

Slow-burn contagion

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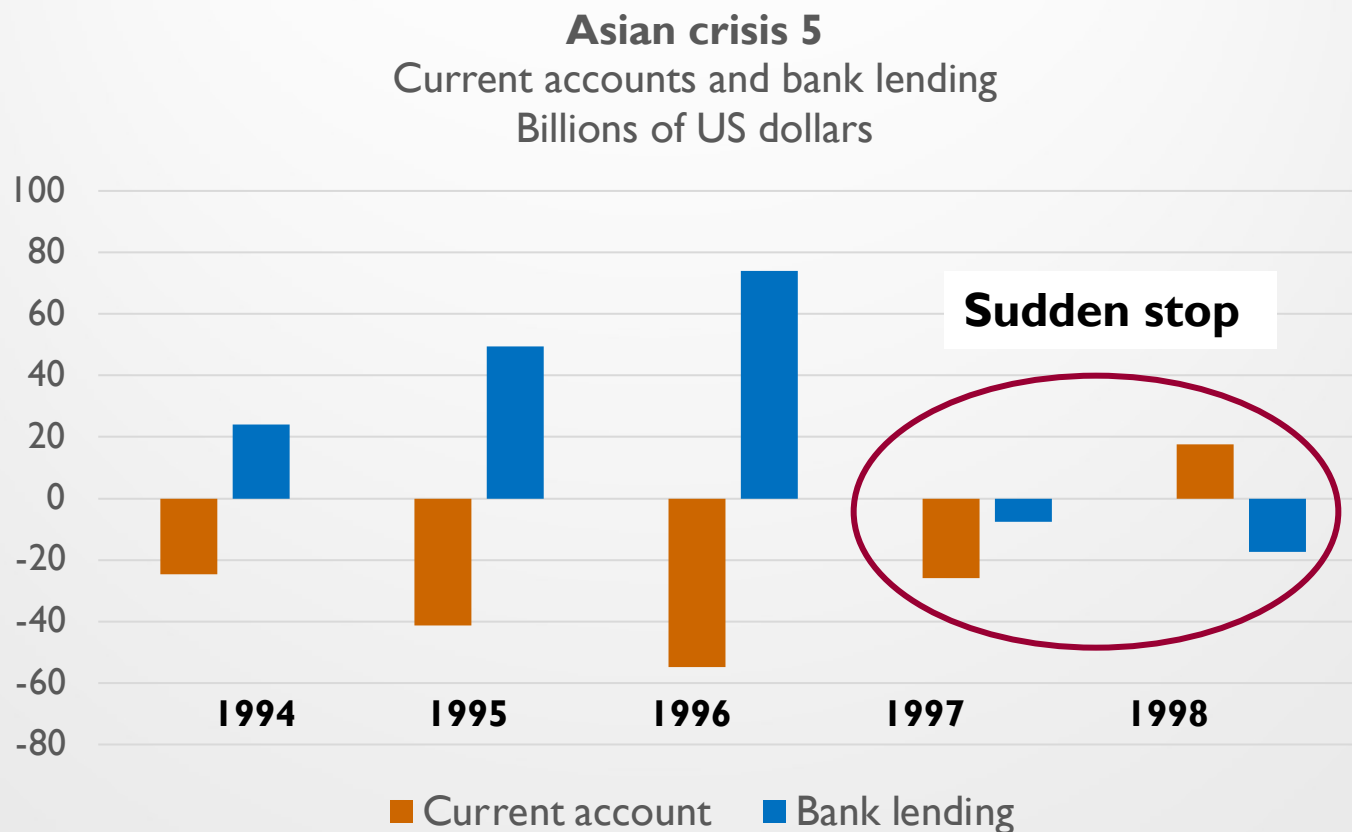


Slow-burn contagion

- Two kinds of contagion
- The risk of sudden-stop contagion
- The risk of slow-burn contagion
 - ✓ Major lenders of ASEAN+3
 - ✓ Measuring network centrality
 - ✓ The difference the global banking network makes
- Takeaways and policy

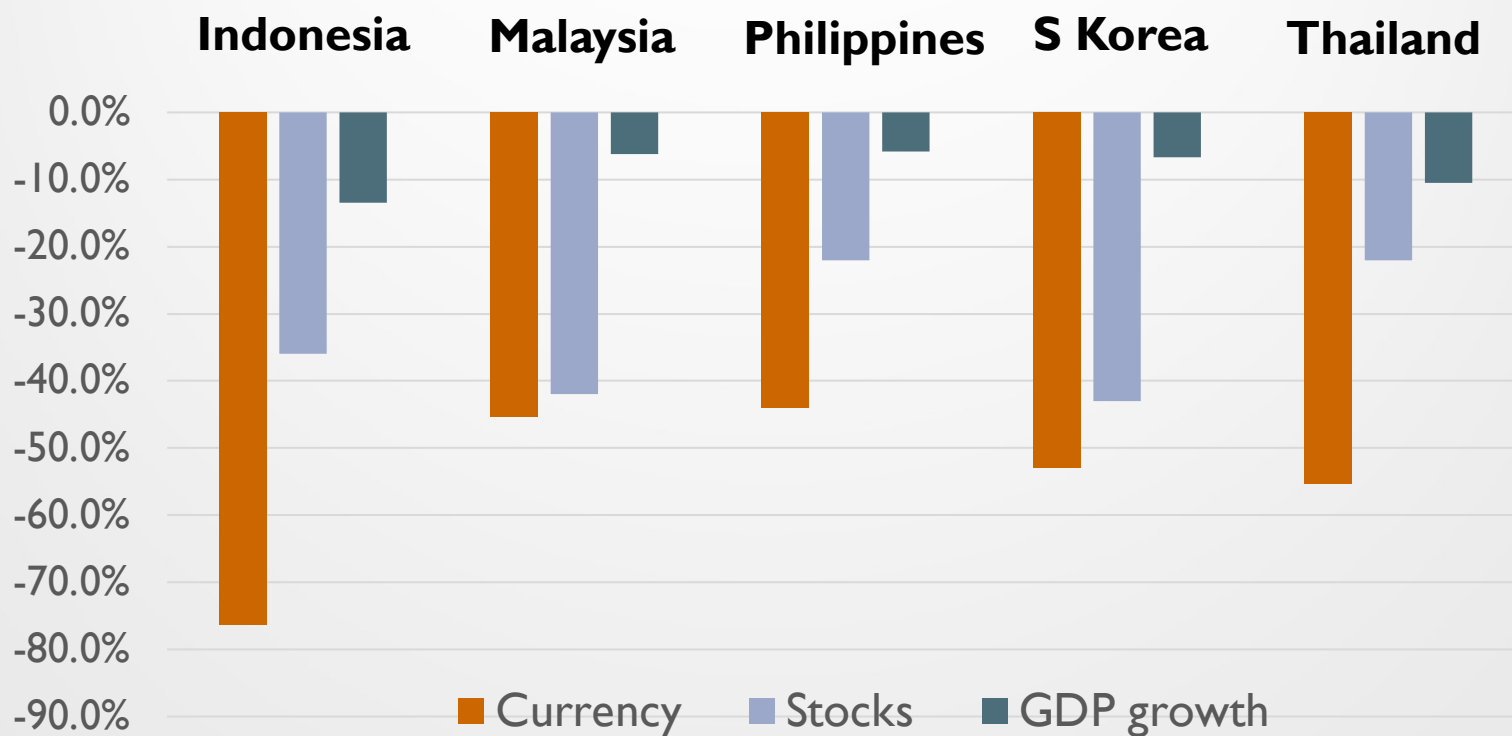
Two kinds of contagion

Current-account balances and bank lending in East Asia 1994-1998



Source: Radelet and Sachs (1998)

Five sudden stops all at the same time



What made the deficits unsustainable?

The famous
see-through
buildings
of East Asia



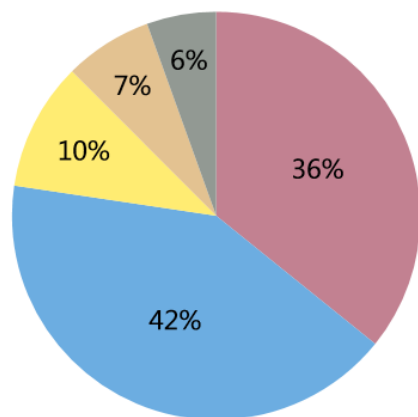
Major lenders on the eve of the crisis

The Asian financial crisis: main creditors and their relative exposures

International claims, as of Q2 1997, by lending bank nationality¹

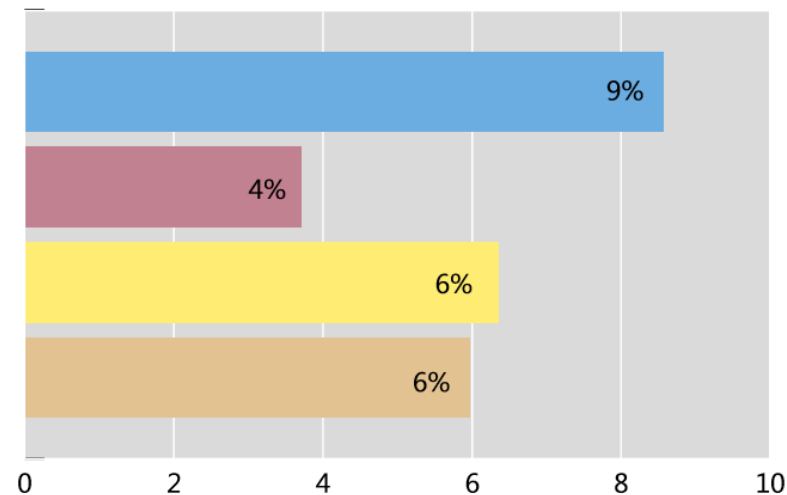
Graph 2

Claims on emerging Asia relative to all creditors



Other reporting countries' banks JP banks
EA banks

Claims on crisis countries, as a share of global portfolio of international claims²



US banks
UK banks

¹ International claims on emerging Asia, which is limited to the countries at the epicentre of the AFC: Indonesia, Korea, Malaysia, the Philippines and Thailand. ² As of Q2 1997, the BIS consolidated banking statistics did not capture claims on advanced economies. For this reason, we scale the international claims by the total of cross-border claims of the particular parent country from the BIS locational banking statistics by nationality. In order to approximate consolidated data, we subtract claims on the interbank sector from all-sector claims.

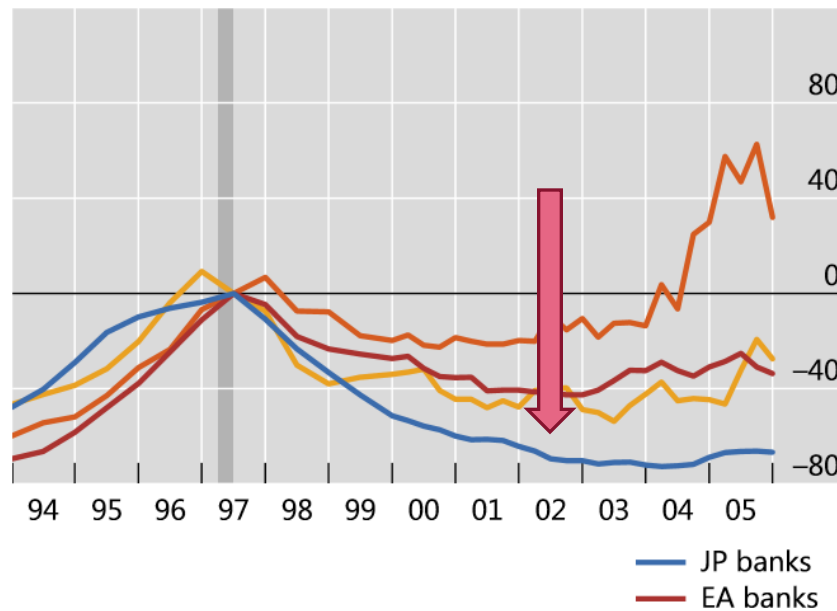
Slow-burn contagion even without sudden stops

The common lender channel in the Asian financial crisis

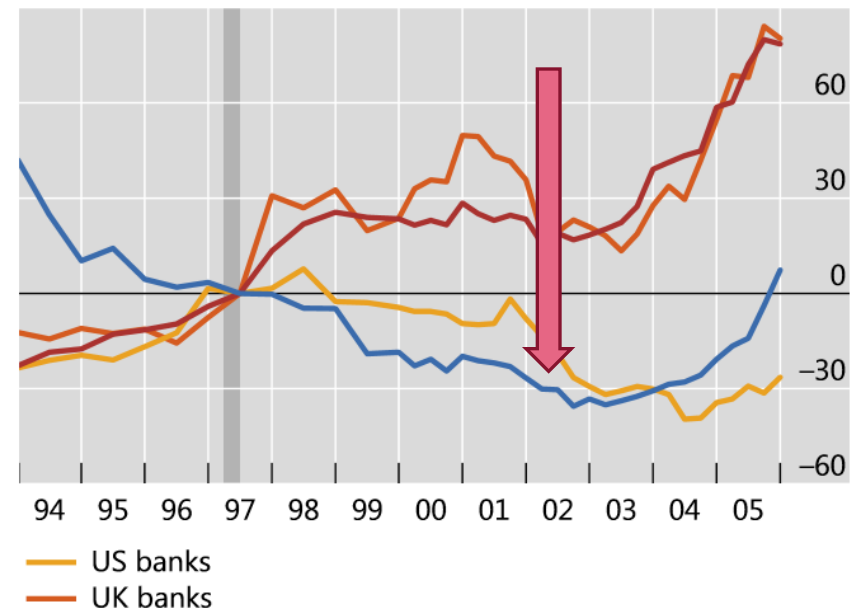
International claims on EMEs, by lending bank nationality, Q2 1997 = 0¹

Graph 3

Claims on emerging Asia²



Claims on non-Asian EMEs³



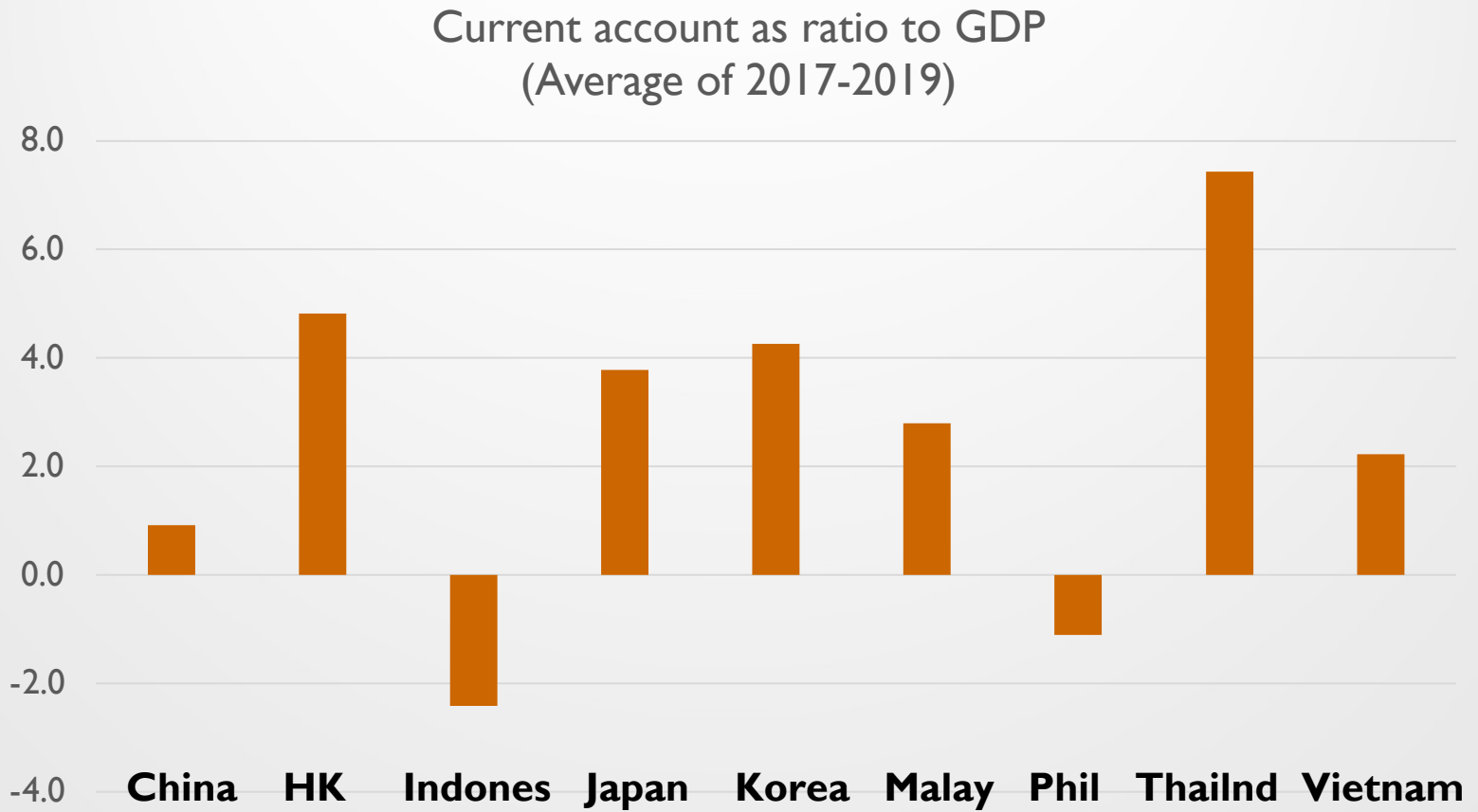
The grey bar indicates the start of the crisis.

¹ Percentage changes relative to the start of the AFC. ² Emerging Asia is limited to the countries at the epicentre of the AFC: Indonesia, Korea, Malaysia, the Philippines and Thailand. ³ Emerging market economies in Africa and Middle East, Latin America and Europe.

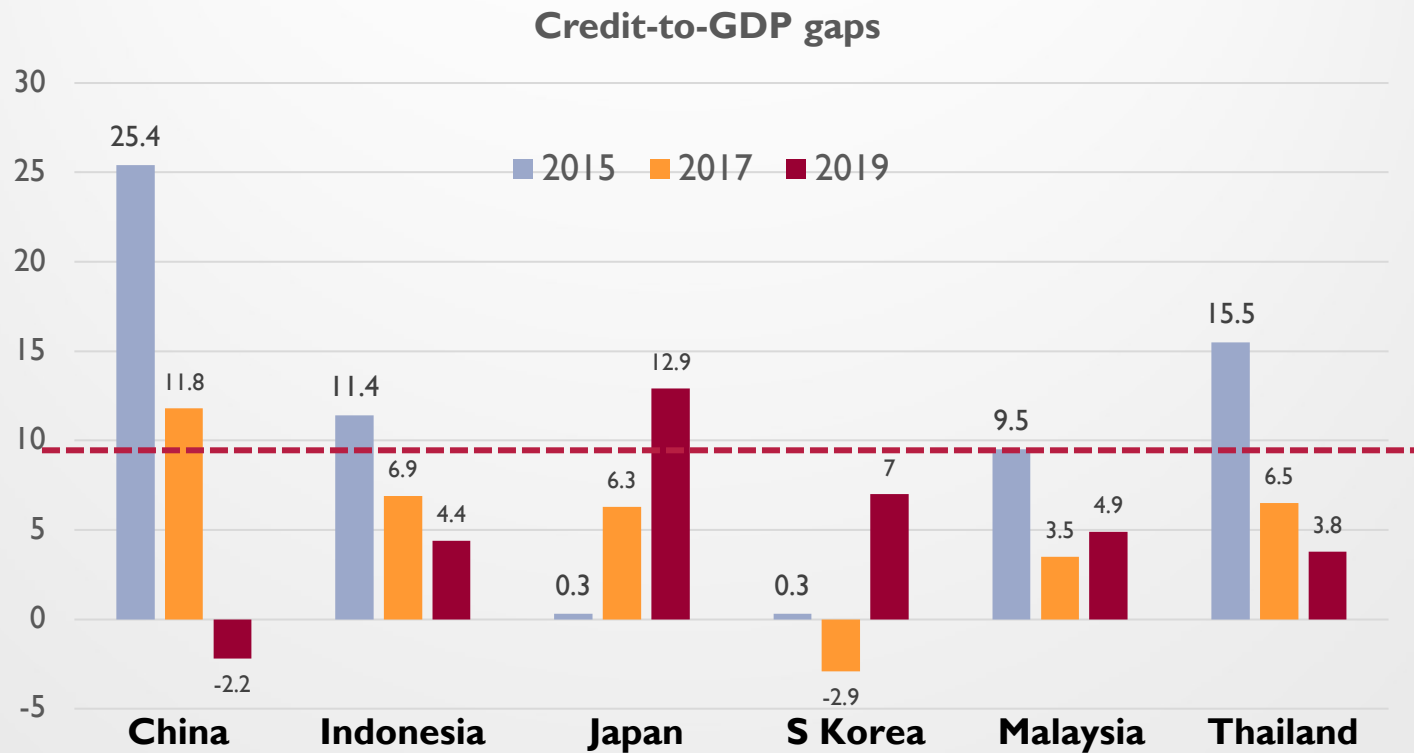
Source: Koch and Remolona (2018)

The risk of sudden-stop contagion

Most current accounts are in surplus



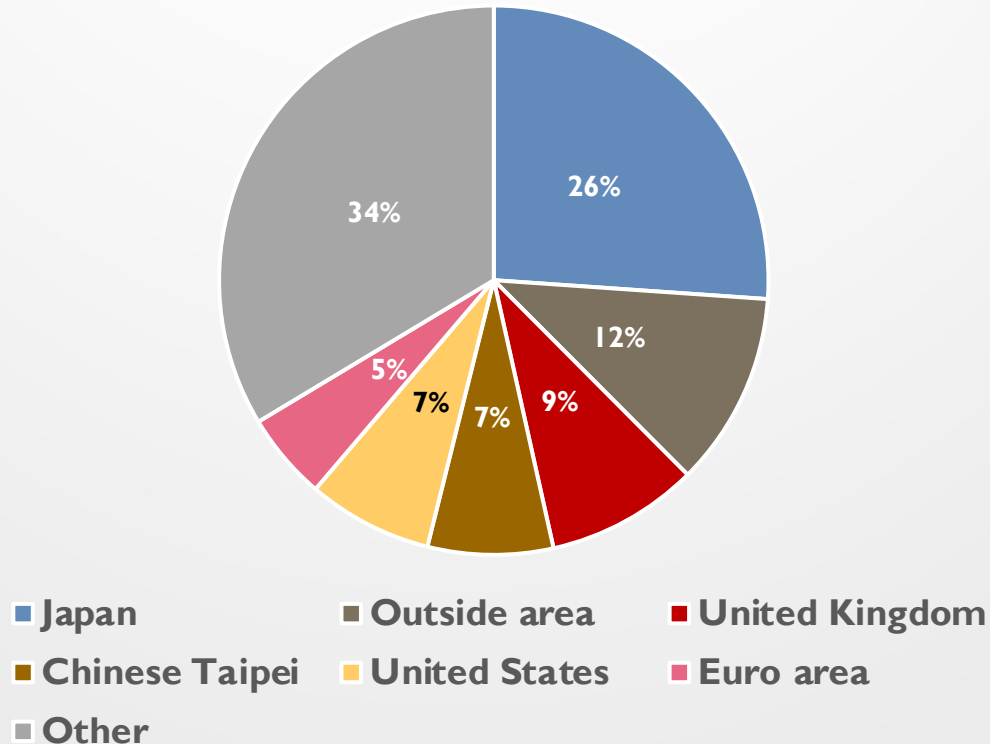
More importantly, there are few signs of excessive borrowing



The risk of slow-burn contagion

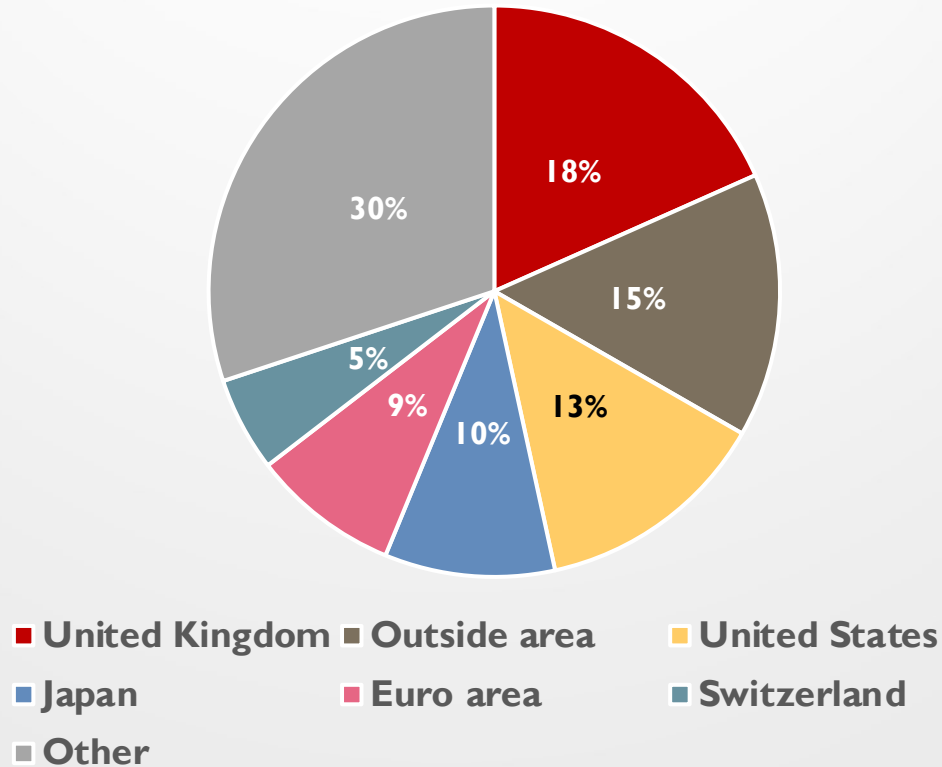
Japanese banks now dominate direct lending to ASEAN ex Singapore

Direct lending to ASEAN ex Singapore
(USD357 billion in claims as of 2019 Q4)



UK and US banks lead direct lending to China and South Korea

Direct lending to China and South Korea
(USD669 billion in claims as of 2019 Q4)



But what about the links among global banks?

Proportion of lending to total claims on bank counterparty				
	Borrowing banks			
Lending banks	Japan	United Kingdom	United States	Euro Area
Japan		8.7%	23.1%	7.6%
United Kingdom	21.6%		10.4%	19.2%
United States	36.5%	7.1%		8.0%
Euro Area	23.0%	58.2%	23.5%	

Who exactly are these banks?

	G-SIBs as of Nov 2019		G-SIBs as of Nov 2019
Bucket 4 (2.5%)	JP Morgan Chase	Bucket 1 (1.0%)	Agricultural Bank of China Bank of New York Mellon China Construction Bank Credit Suisse Groupe BPCE Groupe Crédit Agricole ING Bank Mizuho FG Morgan Stanley Royal Bank of Canada Santander Société Générale Standard Chartered State Street Sumitomo Mitsui FG Toronto Dominion UBS UniCredit
Bucket 3 (2.0%)	Citigroup HSBC		
Bucket 2 (1.5%)	Bank of America Bank of China Barclays BNP Paribas Deutsche Bank Goldman Sachs Industrial and Commercial Bank of China Mitsubishi UFJ FG Wells Fargo		

Measuring network centrality

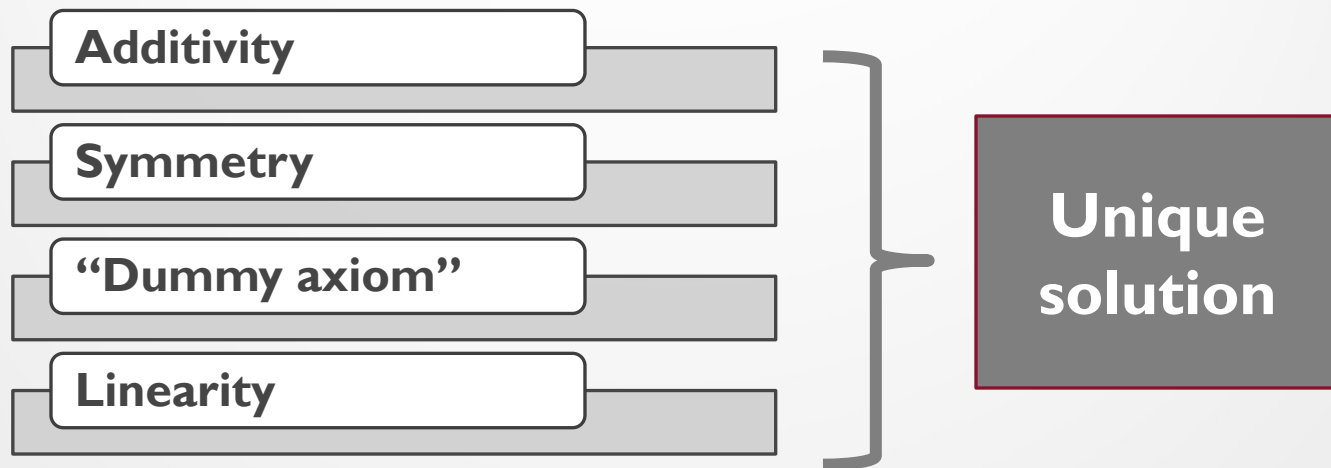
Determining G-SIBs

Denominators	Indicators
Size	<ul style="list-style-type: none">• Basel III total exposure
Cross-jurisdictional activity	<ul style="list-style-type: none">• Cross-jurisdictional claims• Cross jurisdictional liabilities
Interconnectedness	<ul style="list-style-type: none">• Intra-financial system claims• Intra-financial system liabilities• Securities outstanding
Substitutability/infrastructure	<ul style="list-style-type: none">• Assets under custody• Payments• Underwritten transactions
Complexity	<ul style="list-style-type: none">• OTC derivatives• Level 3 assets• Securities trading

Shapley values

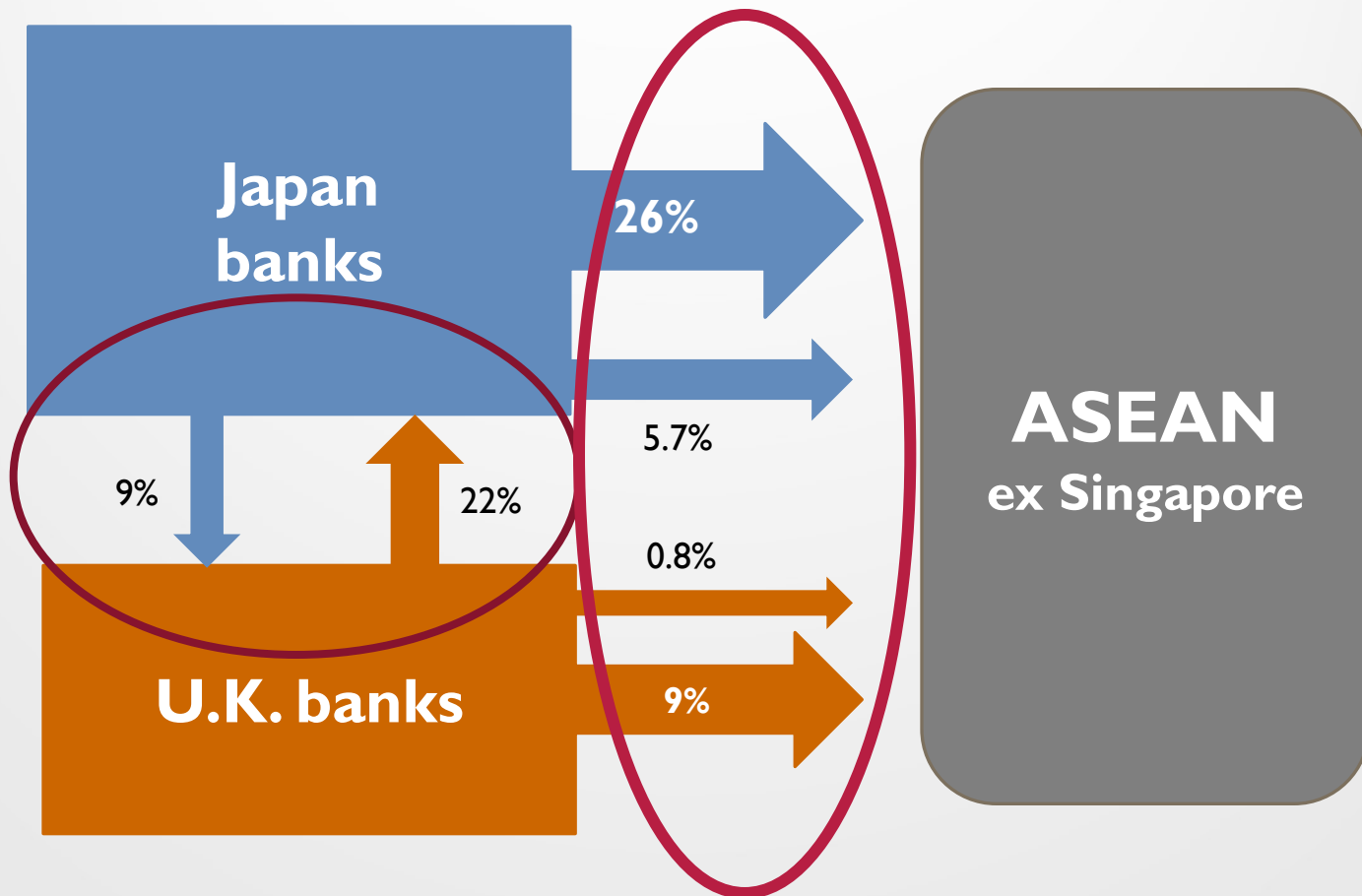
- In a cooperative game, a coalition of players generates a payoff shared by the coalition as a whole
- The Shapley value divides up that payoff to allocate it among individual players based on their marginal contributions.
- Tarashev, Tsatsaronis and Borio (2016) apply the Shapley value to measure the systemic risk of large banks, but they don't take account of borrowers.

The cool thing about Shapley values



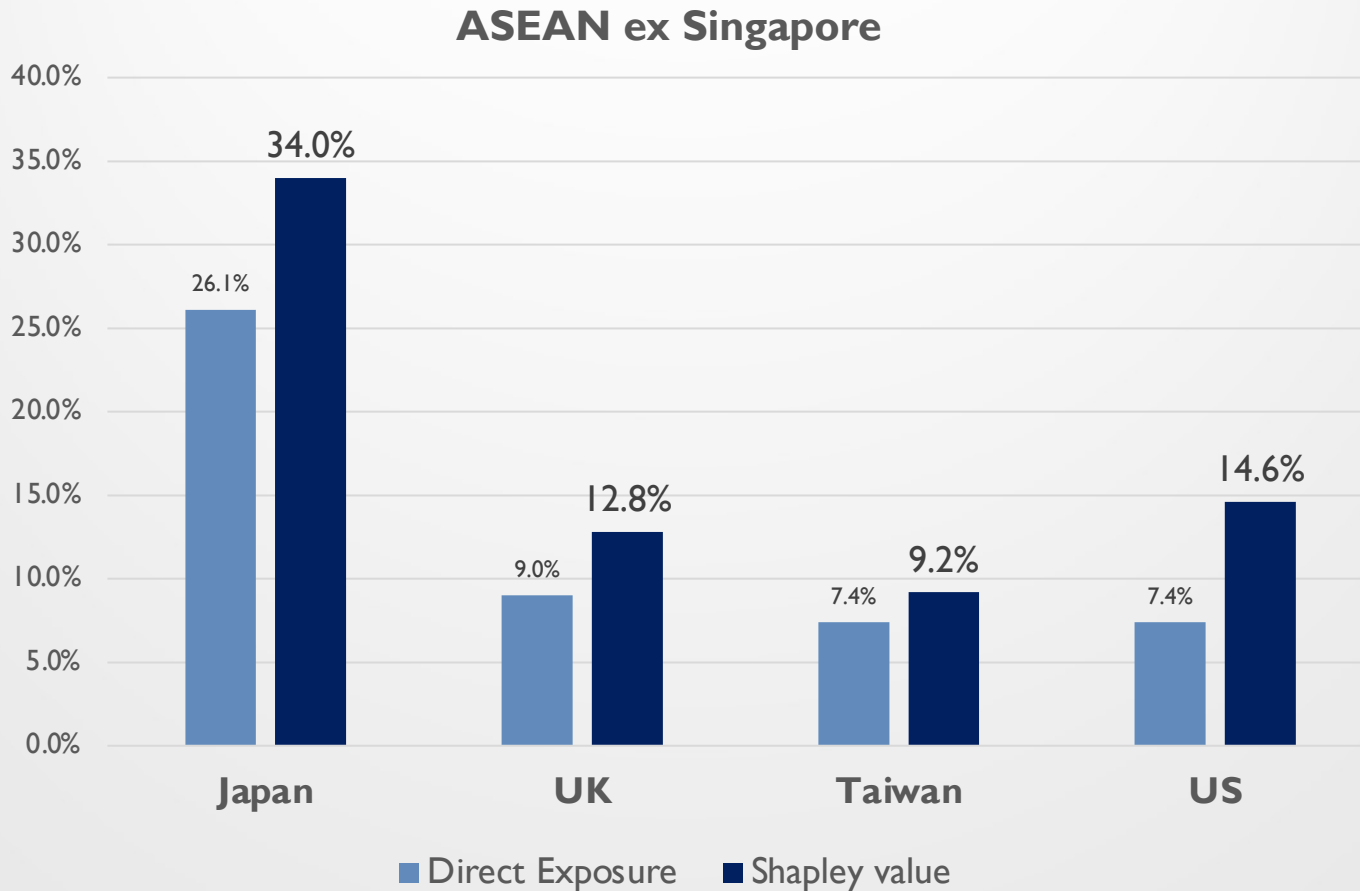
$$\phi_i(N) = \frac{1}{|N|!} \sum_G [v(B_i^G \cup \{i\}) - v(B_i^G)]$$

Calculating the characteristic function with two banking systems

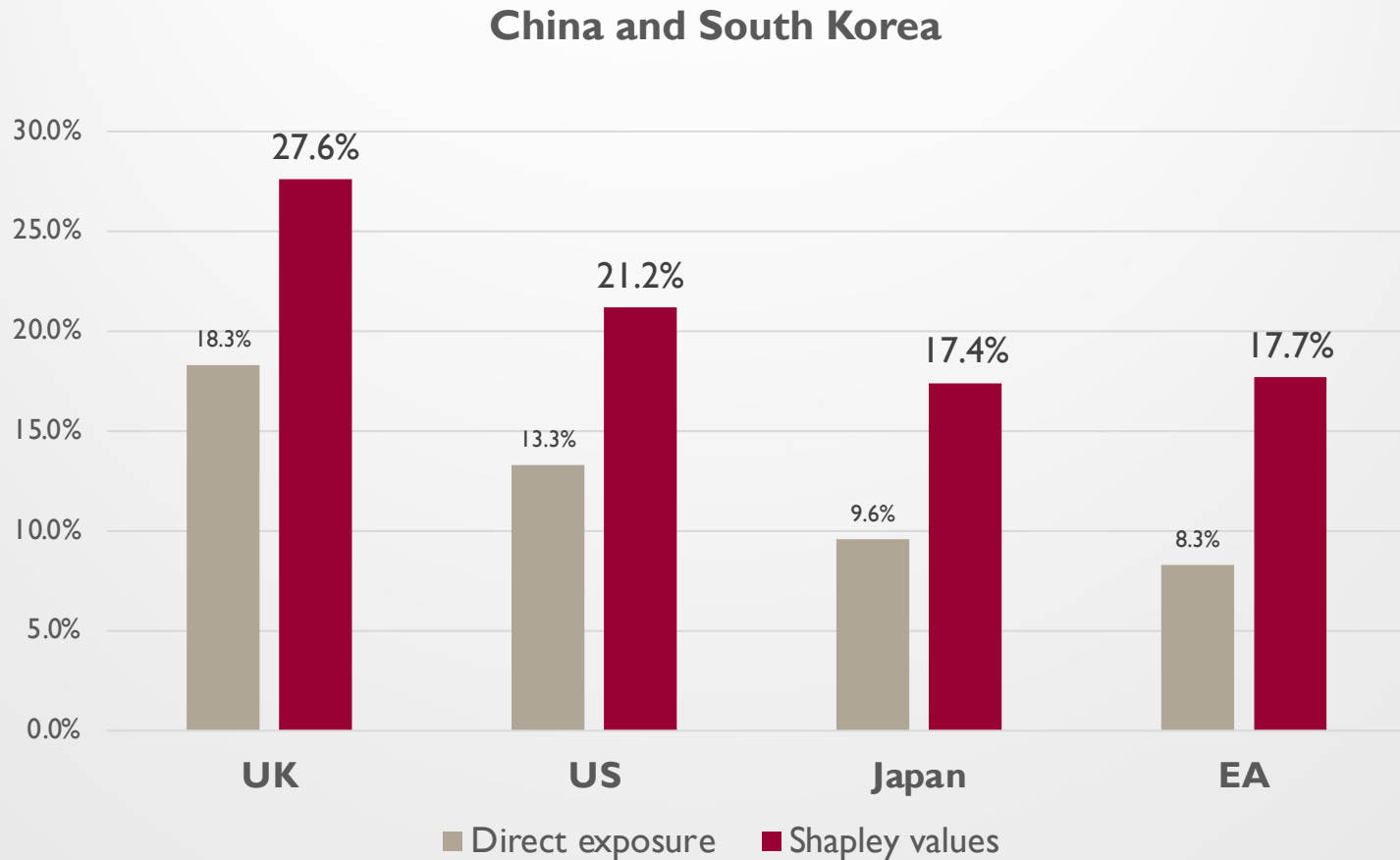


**The difference the global banking
network makes**

How should we worry about global bank contagion?



China and South Korea might worry about UK and US banks



Takeaways

- Sudden-stop contagion not so pressing concern
- But slow-burn contagion a concern, because of a common reliance on a few global banks
- In the global banking network, the strongest links are between Japanese and US banks and between UK and euro area banks
- Shapley values suggest hidden risks of slow-burn contagion through US and euro area banks

Policy

Shapley values in G-SIBs?

- Would FSB consider a Shapley-value indicator in setting G-SIB capital buffers?

Shapley values in regional SIBs?

- Can ASEAN agree on framework for regional SIBs that account for Shapley values?

Shapley values in macroprudential measures?

- Impose macroprudential tax on foreign borrowing as concentration rises

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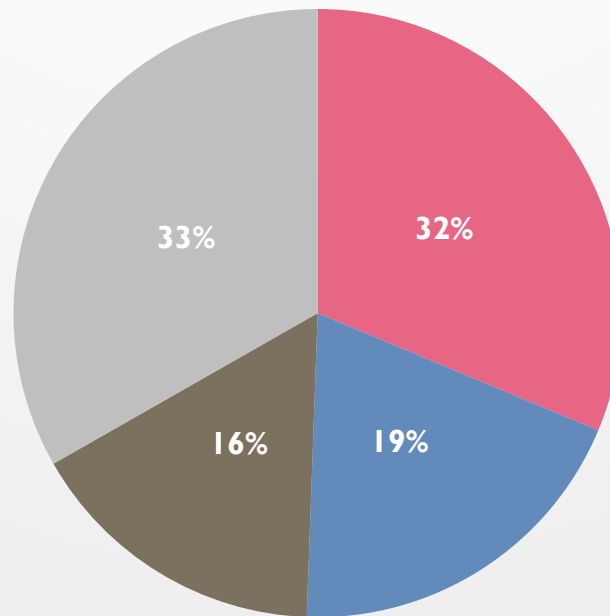
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Current accounts are driven by common factors

Explaining changes in the ratios of current accounts to GDP of ASEAN, China and Korea, 2010:Q4-2018:Q4



■ Ist PC ■ 2nd PC ■ 3rd PC ■ Other

Some current accounts do tend to move together

