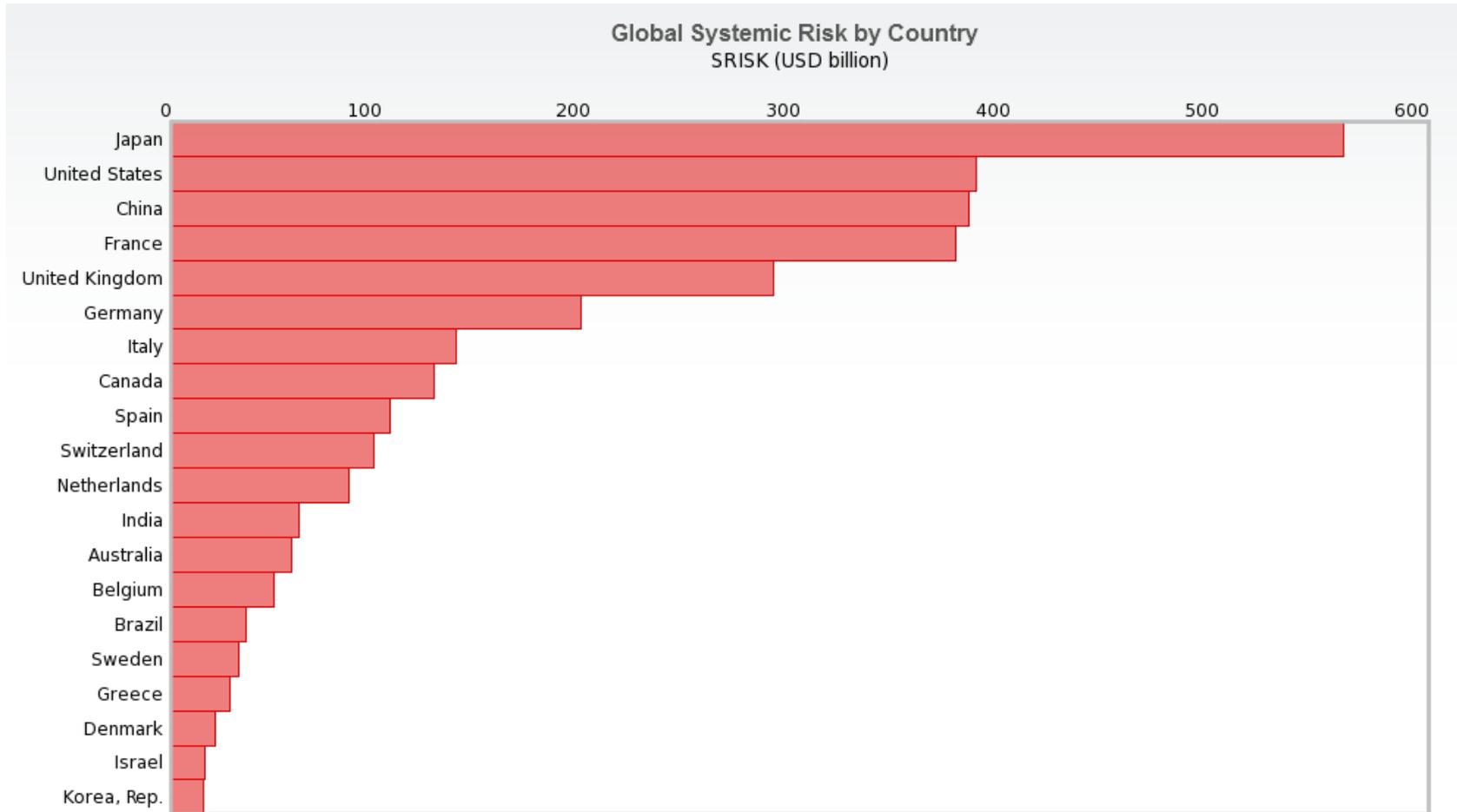
Empirical Results of Banks Systemic Risk for US, Europe and Asia

- **Figure 4 Asia SRISK: Global Systemic Risk by Country**

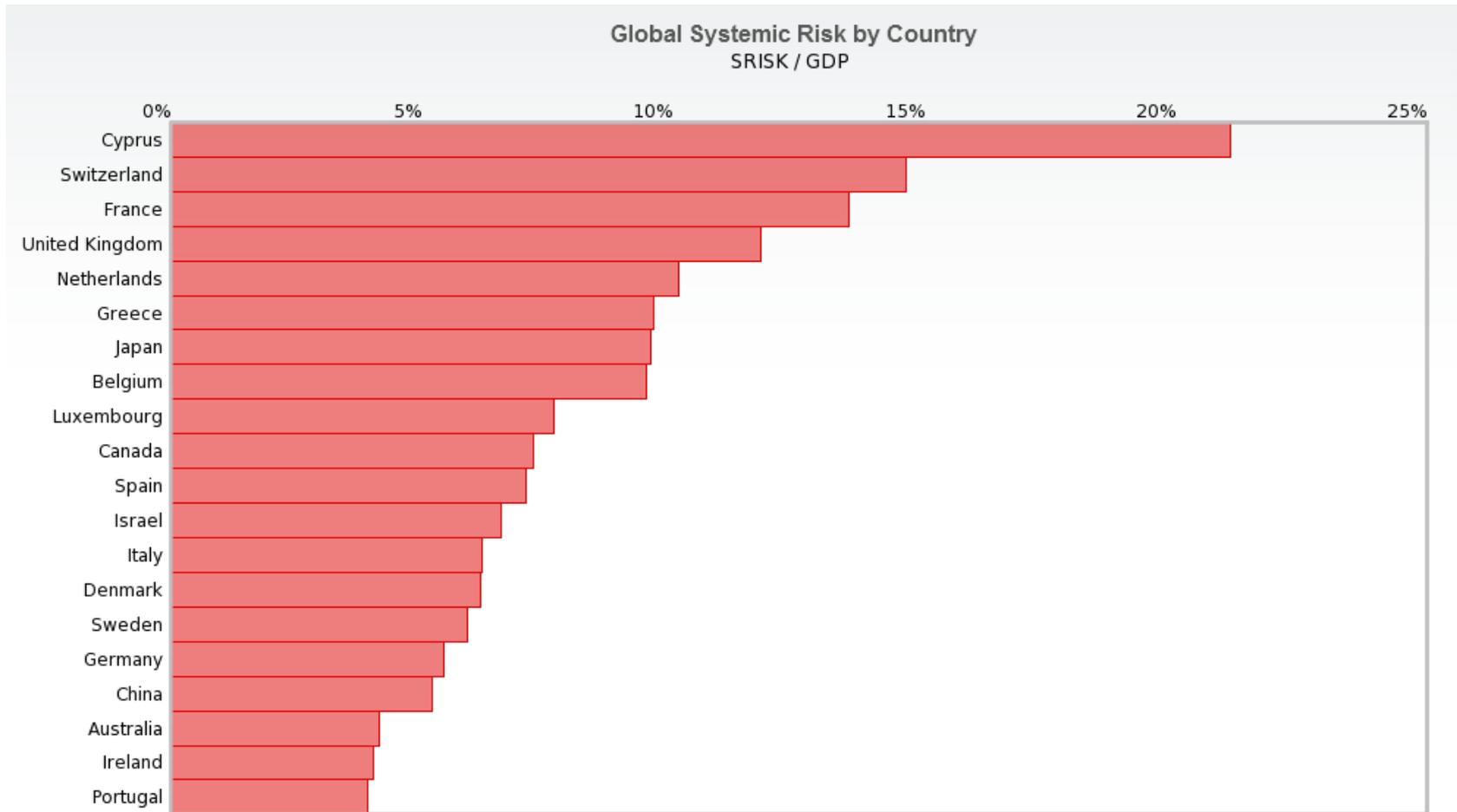


- Source: Estimated by NYU V-Lab, using data mainly from Bloomberg

Where is the risk today



Relative to GDP



Relevance of the international Reform agenda to Emerging Asian Economics

- Excessive regulation of Asia's still-nascent derivatives market and hedge fund industry may hinder their development, thus stifling an important source of liquidity and market depth.
- The problems associated with shadow banking in the West may provide important lessons for PRC regulators who may be facing a shadow-banking crisis of their own, given the rapid growth of unregulated lending in the PRC.

The Need for Greater Cross-Border Cooperation and Coordination in Asia

- European College of Supervisors
 - Information-sharing and cooperation
 - Challenges for Asia, given the higher level of national autonomy and different political climate

Macro-prudential policies

- The most pressing challenge for Asian countries is developing the supervisory capacity for monitoring systemic risk and making appropriate use of macro-prudential tools. In this regard, a significant concern is the current capacity of national regulatory agencies (FSB, 2011).

Macro-prudential policies

- Given the increasingly globalized nature of finance and Asia's growing regional cooperation, establishing a formidable regional supervisor may be the most effective solution to addressing systemic risk. A potential candidate for this role is the ASEAN+3 Macroeconomic Research Office (AMRO).

Macro-prudential vs monetary policies

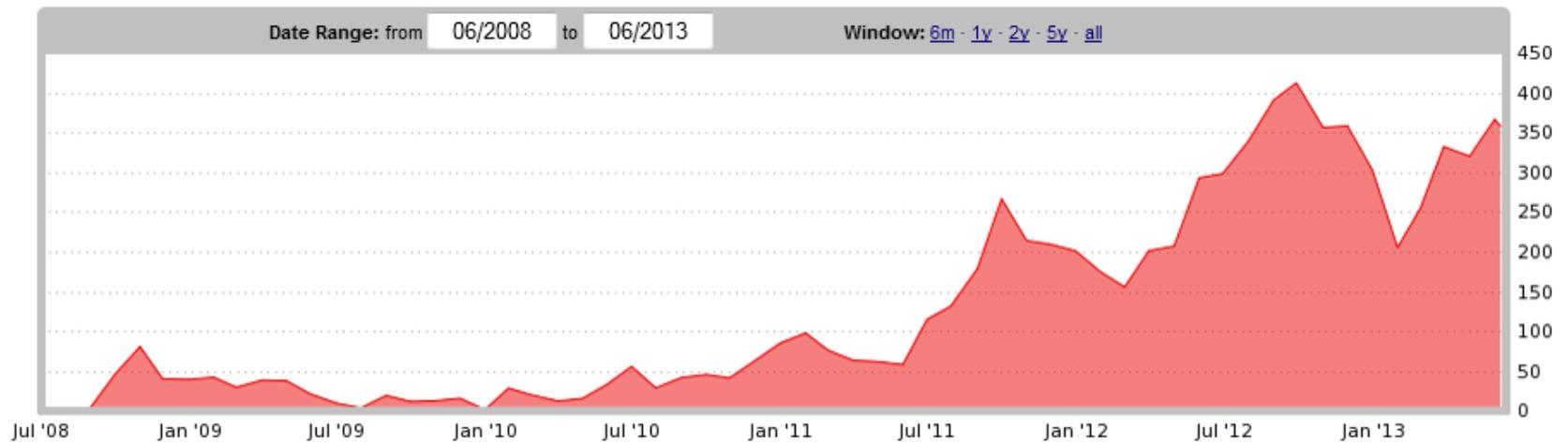
- Macro-prudential policies and regulatory arbitrage
- Japan's experience (limits on real estate lending)
- Recent shadow banking experience in China

International bond markets

- Off-shore centres and Asian corporations
- Demand for debt securities (BIS)
- China has four times more international debt securities outstanding when calculated on a nationality basis as opposed to a residency basis. (BIS).
- Thailand has three and a half times as much (BIS)

China

Risk Analysis Overview - China Financials Total SRISK (US\$ billion)



Some of the challenges of banking system in China

- Capitalisation of Chinese banks
- Local Governments' Debts and their methods of operation
- Source of revenue
- State Owned Enterprises
- Use of the foreign exchange reserve may have some impact on foreign exchange

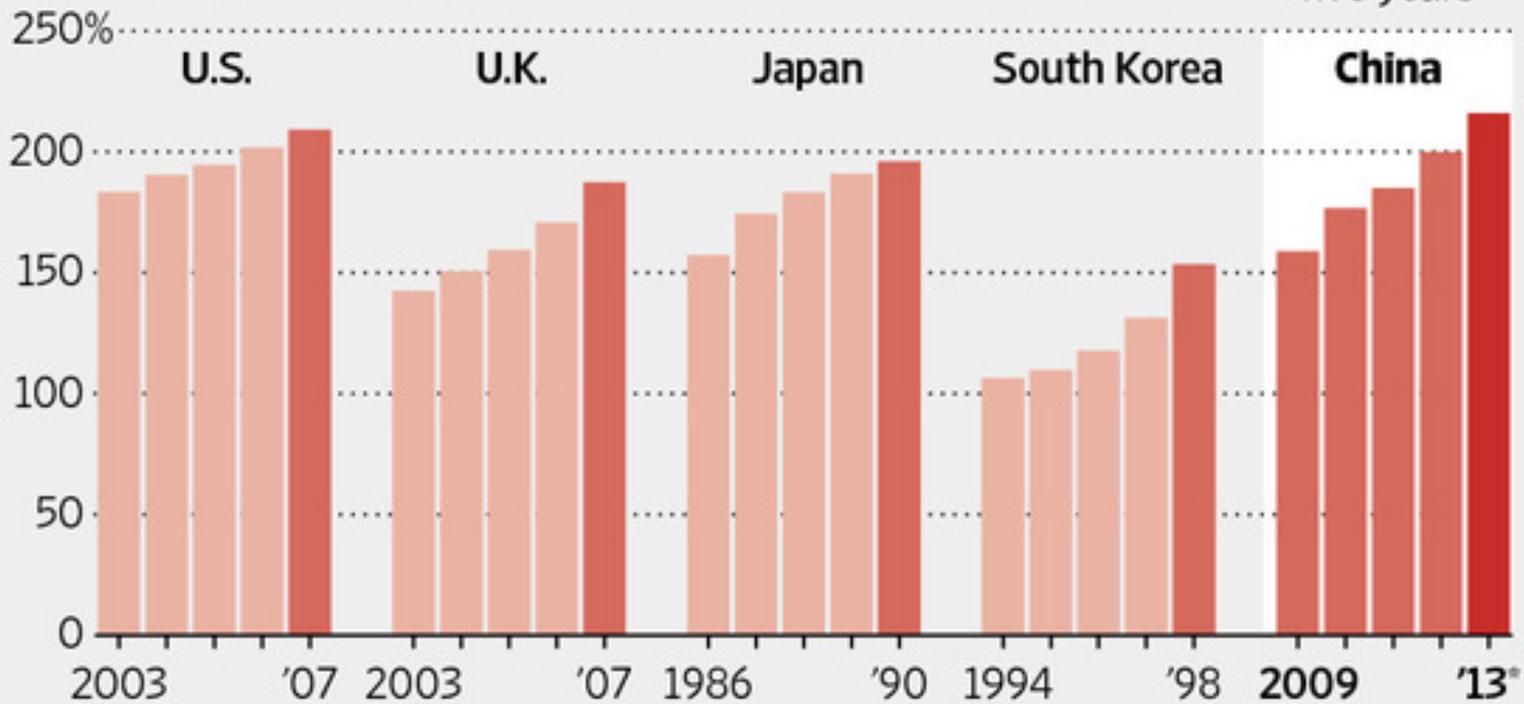
Shadow Banking

- Non-performing loans
- Banks contingent liabilities to shadow banks
- Investors would normally discount bank valuations raising SRISK measurements.
- However, because of clear government guarantees, investors believe they are protected. *Hence SRISK is probably underestimated.*

Rising Burden

Shadow banks have helped boost China's debt level at a pace that mimics the rise seen by other nations ahead of their financial crises.

Debt as a percentage of GDP



Sources: People's Bank of China; IMF International Financial Statistics; Fitch Ratings

*Estimate
The Wall Street Journal

Shadow Lending

China's banks have moved more lending off their balance sheets as domestic debt has increased.

Lending as a percentage of GDP

3-month moving average, seasonally adjusted



November

**Overall
bank loans**
27.9%

**Traditional
bank loans**
16.3%

**Off balance
sheet loans**
10.3%

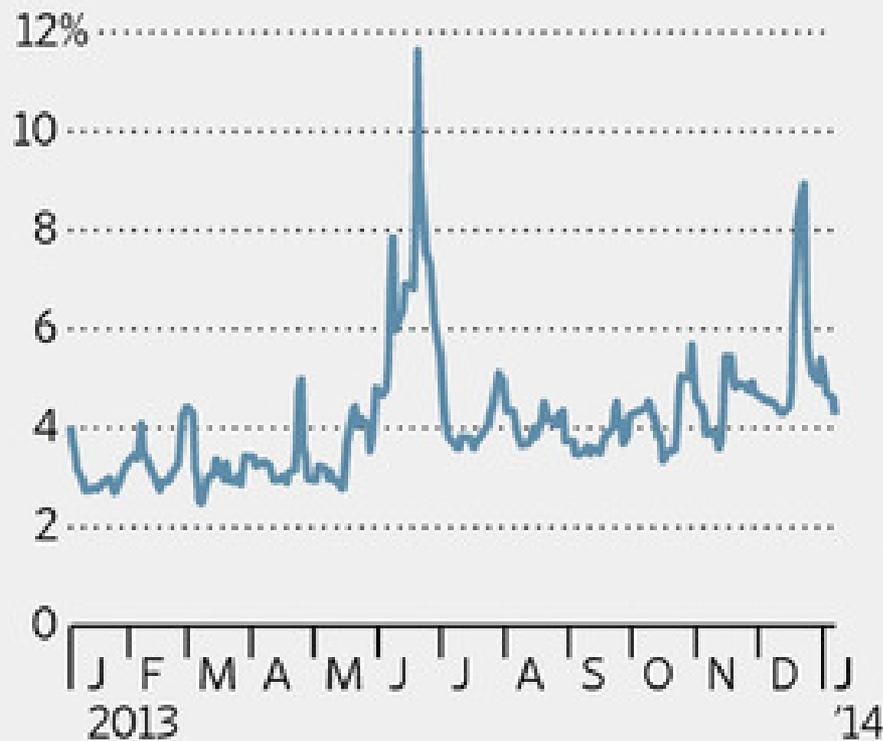
Source: UBS

The Wall Street Journal

Applying a Squeeze

The People's Bank of China engineered cash crunches to limit loan growth, letting interbank lending rates surge by adjusting cash injections into the financial system.

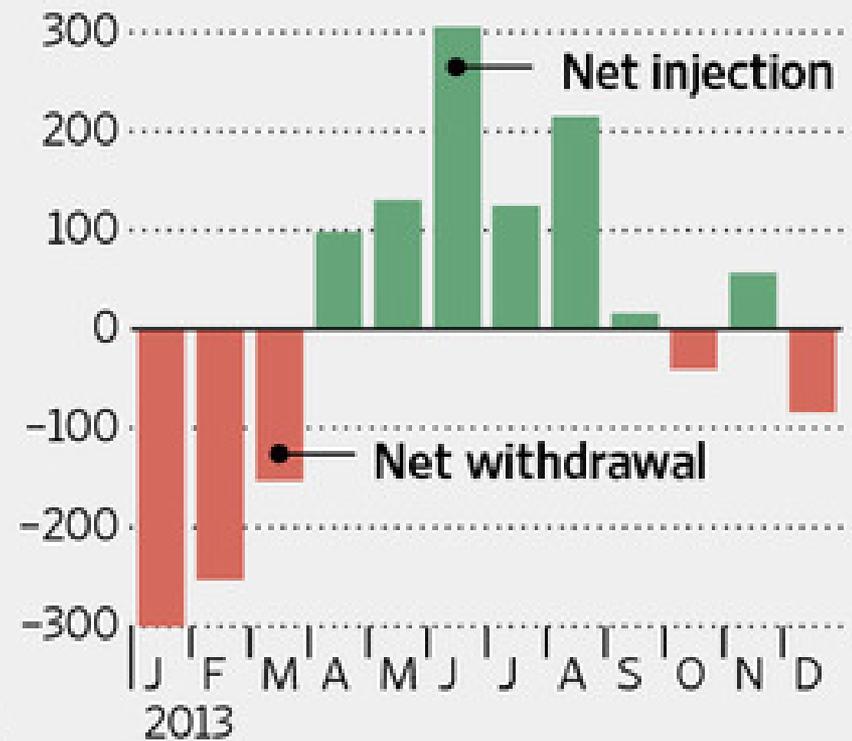
Seven-day repurchase rate



Source: WIND Info

PBOC liquidity operations

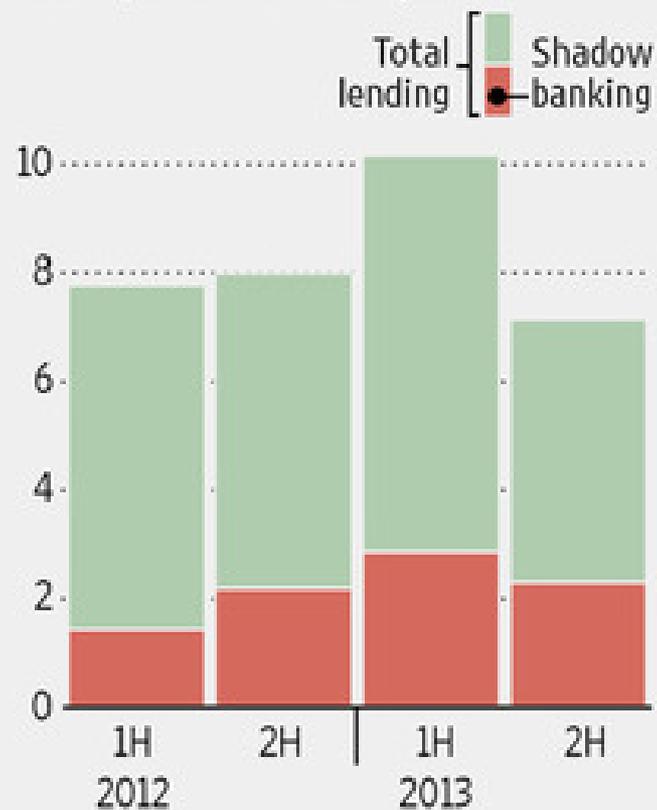
In billions of yuan



The Wall Street Journal

Credit Tightens

Chinese lending slowed in the second half of the year. New credit, in trillions of yuan:



Note: 1 trillion yuan = \$165 billion

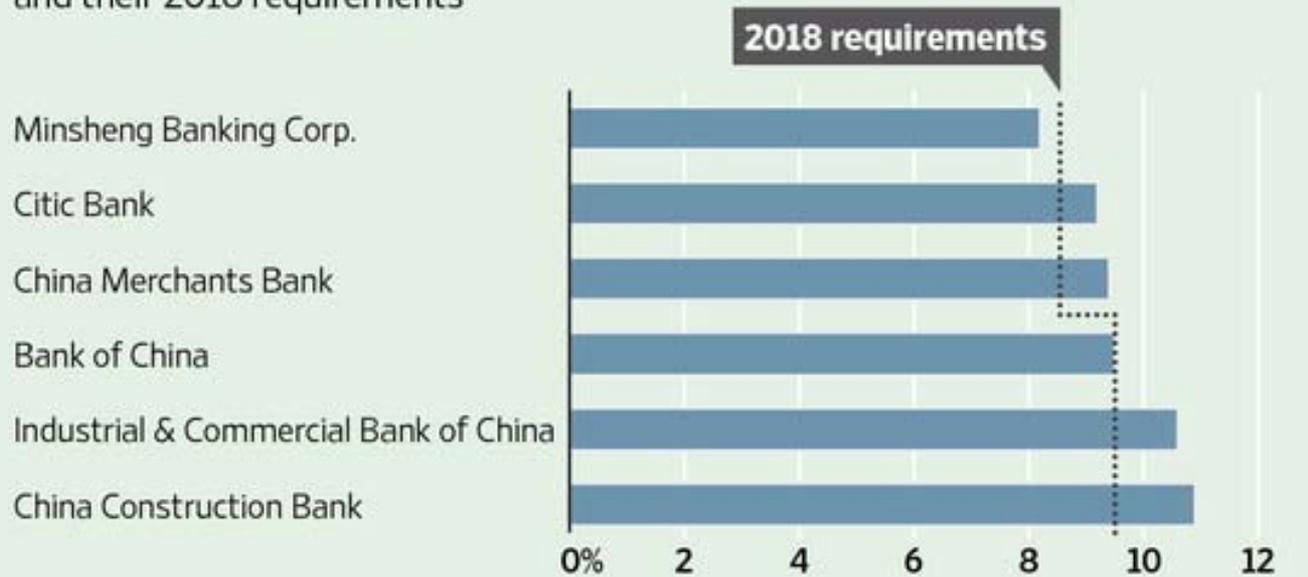
Source: People's Bank of China

Progress Achieved Thus Far in Implementing Basel III Standards

- Progress in implementing Basel III standards in national jurisdictions.
- Asian banks are relatively better capitalized than their Western counterparts due to reforms implemented after the Asian financial crisis, and the minor impact on them of the global financial crisis. However, a number of challenges remain to be addressed.

Two Leagues

Basel III Tier-1 capital ratios at the end of September for some Chinese banks and their 2018 requirements



Sources: the companies

The Wall Street Journal

Evolving Basel III requirements

- Based on Fitch, 14 European G-SIBs reduced their exposure to private firms by \$590 billion (9 % increase) and instead increased their exposure to government bonds by around almost the same amount -26% increase (WSJ).

Leverage ratio

- The BCBS revised the definition of its leverage ratio. This will allow banks to report lower levels of overall risk (WSJ).
- The net stable funding ratio will give greater recognition to bank funding that runs for between six and 12 months (WSJ).

Softer Rules for Securitisation

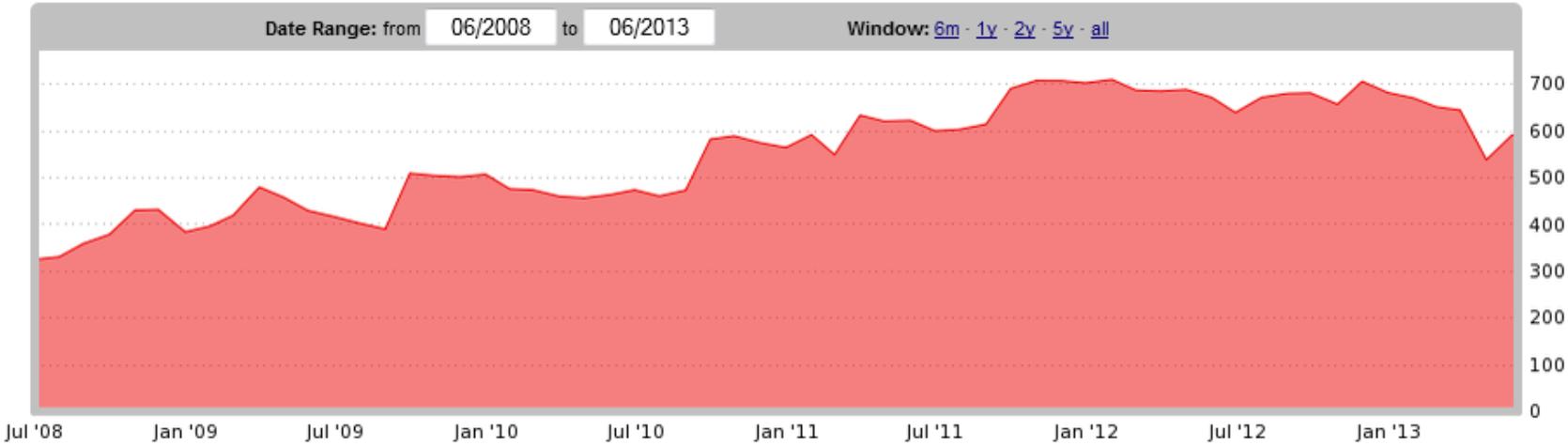
- “The BCBS would scrap the more complex parts of proposed new rules on securitizations, a type of bond that allows banks to repackage and sell a variety of loans including credit-card balances, student loans and mortgages.
- It also announced measures that would reduce the amount of capital that banks have to hold against potential losses on such products—although the minimum amount will still be more than twice as much as was the case before the crisis” (WSJ).

The Changing Influence of Asia on the Future Direction of Global Financial Policy

- Membership of G20
- Financial Stability Forum and FSB
- A more pro-active role in the 21st century for Asia

Japan

Risk Analysis Overview - Japan Financials Total SRISK (US\$ billion)



Empirical Results of Banks Systemic Risk for US, Europe and Asia

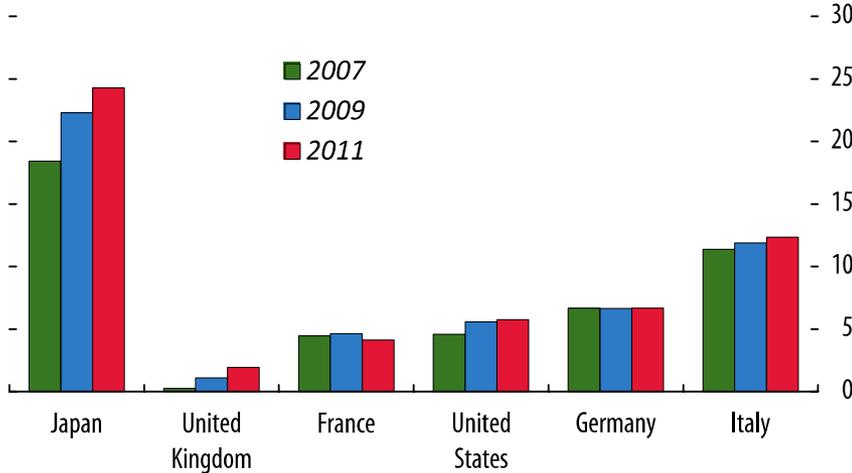
- Figure 5 Global Systemic Risk by Country: Japan SRISK**

Institution	SRISK%	RNK	SRISK (\$ m)	MES	Beta	Cor	Vol	Lvg	MV
Mitsubishi UFJ Financial Group	24.75	1	167,783	2.51	1	0.15	27.6	35.88	76,073.60
Mizuho Financial Group Inc	19.77	2	134,017	2.05	0.8	0.15	25	45.63	45,675.10
Sumitomo Mitsui Financial Group	14.97	3	101,463	1.96	0.76	0.15	20.5	33.1	52,818.90
Resona Holdings Inc	4.97	4	33,673	1.56	0.62	0.11	26.1	46.44	11,453.40
Dai-ichi Life Insurance	3.97	5	26,930	3.89	1.56	0.18	38.7	29.5	14,773.10
Sumitomo Mitsui Trust Holdings	3.75	6	25,417	2.84	1.13	0.17	30.9	30.12	14,303.10
Nomura Holdings Inc	3.63	7	24,611	4.08	1.64	0.15	42.5	21.16	21,010.20
Shinkin Central Bank	3.35	8	22,696	-0.13	0.05	0.06	10	45.02	8,798.50
Daiwa Securities Group Inc	2.03	9	13,770	3.64	1.46	0.16	35.6	25.88	9,105.00
Fukuoka Financial Group Inc	1.44	10	9,741	1.38	0.56	0.09	19.9	45.04	3,471.80
Hokuhoku Financial Group Inc	1.35	11	9,162	1.98	0.77	0.11	28.2	63.4	2,107.30
T&D Holdings Inc	1.19	12	8,065	3.06	1.19	0.16	38.9	19.13	8,767.90
Bank of Yokohama Ltd/The	1.15	13	7,806	1.48	0.59	0.1	25.1	24.93	6,456.80
Yamaguchi Financial Group Inc	1.04	14	7,057	1.2	0.49	0.07	20.5	46.99	2,401.90
Chiba Bank Ltd/The	1.02	15	6,923	1.48	0.59	0.13	25.2	26.35	5,234.50

- Source: Estimated by NYU V-Lab, using data mainly from Bloomberg

Japanese Banks and Holdings of Japanese Government Bonds

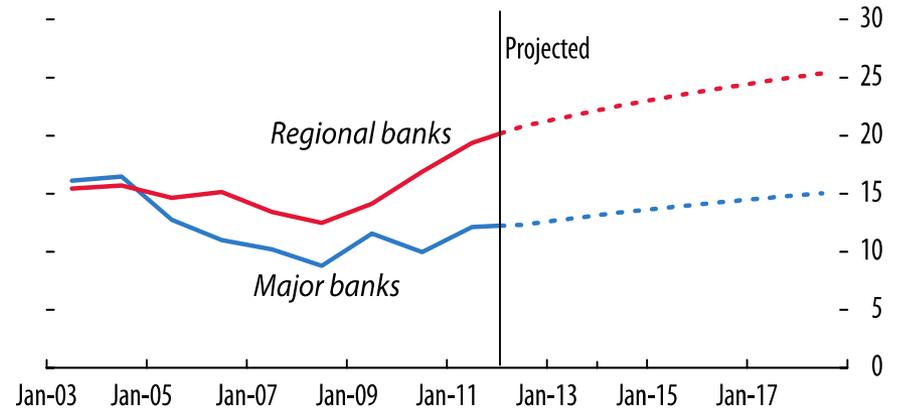
Figure 6 Bank Holdings of Government Debt for Selected Advanced Economies (% of bank assets)



Source: IMF, International Financial Statistics database.

Note: Includes all claims of domestic institutions (excluding the central bank) on general government. U.K. figures are for claims on the public sector.

Figure 7 Sensitivity of Japanese Banks to a 100 Basis Point Increase in Interest Rates (Losses as % of Tier 1 Capital)



Sources: Bank of Japan; and IMF staff estimates.

Note: Mark-to-market losses in bond holdings due to a 100 basis point parallel rise in material yields. Projections for 2012–17 assume that banks cover the same share of government funding as in 2008–11, keep the duration of their bond holdings constant, and bank assets and Tier I capital grow in line with nominal GDP.

Empirical Results of Banks Systemic Risk for US, Europe and Asia

• Figure 8 Global Systemic Risk by Country : China SRISK

Institution	SRISK%	RNK	SRISK (\$ m)	MES	Beta	Cor	Vol	Lvg	MV
Bank Of China Ltd-H	24.13	1	77,969	2.77	1.07	0.31	22.7	15.4	131,525.50
Agricultural Bank Of China-A	12.63	2	40,822	0.87	0.35	0.19	20.3	14.29	147,709.30
China Construction Bank-H	11.39	3	36,808	2.55	1.03	0.3	22.3	10.49	207,492.70
Bank Of Communications Co-H	9.4	4	30,385	3.09	1.2	0.32	25.4	14.13	58,172.10
Ind & Comm Bank Of China-A	8.3	5	26,835	1.16	0.45	0.2	23.1	11.71	242,051.90
China Citic Bank Corp Ltd-H	5.52	6	17,832	2.96	1.21	0.3	28	15.06	30,493.30
Shanghai Pudong Development Bank-A	5.09	7	16,436	1.32	0.54	0.21	31.9	17.04	29,464.80
Industrial Bank Co Ltd -A	4.81	8	15,558	1.34	0.56	0.16	33.6	16.92	28,246.50
China Everbright Bank Co Ltd	3.92	9	12,673	1.23	0.49	0.2	27.2	18.47	19,187.10
Huaxia Bank Co Ltd	3.01	10	9,728	1.45	0.56	0.18	34.8	20.94	10,974.00
Shenzhen Development Bank Co	2.54	11	8,210	1.16	0.47	0.14	40.5	18.34	12,806.70
China Merchants Bank- A	2.52	12	8,129	1.73	0.67	0.21	35	11.61	46,595.50
Ping An Insurance Group Co-H	2.32	13	7,482	4.89	1.9	0.28	36.9	7.3	61,237.40
China Minsheng Banking Corp Ltd	2.1	14	6,786	1.17	0.48	0.16	33.7	12.66	36,161.30
Bank Of Beijing Co Ltd	1.3	15	4,208	1.26	0.52	0.19	33.6	14.38	12,456.80

- Source: Estimated by NYU V-Lab, using data mainly from Bloomberg

Members of ASEAN plus 3

- Korea

Institution	SRISK%	RNK	SRISK (\$ m)	MES	Beta	Cor	Vol	Lvg	MV
Industrial Bank Of Korea	59.11	1	8,201	2.94	1.18	0.17	57.7	24.51	6,125.10
Korea Exchange Bank	25.8	2	3,579	2.73	1.1	0.13	26.7	18	4,493.40
Tong Yang Securities Inc	5.18	3	719	3.32	1.33	0.27	31.5	25.75	487.9
Korea Life Insurance Co Ltd	4.42	4	613	2.45	0.98	0.15	29.4	9.6	6,405.10
Woori Investment & Securities	2.1	5	291	3.75	1.51	0.31	38	8.49	2,235.20
Hyundai Securities Co	1.02	6	141	3.41	1.37	0.28	28.1	8.46	1,424.30
Tong Yang Life Insurance	0.93	7	129	1.19	0.48	0.13	28.7	11.75	1,099.80
Mirae Asset Securities Co Ltd	0.83	8	115	3.54	1.38	0.27	33.6	8.04	1,499.10
LIG Insurance Co Ltd	0.62	9	86	2.08	0.84	0.1	36.4	9.69	1,377.40
Daewoo Securities Co Ltd	0	10	-360	4.04	1.61	0.31	36.6	5.35	3,711.40

Source: Estimated by NYU V-Lab, using data mainly from Bloomberg

Government Guarantees, Risk-Taking, Moral Hazards and Ending Too-Big-To-Fail

- Excessive risk-taking was at the heart of the financial crisis. There is consensus that both explicit and implicit government backing of financial firms encouraged excessive risk-taking at these institutions. These government guarantees may either be in the form of an explicit guarantee where the government guarantees deposits (for example, the US federal deposit insurance system administered under Federal Deposit Insurance Corporation, or FDIC), or implicit guarantees where an expectation arises in relation to a particular financial firm, that because of its systemic importance (for example, because it is “too big”, or interconnected), the government will not allow it to fail.

Moral Hazard

- The moral hazard problem stemming from explicit and implicit guarantees were not new.
- For moral hazard stemming from deposit insurance:
- FDIC and federal deposit insurance introduced through the *Banking Act 1933*
- To avoid moral hazard, the Glass-Seagall provisions separated investment banking activities from commercial banking activities
- Also payment of premiums based on size of insured deposits
- However safeguards eroded – Glass-Seagall provisions repealed and premiums not correctly priced, while banks found loopholes in capital requirements
- For moral hazard stemming from “too-big-to-fail” status:
- Government rescued the Continental Illinois National Bank and Trust Company
- Set up resolution regime after to resolve insolvent financial institutions, but never seriously used

“Too big to fail”

- Proposals to address too-big-to-fail issue include:
 - Proper pricing of both explicit and implicit guarantees
 - “Prompt corrective action” and resolution regimes

The Emerging Contours of Macro-prudential Regulation

- Macro-prudential regulation refers to the surveillance and regulation of systemic risks
- Contrast to traditional approach to regulation – micro-prudential regulation
 - Micro-prudential regulation conceived of the health of the financial system as the health of its individual components
- However the financial crisis stemming from the failure to address systemic risks showed the shortcomings of this traditional approach
- Complement to microprudential regulation

Macro-Prudential Policies

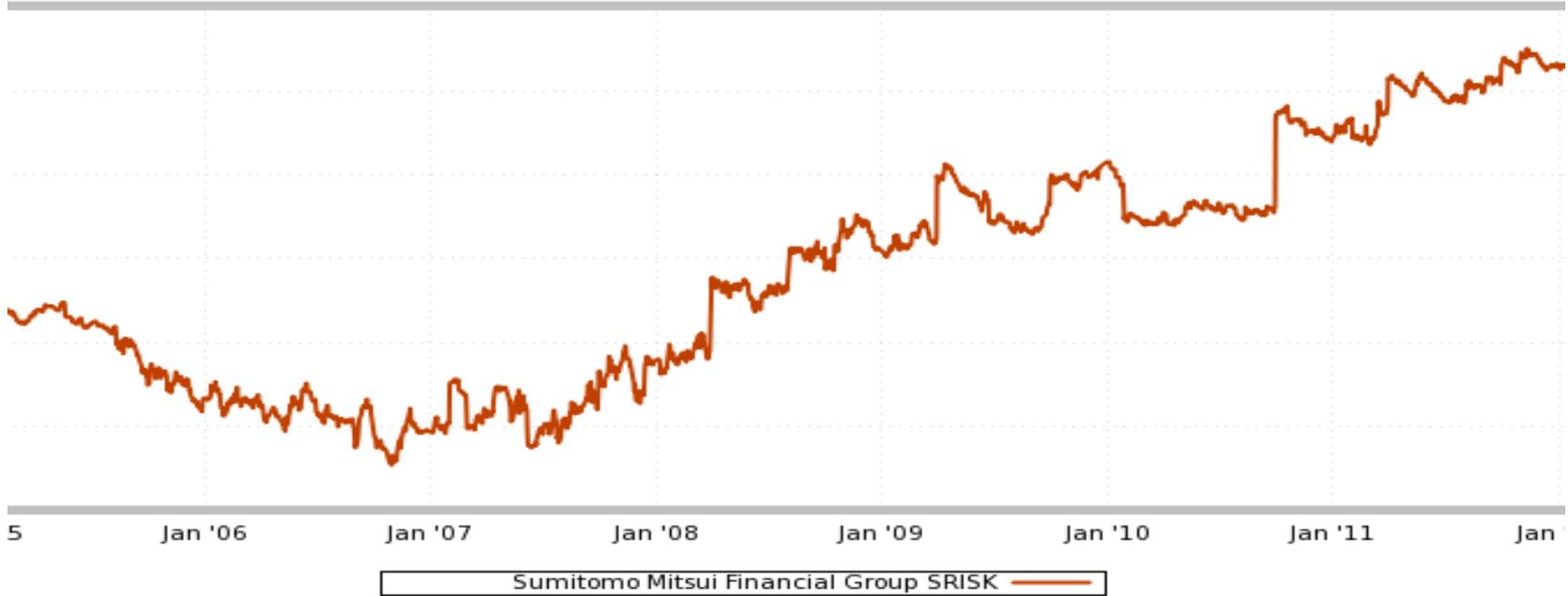
- Four challenges to effectively implementing macroprudential policy
 - Measures to identify the build up of systemic risks over time, and cross-sectionally
 - Developing an appropriate toolkit
 - Devising institutional arrangements
 - Regional and international cooperation to address the supranational dimensions of systemic risk

Empirical Results of Banks Systemic Risk for US, Europe and Asia

- **Exhibit 1 Japan SRISK Time Series for Mitsubishi UFJ FG, Mizuho FG and Sumitomo Mitsui FG (USD million)**

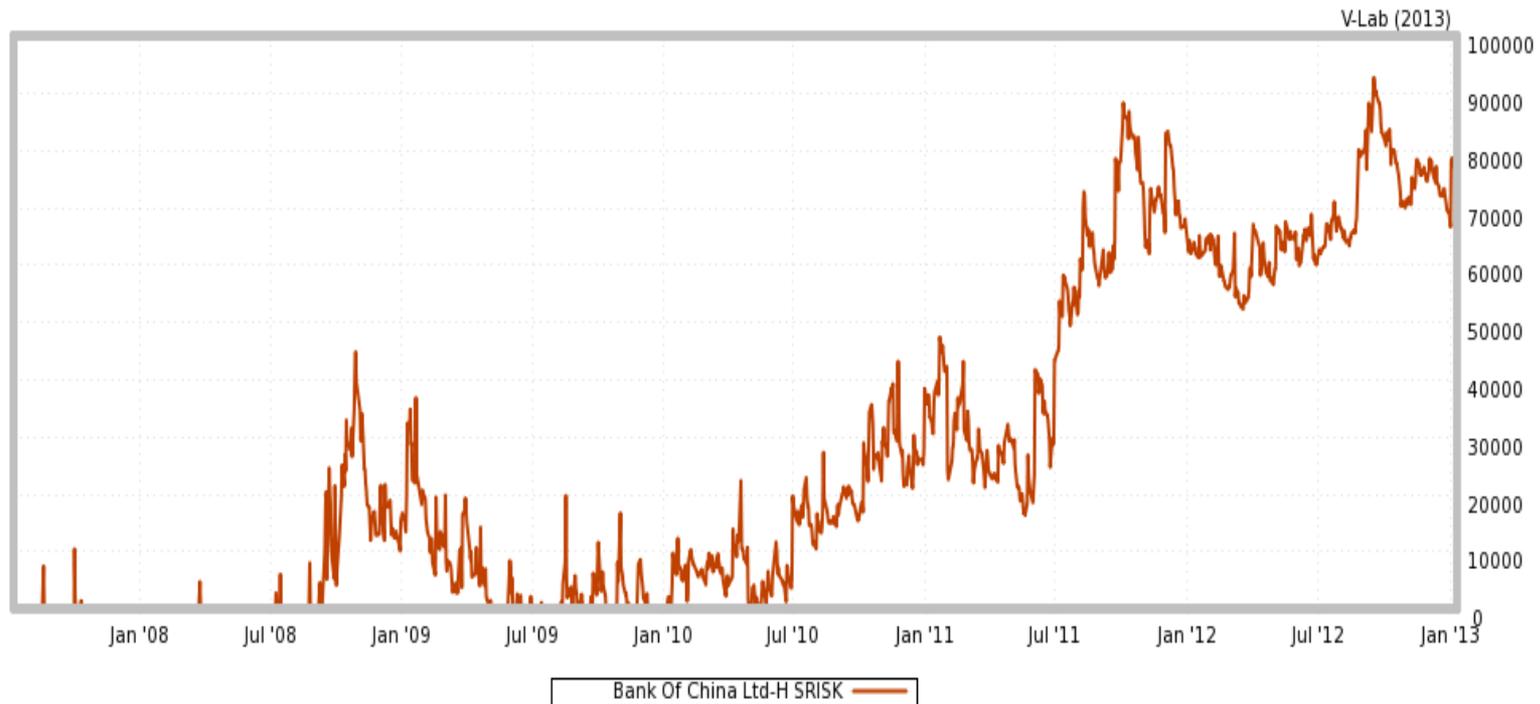


- Source: Estimated by NYU V-Lab, using data mainly from Bloomberg

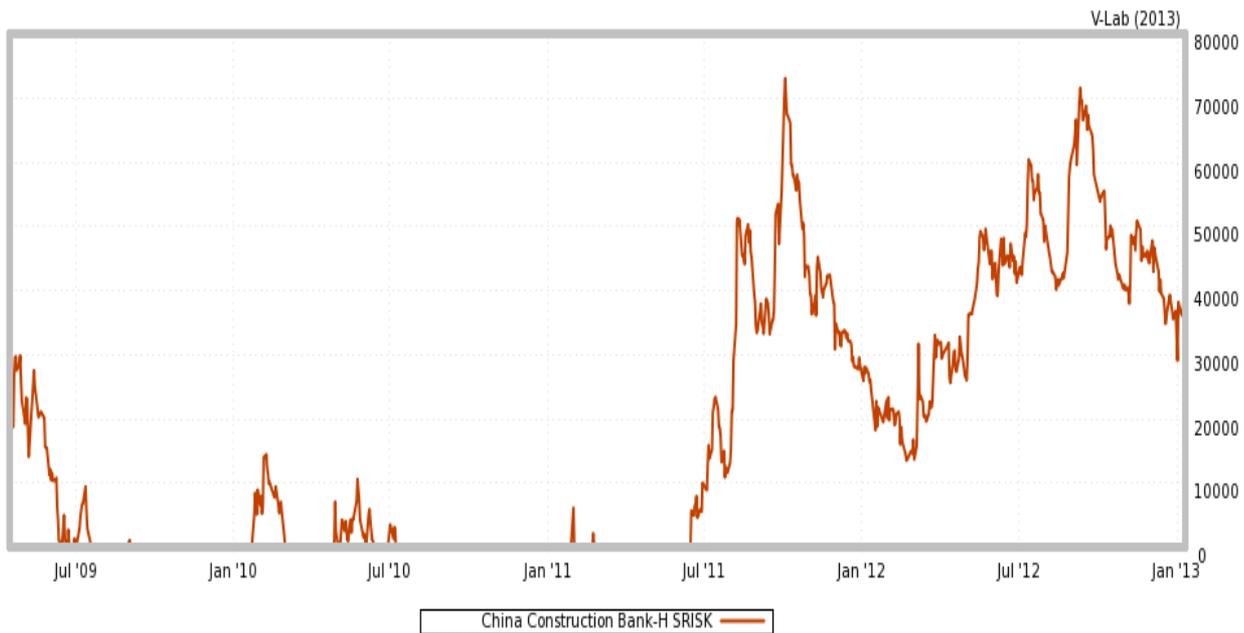


Empirical Results of Banks Systemic Risk for US, Europe and Asia

- **Exhibit 2 China SRISK Time Series for Bank of China, Agricultural Bank of China, China Construction Bank, Bank of Communications, and Industrial and Commercial Bank of China (USD million)**



- Source: Estimated by NYU V-Lab, using data mainly from Bloomberg



Empirical Results of Banks Systemic Risk for US, Europe and Asia

• Figure 9 Global Systemic Risk by Country : India SRISK

Systemic Risk Rankings for 2013-01-11 ▼ (MES is equity loss for a 2% daily market decline)

<u>Institution</u>	<u>SRISK%</u>	<u>RNK▲</u>	<u>SRISK (\$ m)</u>	<u>MES</u>	<u>Beta</u>	<u>Cor</u>	<u>Vol</u>	<u>Lvg</u>	<u>MV</u>
<u>State Bank Of India</u>	14.96	1	6,667	1.79	0.72	0.23	26.5	12.07	30,495.4
<u>Bank of India</u>	7.54	2	3,358	2.12	0.84	0.14	34.5	19.87	3,809.2
<u>Punjab National Bank</u>	7.28	3	3,244	1.72	0.69	0.23	27.3	16.88	5,449.8
<u>Canara Bank</u>	6.53	4	2,910	1.86	0.74	0.16	33.6	18.17	4,067.9
<u>Central Bank Of India</u>	6.32	5	2,816	2.15	0.88	0.14	39.1	38.00	1,205.9
<u>Bank of Baroda</u>	5.79	6	2,582	2.06	0.82	0.19	33	13.87	6,539.8
<u>IDBI Bank Ltd</u>	5.77	7	2,570	2.06	0.83	0.20	33.8	21.03	2,658.8
<u>Indian Overseas Bank</u>	5.51	8	2,456	2.18	0.88	0.16	33.6	32.44	1,296.9
<u>Union Bank of India</u>	4.69	9	2,088	1.54	0.64	0.13	33.9	19.79	2,592.8
<u>UCO Bank</u>	4.61	10	2,052	1.95	0.77	0.18	35.9	34.79	998.6
<u>Syndicate Bank</u>	3.83	11	1,708	1.75	0.72	0.19	35.3	23.50	1,512.7
<u>Allahabad Bank</u>	3.79	12	1,686	1.99	0.79	0.17	32.4	22.29	1,591.3
<u>Corp Bank</u>	3.57	13	1,592	1.73	0.69	0.18	30.3	25.28	1,255.4
<u>Oriental Bank of Commerce</u>	3.13	14	1,394	1.58	0.64	0.10	37.4	19.59	1,755.1
<u>Indian Bank</u>	2.46	15	1,098	2.42	1.00	0.14	33.8	17.01	1,600.6
<u>Andhra Bank</u>	2.27	16	1,012	1.76	0.71	0.17	32	19.41	1,260.2
<u>State Bank of Travancore</u>	2.08	17	929	1.86	0.75	0.23	33.8	30.42	547.6
<u>Bank of Maharashtra</u>	1.95	18	871	1.75	0.69	0.15	30.7	26.12	650.7
<u>Punjab & Sind Bank</u>	1.86	19	829	1.00	0.40	0.13	32.2	42.53	324.5
<u>Dena Bank</u>	1.80	20	800	1.89	0.77	0.15	39.1	22.22	767.0

- Source: Estimated by NYU V-Lab, using data mainly from Bloomberg