

China Commodity Trade Finance

Risks Overstated for HK, SG Banks; Ditto Commodity Prices

Equity Research Views

- **Opportunities shade risks** – Trade finance in HK and SG has surged at over 40% pa in recent years, well above single-digit growth in physical trade and sparking investor fears that banks ultimately are funding speculative, carry-trades to China's shadow banking system. In this report, we look in-depth at the mechanics and risks of commodity trade finance, and argue that opportunities in regional/cross-border trade and capital-efficient flow-based income are materially positive for banks.
- **SG banks: reiterate Buy on DBS** – China/ intra-Asian trade & investment growth is too big an opportunity for banks to ignore. DBS has cited satisfaction with the quality of its trade/China exposures (DBS China/HK: 35% of 2013 loans, 26% of PBT). We like [DBS' broad-based earnings model](#), with multiple growth engines (not just China), plus reasonable valuations (10.7x PER, 1.1x P/B). But we concede that with concerns over the quality and stability of China-related earnings, markets may continue to assign a "China banks PER" (c.5x) to this part of DBS' earnings.
- **HK banks: concerns over-estimated but regulatory risk exists** – China-related trade finance is not that large for HK banks (4.8% of sector loans) but regulatory and legal risks potentially loom for those failing to carry out adequate due diligence. We take comfort from HKMA's recent statement that it was "satisfied" with the sector's underwriting standards and that Mainland-related loans were generally backed by "genuine economic activities". Unlisted HK subsidiaries of China banks have been most aggressive in trade finance. Our top pick is HSB, given multiple value drivers (excluding trade finance, though, to which it has sector-low exposure).
- **China: shadow banking, currency mismatch** – Commodity trade financing (est. cUS\$85bn) seems to be a minor contributor to China's US\$5trn shadow banking system. But it does make China's financial system more vulnerable to a pullback in foreign banks' credit appetite and the RMB exchange rate (FX borrowings of Chinese companies are 11% of total system loans, but not yet at the 30% peak in pre-Asian crisis Thailand.) Rising credit risks would negatively impact trade finance. This supports our cautious stance on Chinese banks and preference for big banks.

Commodity Research Views

- **Chinese commodity financing presents a far more modest risk to commodity prices than generally believed.** Financing deals do allow financiers to pay a premium and engage in what would otherwise be loss making trade, but this premium is relatively small (1.5% or less). Financing deals are also contributing to a shift in inventories to China, though this may ease as financing activity moves overseas. Copper is by far the most exposed commodity to Chinese financing deals, and forced inventory liquidation would drive prices lower.

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See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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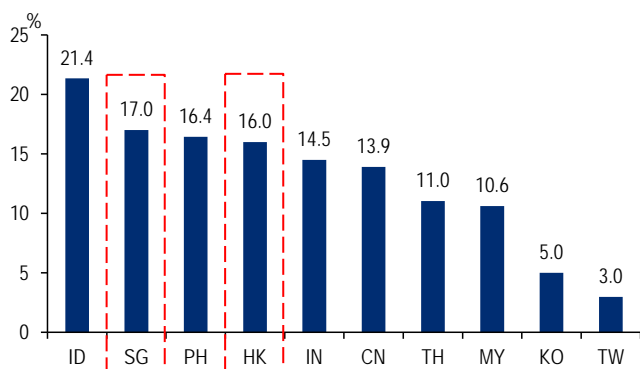
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Trade Finance Vastly Outpacing Trade

Big loan growth in HK and SG

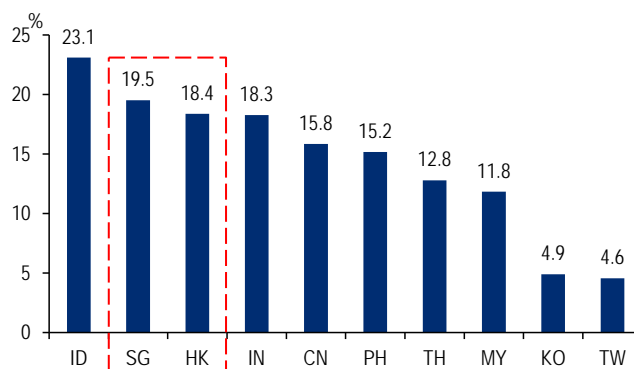
Despite HK and Singapore being the most developed economies in the region, loan growth last year in HK and Singapore was surprisingly among the highest in Asia. Loan growth in 2013 was 17.0% in Singapore and 16.0% in HK; this was only exceeded in Asia by Indonesia (21.4%) and the Philippines (16.4%) – two of the region's least developed economies.

Figure 1. Asia 2013 Loan Growth (YoY %)



Source: CEIC, Citi Research

Figure 2. Asia Loan Growth CAGR since Dec. 2009

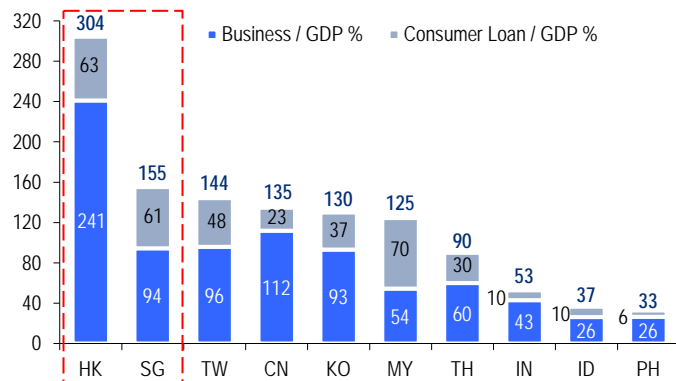


Source: CEIC, Citi Research

HK and SG are already the two most penetrated credit markets

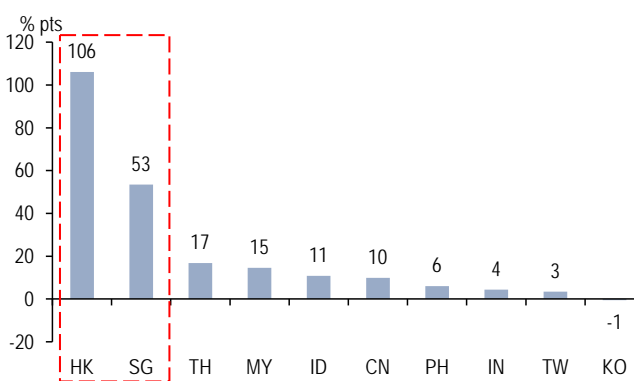
The loans/GDP ratio, a traditional measure of credit penetration, for HK and Singapore were unsurprisingly the highest in Asia at 304% and 155% respectively, having risen the most in the past four years and reflecting HK and Singapore's roles as offshore financing centers in the region.

Figure 3. Asia 2013 Loans / GDP (%)



Source: CEIC, Citi Research

Figure 4. Asia Change in Loan / GDP % since Dec-2009 (%pts)

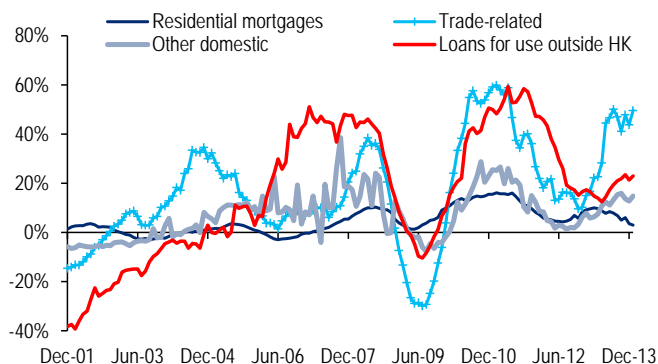


Source: CEIC, Citi Research

Trade finance has been a key driver, growing over 40% pa

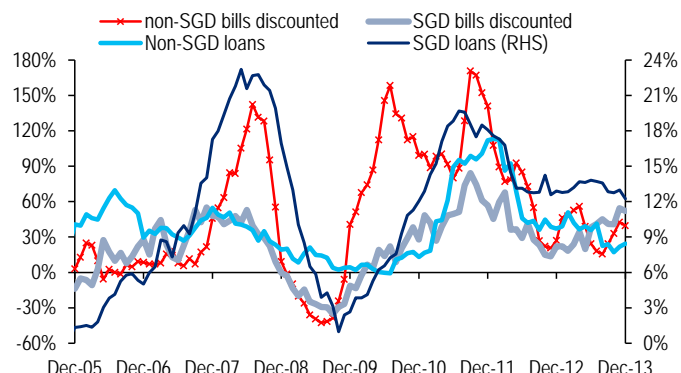
Trade finance and offshore lending have been significant drivers of credit expansion in HK and Singapore, and trade finance has grown at an eye-popping CAGR of 40% in HK and 62% in Singapore respectively since 2010.

Figure 5. Hong Kong – Loan Growth by Type (YoY %)



Source: HKMA, Citi Research

Figure 6. Singapore – Loan Growth by Type (YoY %)



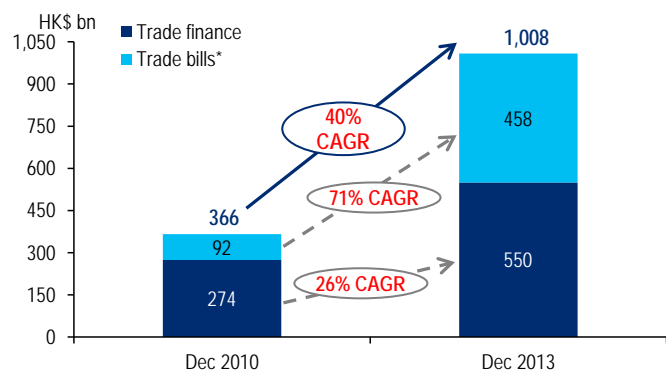
Note: Non-SGD loans represent loans issued to non-residents whereas non-SGD bills represent bills discounted payable outside Singapore; Source: MAS, Citi Research

Trade loans vs trade bills

In HK, trade finance related assets on the balance sheet of the banks consist of two components – trade finance loans where the counterparty risk is to the company importing the goods, and trade bills where the counterparty risk is to the LC issuing bank (the LC issuer takes the counterparty risk of the importer). Data for trade bills in the HK banking system is not available and so we have aggregated the figures bottom-up from 10 leading banks as our estimate.

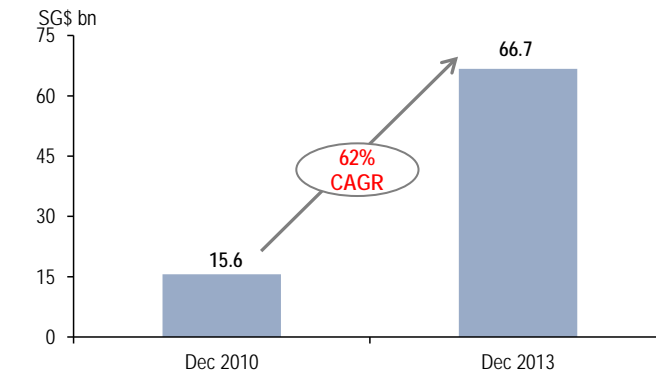
In Singapore, the only system data available is trade bills and we have used the non-resident portion of this as the series for Singapore trade finance.

Figure 7. Hong Kong Trade Finance Growth



* Based on aggregate data of 10 leading banks
Source: Citi Research

Figure 8. Growth in Singapore Trade Bills (Non-Resident)

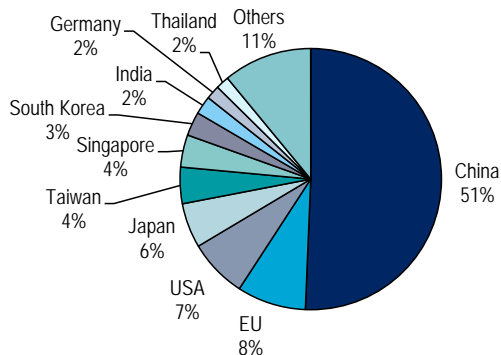


Source: Citi Research

Physical trade is growing only in single-digit in HK and SG

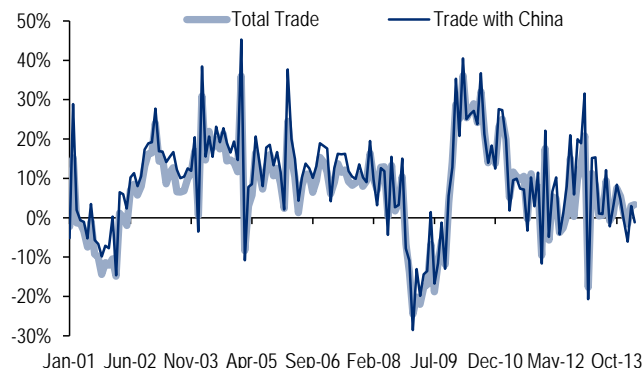
In contrast, total physical trade in HK has grown at a CAGR of only 6.0% since 2010, and in Singapore only 2.8% CAGR - a much more subdued trajectory compared with the high-flying growth in trade finance.

Figure 9. Hong Kong's Major Trading Partners (Past 12 months)



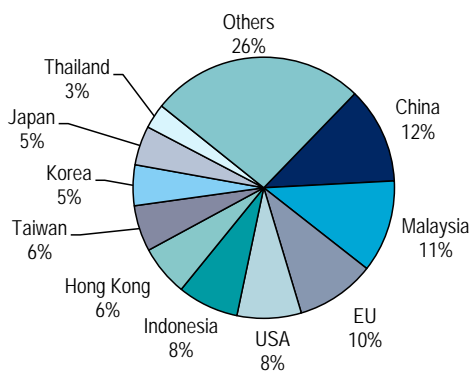
Note: Total Trade = Imports + Exports
Source: CEIC, Citi Research

Figure 10. Hong Kong Total Trade Growth YoY



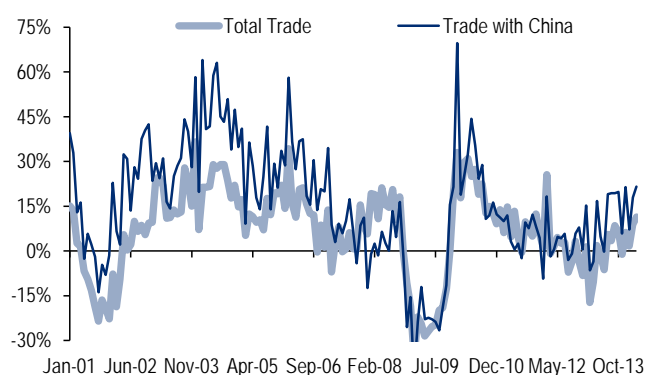
Note: Total Trade = Imports + Exports
Source: CEIC, Citi Research

Figure 11. Singapore's Major Trading Partners (Past 12 months)



Note: Total Trade = Imports + Exports
Source: CEIC, Citi Research

Figure 12. Singapore Total Trade Growth YoY

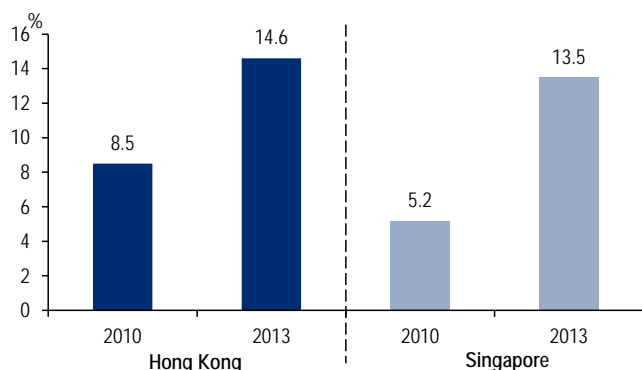


Note: Total Trade = Imports + Exports
Source: CEIC, Citi Research

China has been the key driver of trade finance in HK and SG

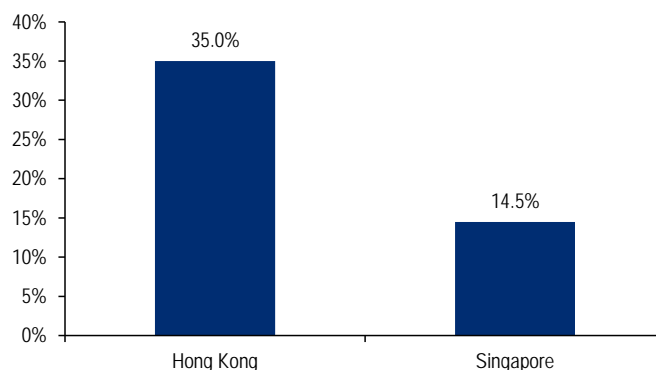
China has been a significant driver of the trade finance growth in HK and Singapore and a portion of this, we believe, is related to commodities trade financing where the purpose of the trade is purely financial, i.e. to facilitate the borrowing of cheap credit offshore and to repatriate the proceeds onshore for higher yielding investments in China. We estimate that trade finance exposures reached 14.6% and 13.5% of loans in HK and Singapore in 2013, and total China related exposures reached 35% of loans in HK and 14.5% of loans for the three major Singapore banks.

Figure 13. Trade Finance as Percent of System Loans (%)



Note: HK includes trade finance and trade bills; Singapore includes trade bills only.
Source: MAS, HKMA, Citi Research

Figure 14. China Related Loans as Percent of Loans in Hong Kong and Singapore (2013)



Note: Singapore based on aggregate exposure for the three major domestic banks.
Source: Company Reports, HKMA, Citi Research

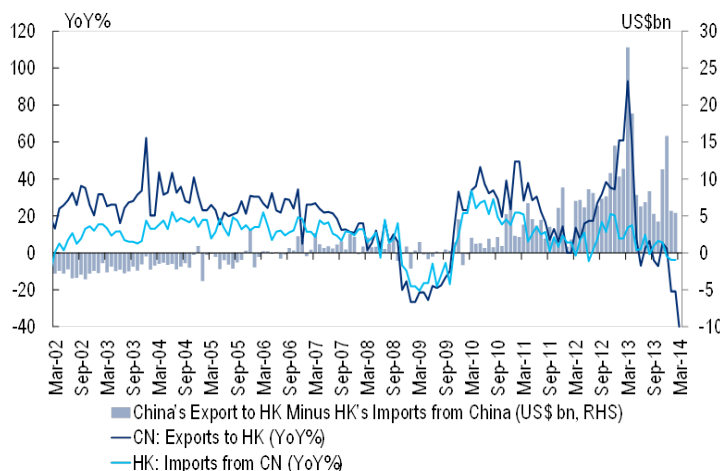
Investors' Concerns on China Trade Finance

For trade finance, while HK and SG banks' approach to risk management appears to us to be reasonably thorough, and historic international trade finance data suggests that default risks have been extremely low, it seems that investors closer to the domestic China banking story have reservations that foreign banks through their offshore China trade finance loans may have exposed themselves to greater risks. The concerns appear to focus on two key areas:

Concern #1: Rates arbitrage play promoting "over-invoicing", trade finance growth seemingly in excess of underlying trade

[i] Fears that China trade finance activity looks somewhat in excess of China's underlying trade flows, with investors pointing to exports "over-invoicing" — the underlying attraction being the arbitrage of being able to borrow in USD at a lending rate well below the rates currently earned on RMB deposits, and an assumption (until recently) of steady RMB appreciation versus the USD. An often quoted example is offshore banks' trade loans to onshore Chinese companies used to fund the same shipment of a high value commodity (such as copper) several times over.

Figure 15. The difference between CN exports to HK and HK imports from CN has been material and growing since 2010



Source: CEIC, Citi Research

**Concern #2: Offshore trade loan funds
finding their way into the domestic
economy via “shadow banking”**

While it is difficult to quantify how large this “over-invoicing” issue has become, one interesting trend is to how reported monthly data on China’s exports to Hong Kong has been meaningfully higher than reported Hong Kong imports from China. The data suggests that since 2010 that difference had become material and growing, notably in 2012. The peak in Nov-Dec13 was when funding was tight, but in early 2014 it seems to have cooled as RMB depreciation concerns emerged.

[ii] Possible second derivative risks arising from the onshore Chinese companies effectively “on-lending” the trade loan funds raised for a high spread, either directly (presumably to credit-starved smaller companies) or indirectly (through the purchase of high yield unit trusts and similar investment vehicles).

Below, we illustrate how these risks can emerge by showing how a more “normal” trade finance transaction can potentially be “abused” in the context of reported current practices in a China context.

How Commodity Trade Financing Works

Basic commodity trade finance using commercial letter of credit (L/C)

Basic trade finance flow diagram:

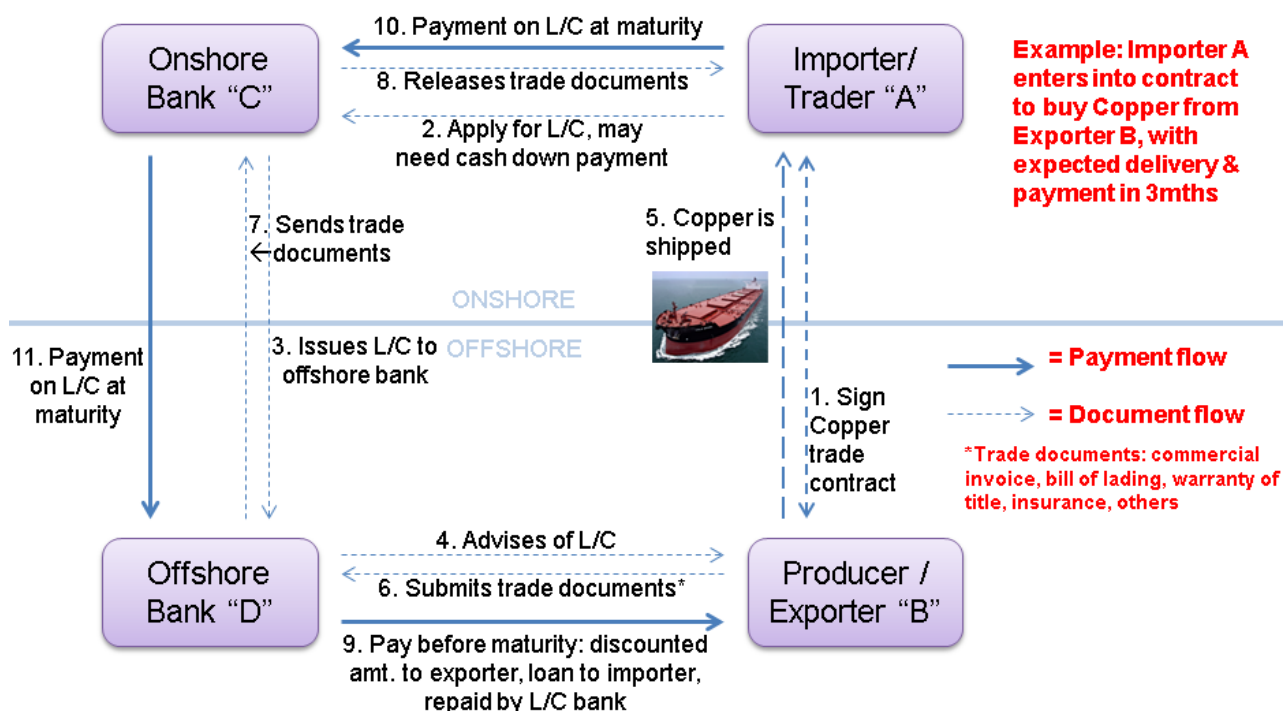
[a] Onshore Bank C issues L/C, committing to Exporter B that payment will be made for the shipment in 90 days (the maturity date of the L/C).

[b] Exporter B releases trade documents on being advised of the L/C.

[c] Offshore Bank D pays Exporter B ahead of the maturity of the L/C, thereby providing a trade loan to the importer.

There are many variations of how banks can intermediate in a trade transaction with different permutations of the risks assumed and profits to be earned. A simplified version is shown in the flow diagram below, assuming trade payment facilitation via a commercial L/C issued by an Onshore Bank "C" on behalf of the Importer "A" (a commodity consumer such as a fabricator for refined copper, steel mill for iron ore, etc.). In this example we assume the Offshore Bank "D", aside from facilitating payment and acting for the Exporter "B", advances the value of the L/C (less a discount) to the Exporter "B" ahead of the L/C payment due date, thereby making a trade loan to Importer "A". Offshore Bank "D" is comfortable doing this because it has a banking relationship with Importer "A", with the loan amount secured on the commodities shipped as collateral and with the knowledge that Onshore Bank "C" will repay the loan at the L/C maturity. This is standard trade finance and not considered an unusual 'commodity financing' activity

Figure 16. Trade Finance Example Using Commercial L/C



Notes to basic trade finance diagram

1. Chinese Importer A enters into a contract to buy copper from Exporter B. The whole transaction including shipment may take up to 90 days to complete.
2. Chinese Importer A applies for L/C from Onshore China Bank C. The L/C will detail payment terms and conditions. Payment typically after 90 days, up to 180 days.
3. Onshore Bank C issues L/C to Offshore Bank D. 4. Bank D advises Exporter B of the L/C issue.
5. Exporter B ships the copper to China, obtains bill of lading from the carrier.
6. Exporter B submits various trade documents (invoice, bill of lading, others) to Offshore Bank D. 7. Offshore Bank D sends the trade documents to Onshore Bank C.
8. Onshore Bank C releases the trade documents to Importer A, who will use the documents to receive the incoming copper shipment
9. Offshore Bank D pays Exporter B *before* L/C maturity at a discount to the L/C value (thereby creating a trade loan to Importer A)
10. China Bank C receives payment from Importer A at maturity
11. China Bank C pays Offshore Bank D at maturity under the terms of the L/C.

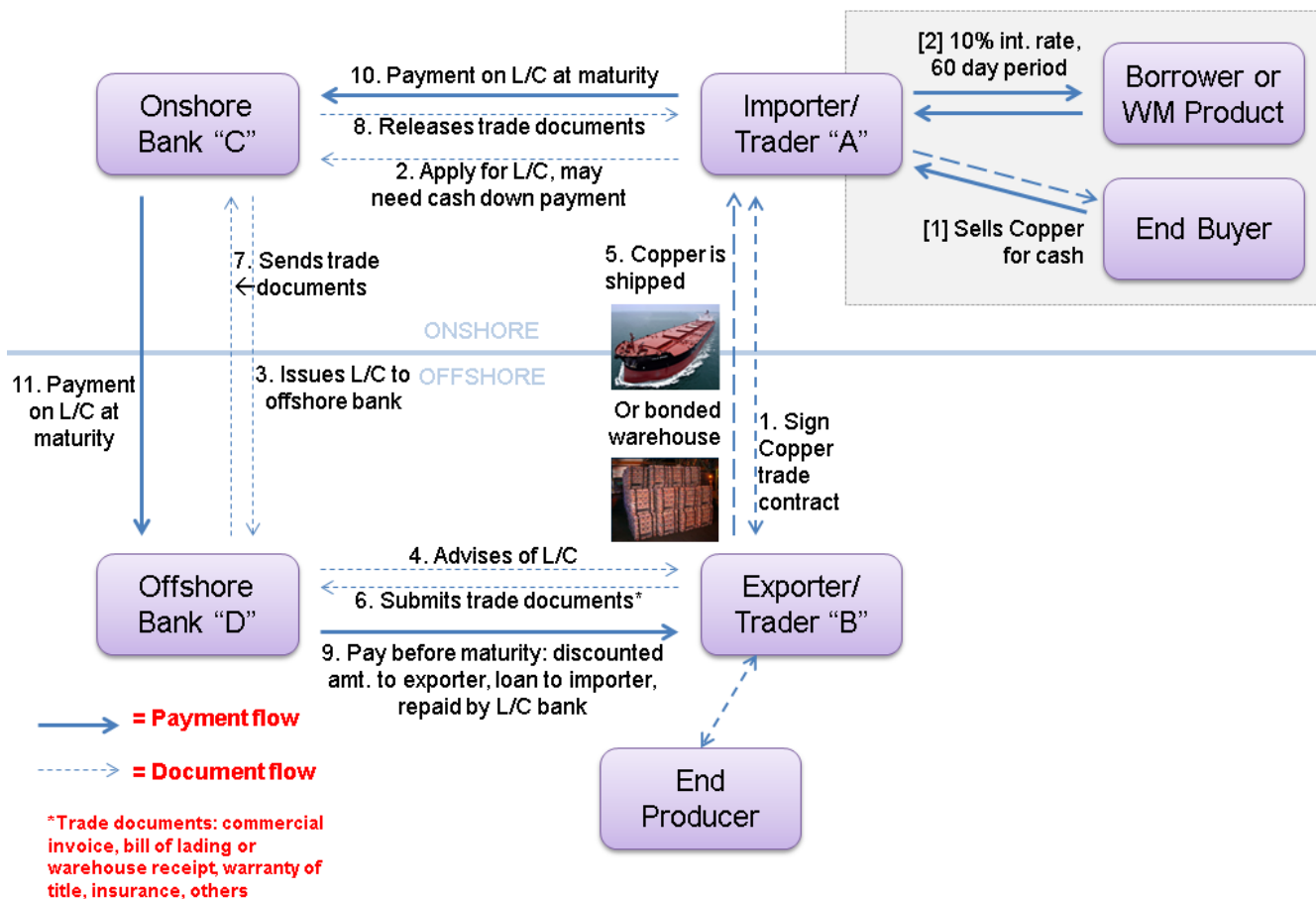
Source: Citi Research

One-step onshore “shadow” financing

If Importer A can sell the commodity for cash during the L/C period, a short term high yield loan can be made or wealth mgmt. product bought, making a spread.

In this case an onshore trader imports the commodity using an offshore L/C into mainland China. The commodity is then sold with time still remaining on the LC, and the money is used to earn higher domestic interest rates (through a loan or purchase of wealth mgmt. product). Before expiration of the L/C, the money is returned to the trader who settles the L/C.

Figure 17. Trade Finance Example With One-Step Onshore “Shadow” Financing



Additional notes in respect of one-step onshore “shadow” financing (shaded area)

[1] Importer/Trader A is able to sell on the ownership of the copper (via the documents) ahead of the maturity of the LC, and uses the cash to earn a higher return by making a loan to another borrower or by buying a wealth management (WM) product.

[2] Importer/Trader A receives the monies back just before the expiration of the L/C in order to make payment.

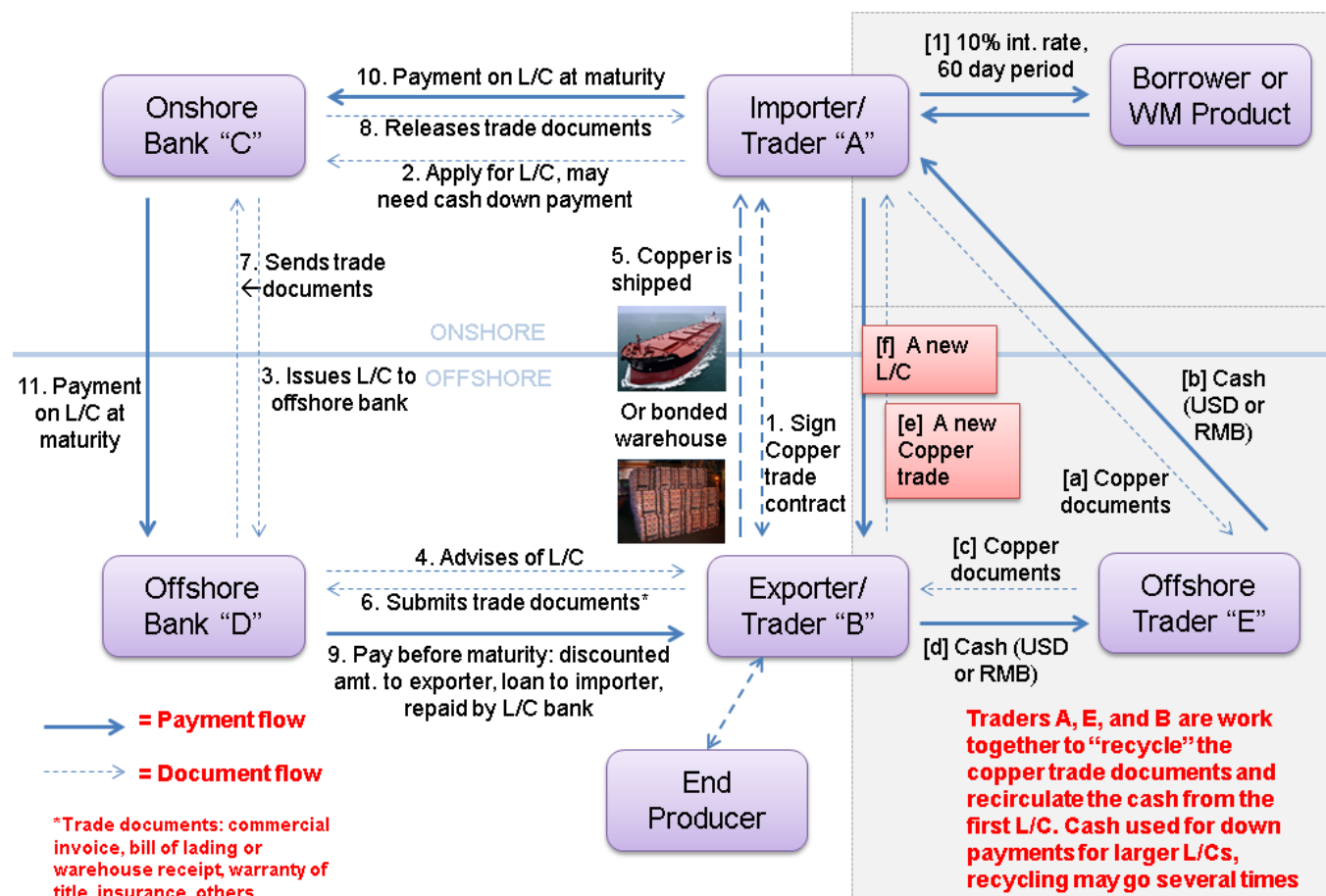
Source: Citi Research

Trade finance “recycling” to augment “shadow” financing

Versus an L/C maturity period of 90 days, the documents flow and payment by Offshore Bank D to Exporter/Trader B can be done over a few weeks. With the help of related parties, Importer A and Exporter B can “recycle” the documents and the cash, and apply for new L/Cs from another offshore bank.

In the “one-step” case, the cheap offshore L/C funding is used only once by the onshore importer/trader to on-lend at a higher rate in order to gain a financing spread on the monies. In a “recycling” scenario the onshore trader is able (with the cooperation of parties offshore) to effectively recycle the trade on the same commodities shipment a number of times via the flow of the trade documents, and thus more than one L/C can potentially be issued on the same trade transaction. This would augment the amount of offshore financing that the onshore importer/trader can access on which to make a spread through on-lending or buying wealth mgmt. products. The simplified low diagram is shown as below.

Figure 18. Trade Finance Example Including “Recycling” to Augment “Shadow” Financing



Additional Notes in respect of “recycling” to augment onshore “shadow” financing (shaded area)

[a] - [f]. Importer/Trader A works together with Offshore Traders B and (related party) Offshore Trader E to recycle the same copper trade documents in order to create further new copper transactions which can be used to acquire further LC financing (Step [f]) from other offshore banks. The number of times this can be done depends on the period it takes to circulate the documents. For example if the document process takes 1 month, over a 6 month L/C period there could be up to 4-5 recycling transactions.

Source: Citi Research

Profitability of commodity financing trade

Sizing-up commodity financing in China: We estimate US\$85bn in financing for major commodities in China, US\$71bn for inventory financing (materials traded in Chinese bonded warehouses/zones) and US\$14bn for import financing (one-time financing of imported material). Among the major commodities, copper is by far the largest component of the financing total at US\$38.4bn, followed by soybeans (US\$14.6bn) and iron ore (US\$13.5bn). (For more details, see the *Implications for Commodities* section at the end of this report.)

While commodity financing deals in China take a variety of forms, we examine the profitability of some of the most common in this section. In particular, Figure 19 illustrates the financing revenue and costs of typical LC based deals (excludes potential profit & loss from commodity-specific factors, such as changes in physical premiums).

'Round 0' in Figure 19 is a simple import trade ("one-step financing trade"), whereby a financier purchases a commodity with a low interest rate 90 day letter of credit (backed by a cash pledge), then sells the parcel and re-lends the money onshore at a higher interest rate for two months.

'Round 1' supposes that instead of lending the money obtained in the previous round, the financier uses this money as a cash pledge to obtain a larger letter of credit (or several smaller ones). This larger sum of money is used to buy a greater quantity of commodities, which is then sold and the money lent onwards. 'Round 2' is another iteration of the principle behind 'round 1', with the financier taking the LC granted in 'round 1' and using this as a cash pledge for an even larger LC.

Figure 19. Illustrative Financing Deal P&L

	Cash Pledge	LC Amount	Funds Raised	Interest Cost	Revenue
Round 0	20	100	80	0.62	1.60
Leverage			4		
Net Revenue					0.98
Return					4.9%
Annualized Return					21.1%
Round 1	100	500	480	3.10	8.01
Leverage			24		
Net Revenue					4.29
Return					21.5%
Annualized Return					117.6%
Round 2	500	2500	2480	15.48	40.03
Leverage			124		
Net Revenue					20.83
Return					104.2%
Annualized Return					1637.6%
	Borrowing Rate	Cash Pledge	Investment Return		
Assumptions	2.5%	20%	10%		

Source: Citi Research

In Figure 20, we examine the impact on profitability of differences in the borrowing-lending spread, in cash pledge requirements, and in the degree of leverage (round 0, 1, or 2). In general, we find such trade to be quite profitable¹ under a range of assumptions that we think fit market conditions (some traders enjoy even better terms than those listed in Figure 20).

We find returns generated from financing activity to be quite sensitive to the required cash pledge, particularly the more leveraged the trade. In other words, were LC cash pledge rates to be raised, traders rapidly trading inventory in bonded warehouses would see their profitability decline more significantly than those doing simple import financing.

However, the other side of its greater leverage is that inventory financing with high turnover is generally more profitable than simple import financing.

¹ As this analysis focuses purely on financing revenue and costs, it excludes a number of other costs, including logistical and administrative, but it also excludes other potential connected revenue streams, such as physical arbitrage and premium differentials. It should thus be seen as illustrative purely of the financing net revenue potential.

Figure 20. Illustrative Commodity Financing Revenue – LC Cash Pledge Requirements Have A Large Impact On Profitability

USD Borrowing Rate	RMB Investment Rate	Cash Pledge	Rd 0 Return	Rd 1 Return	Rd 2 Return	Rd 0 Annualized	Rd 1 Annualized	Rd 2 Annualized
2.5%	10%	20%	5%	21%	104%	21%	118%	1638%
2.5%	10%	30%	3%	9%	27%	14%	40%	164%
2.5%	10%	40%	2%	5%	10%	10%	20%	46%
3.0%	13%	20%	7%	29%	142%	29%	179%	3345%
3.0%	13%	30%	4%	12%	38%	19%	58%	263%
3.0%	13%	40%	3%	6%	14%	14%	28%	69%

Source: Citi Research

Regulatory Outlook

Efforts by the Chinese government to regulate commodity financing have been ongoing since 2011, mainly through SAFE but lately by banking regulators like the CBRC as well. However these efforts have been largely unsuccessful, in our view – although certain financing practices have been brought to an end, we believe the size and scope of commodity financing in China has continued to expand. We do not believe that additional regulatory scrutiny or window guidance is likely to limit commodities financing activity. *(For more details, see the Implications for Commodities section.)*

Implications for Equities

Singapore Banks

The China Trade Finance Debate: Rewards, Risks, Consequences

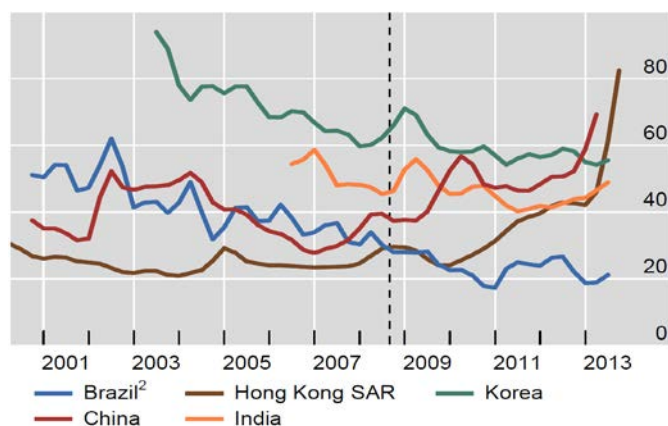
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Too big an opportunity to ignore, but there are risks

With growth more challenging in domestic Singapore/Asean, capturing China/intra-Asian trade/investment flows simply is too big an opportunity for Singapore banks to ignore. DBS has led its peers in this regard, yet markets have apparently failed to reward them. This section assesses the opportunities and risks in the China trade finance debate — **DBS is our top Singapore bank pick for its broad-based earnings model (not just China) and reasonable valuations.**

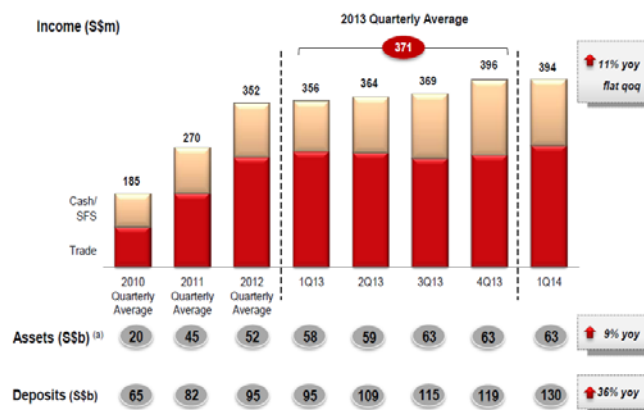
Please also see full report: [Singapore Banks - The China Trade Finance Debate: Rewards, Risks, Consequences](#)

Figure 21. Trade Finance Intensity¹ (Percent) — Surge in China/HK



¹ Ratio of trade finance over merchandise trade; assuming a 90-day maturity of trade finance stocks, except in India and Mexico, where maturities are known to be 6 and 12 months respectively, and in Brazil, where the information on the flow of new loans is used. Dashed line: Q3 2008. ² Trade finance data are break adjusted. Source: BIS, IMF, Citi Research

Figure 22. DBS — Trade Finance, Cash Mgmt. Strong Growth Since 2010



Assets and deposits are as at end of period. (a) Trade assets; includes bank exposures and loans of financial institutions (SFS)
Source: DBS, Citi Research

China trade finance provides both opportunities...

- **Growth in intra-Asian trade (and investment) is too big to ignore** — With domestic growth opportunities constrained, Singapore banks see the need, and indeed are well positioned, to capture growing Asian regional flows in both investment and trade, in which China is a major driver. Versus longer term investment loans, banks such as DBS view short tenure trade loans as lower risk, with significant cross sell fee opportunities in FX, treasury and even cash mgmt. as part of a broader GTS strategy.
- **Generating flows-based income is essential in a Basel 3 world** — As equity capital becomes increasingly expensive, banks likely will continue migrate to a more RWA-light growth model (trade loans typically carry a 20% risk weight) while cash mgmt. contributes to the growth of “sticky” funding. When US and global rates eventually normalize, widening of trade margins and leverage on low cost funding may be a material positive for banks’ NIMs and earnings.

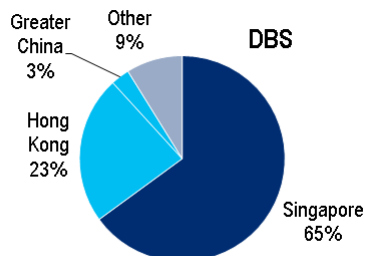
DBS is satisfied with the quality of its China & trade exposures

- **Risks of trade finance** — A Jan 2014 BIS study on global trade finance highlights the surge in China trade finance in the past 3 years (see Fig 1 above). The study also noted that loss rates on trade finance data during 2008-2011 — which included the Lehman crisis — was just 0.01%. But that crisis had another

.... and risks

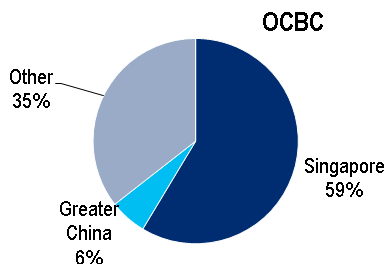
consequence: a USD liquidity crunch leading to a rapid withdrawal in trade loans, in turn driving a short lived, but sharp drop in global trade, hurting global growth.

Figure 23. DBS— HK/Gtr. China 26% of 2013 PBT



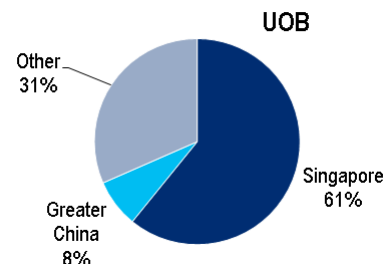
Source: Company, Citi Research

Figure 24. OCBC — Gtr. China 6% of 2013 PBT



Source: Company, Citi Research

Figure 25. UOB — Gtr. China 8% of 2013 PBT



Source: Company, Citi Research

- **China trade finance has been “carry-trade” driven which may prove unsustainable** — The attraction of borrowing in “cheap” USD at a rate lower than RMB deposit rates and (until recently) a steady trend of RMB appreciation vs. USD provides an arbitrage opportunity for China’s largest companies with access to offshore China trade finance. It is difficult to size the “carry trade” portion (versus genuine) trade finance but it should normalize in the future.
- **Offshore “hot money” and shadow banking** — Offshore trade finance funding is finding its way into (although it is only a small part of) China’s estd. US\$5tr “shadow banking” assets. Bears may even argue that rapid growth in foreign ccy. borrowing by China is little different from what Asean nations did in the early 1990’s, culminating in the 1998 Crisis. China is attempting to restructure its system to reduce shadow banking activities, and there will be fall out along the way, possible catalysts being normalization of US interest/lending rates, tighter regulations, or a collapse in China real estate.
- **Singapore banks are mindful of possible China related risks** — DBS has been admirably transparent in explaining trade finance procedures to investors, including checks to ensure they are financing genuine goods trade, dealing with established China SOEs/ large companies, plus backing from Big 4 Chinese banks. In April DBS added that they stress-tested their book for second round effects in China and they remain comfortable with their China exposures.

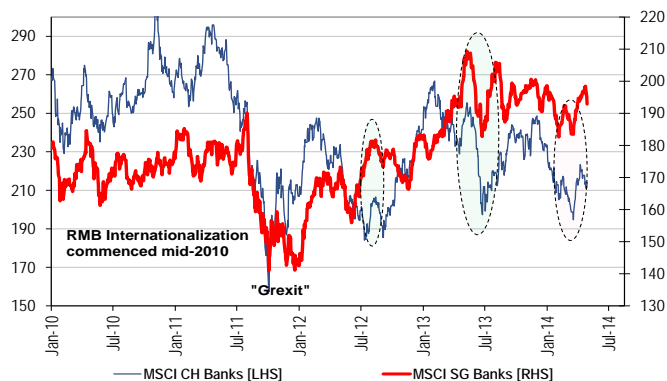
Strategy — balancing opportunities and risks

China banks and Singapore banks have seen contrasting fortunes since RMB internationalization came to the fore in 2010. Post 2008 GFC the Chinese banks index returned back to its all-time high, only to be cut short by Eurozone and “Grexit” fears around Sept-2011. Since then China banks’ fortunes appeared to have experienced regular ebbs and flows, likely driven by swings in China macro data and recurring concerns of a banking sector credit crunch. We note that during 2012 and 2013, Singapore banks’ relative behaviour versus China suggested that it was seen as a possible safe haven when China banks were in “mini-crisis” (notably July 2012 and again in July 2013).

But emerging China concerns in 1Q2014 (rising short term rates, RMB weakness) in contrast seemed to weigh the Singapore banks down, notably DBS. Investors’ concerns focused on rapid growth in exposure to China’s offshore trade finance as a reason for caution. At the stock level, DBS (largest China exposure versus peers)

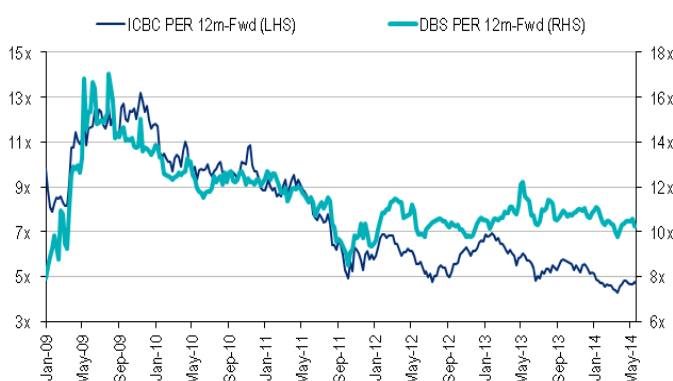
saw the biggest sell off, with the more Asean-focused UOB being the relative outperformer.

Figure 26. MSCI China Banks vs MSCI Singapore Banks — Post 2008 GFC Euphoria Cut Short by “Grexit”



Source: Factset, Citi Research

Figure 27. DBS Appears to Have Suffered PER De-rating Similar to the China Banks — 10x PER is Approx. Equal to 1x P/B support for DBS

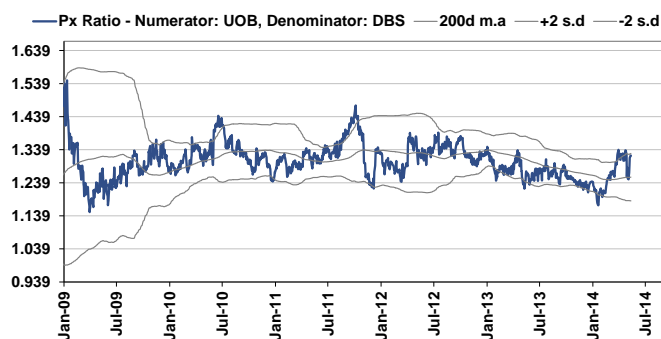


Source: Datastream, Citi Research

Singapore banks may not be fully rewarded for China earnings

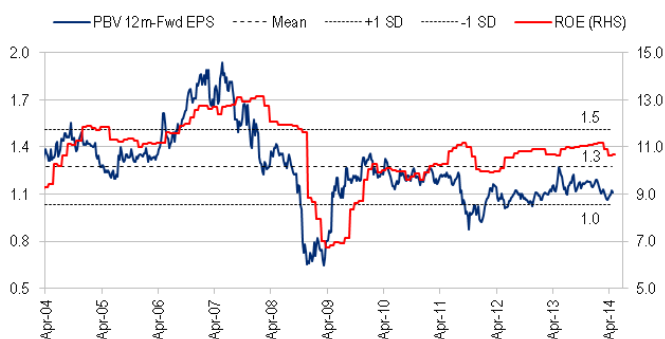
■ For now markets place a low PER multiple on Singapore's China earnings — Ironically, DBS reported one of the best results in its history for 1Q14 in large part thanks to China earnings. Yet for all the assurances given by DBS, investors appear skeptical, and this has manifested as DBS (and others with China exposure) being afforded a low PER multiple on China-related earnings — we notes that listed Chinese banks trade at 5-6x versus Singapore banks' typical valuation floor of 10x PER. Note that if we value 26% of DBS' profit (being the HK-China related portion of PBT) at 5x PER, it values the rest of DBS' earnings at its former-PER level of 12x. Even with further quarters of strong China-derived profits, investor perceptions may not be easily turned.

Figure 28. UOB-DBS Price Ratio — UOB Outperforms on China Fears



Source: Datastream, Citi Research

Figure 29. DBS 12M Fwd Consensus P/Book Cycle



Source: Datastream, Citi Research

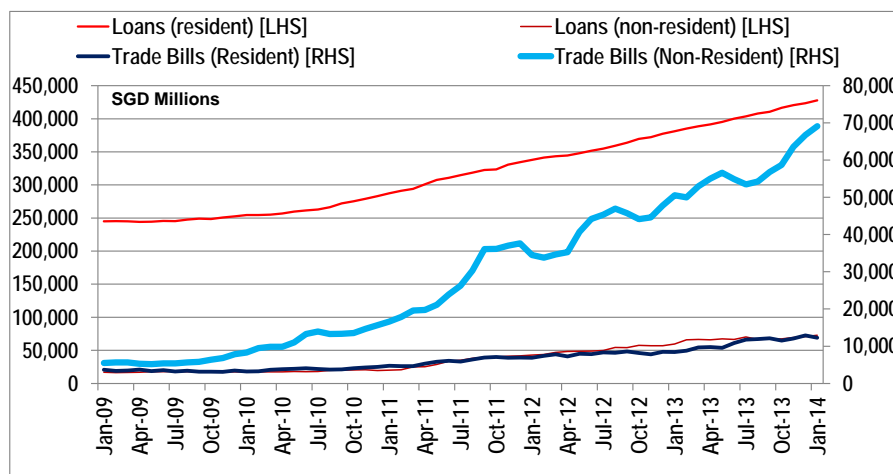
Figure 30. Forecast Summary & Valuations

Stock_Rating_RIC	Last Price	Tqp Price	ETR	Mkt Cap	Net Profit		EPS		EPS Chg		PER		NBV/S		P/BV		DPS		Yield		ROAE	
	(\$)	(\$)	(%)	(US\$m)	14E	15E	14E	15E	14E	15E	14E	15E	14E	15E	14E	15E	14E	15E	14E	15E	14E	15E
DBS, 1, DBSM.SI	16.84	19.00	17.0	33,008	3,862	4,452	1.57	1.81	10.9	15.2	10.7	9.3	14.82	15.83	1.14	1.06	0.70	0.80	4.2	4.8	11.0	11.9
UOB, 2, UOBH.SI	22.63	21.70	-0.7	28,787	2,962	3,292	1.86	2.07	2.0	11.1	12.2	10.9	16.45	17.69	1.38	1.28	0.78	0.85	3.4	3.8	11.8	12.2

Source: Citi Research (Price as of 20 May 2014)

Singapore bank exposures to China, trade and RMB

Figure 31. Offshore trade finance has seen aggressive growth at the Singapore system level



Source: MAS, Citi Research

Dec-2013: MAS system RMB-denominated loans RMB300bn, deposits RMB200bn.

DBS: Trade loans S\$50bn (S\$63bn including interbank assets). China loans S\$40bn of which S\$26bn was trade related. RMB-denominated S\$6bn.

UOB China loan exposure S\$4bn with less than S\$0.5bn in trade loans.

Singapore RMB loans continue to grow rapidly: In a March speech on RMB internationalization, Singapore central bank MAS noted that as of end-2013, “total RMB deposits stood at RMB 200 billion, a 70% increase over deposit levels in March last year. For the same period, RMB-denominated loans, mainly trade financing, grew by almost 25% to reach over RMB 300 billion. To put this figure into perspective, based on SWIFT data, Singapore accounted for about 60% of RMB trade finance outside China and Hong Kong”. Such material and rapid growth has put the Singapore banks under the spotlight — most notably DBS due its strong trade growth — given concerns of reported inappropriate practices linked to China offshore trade finance. But the MAS data should include all major (regional/global) banks operating out of Singapore, not just the 3 local banks, which we estimate probably accounted for less than half of the reported RMB300bn 2013 figure.

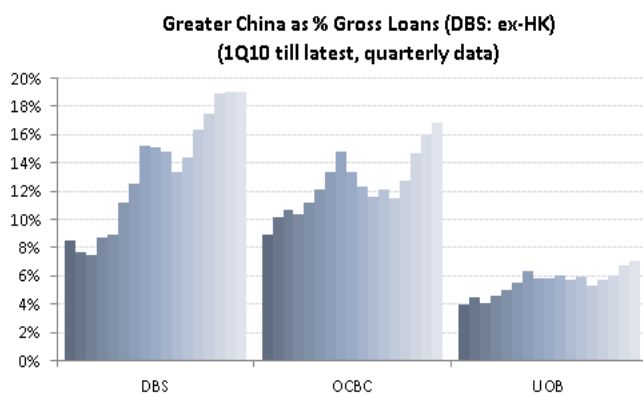
DBS’ China and RMB exposure: End-2013 DBS had about S\$18bn of total CNH/CNY loan exposures or 7% of group loans (2013: S\$252.2bn). From this, c.S\$12bn were trade loans or 25% of total trade loans S\$50.2bn (trade assets including interbank loans: S\$63bn). During 2013, total trade loans increased S\$10bn (2012: S\$39.3bn) of which roughly S\$7bn (70%) of the growth was RMB denominated. (Mar-2014 update: Total trade loans remained at S\$50bn and trade assets S\$63bn. China total loan exposure S\$40bn of which S\$26bn was trade loans (non-trade loans likely mostly DBS China). Within this RMB-denominated trade loans fell to S\$6bn from S\$12bn but the rising USD-denominated portion compensated). DBS only deals with a focused list of customers in China including national SOEs and large corporates based in 10 coastal cities of China – of the 1,000-strong target customer list, DBS has done business with about 400. Roughly half of the trade loans are also backed by letters of credit from China’s Big 4 banks. For RMB DBS onshore has a 60% LDR, and for offshore the RMB trade finance is match funded. DBS was one of the first banks to receive a banking licence in the Shanghai Free Trade Zone and completed its first trade finance deal in Jan 2014.

UOB’s China and RMB exposure: Per our discussions with the bank, UOB’s mainland China loan exposure was only about S\$3bn in 2013 (rising to S\$4bn in Mar-2014), with <S\$0.5bn China trade loans (the bulk of UOB’s trade exposures are in Asean and other non-China). Its onshore (UOB China) RMB LDR remains well within the <75% regulation. China related trade finance is primarily with large

corporates and typically backed by one of the big 4 banks. Overall Greater China loan exposure is c.7% of group loans, but this business is anchored out of Hong Kong (Mar-14: c.S\$9bn), where UOB lends to top tier Hong Kong corporates, plus a small portion of mainland China names operating in Hong Kong.

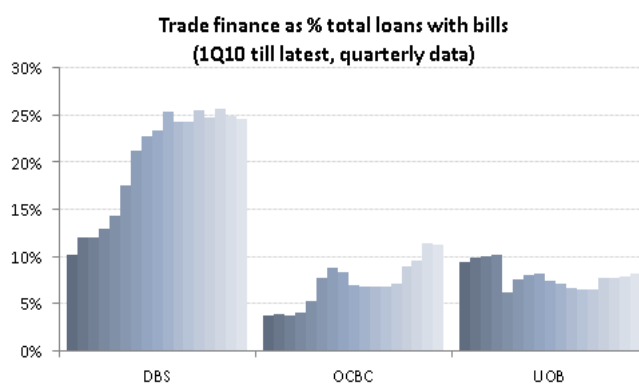
OCBC: Reported historic data from financial statements suggest that OCBC's Dec-13 trade loans reached S\$19.4bn (+96%yoy), comprising 11% of total loans. 2013 disclosures report that Greater China related loans reached S\$27bn (+56%yoy), or 16% of group loans. USD-denominated loans accounted for 27% of group loans. (Mar-14 update: trade loans S\$19.6bn, Greater China related S\$29.5bn, total group loans S\$175bn).

Figure 32. Singapore Banks' Greater China Loan Exposure



Note: DBS — Loans by geography are classified according to where the borrower is incorporated
OCBC — Loans by geography based on where the credit risks reside, which may be different from the borrower's country of residence or the booking location of the loans
UOB — loans by geography based on the location where the loans are booked
Source: Companies, Citi Research

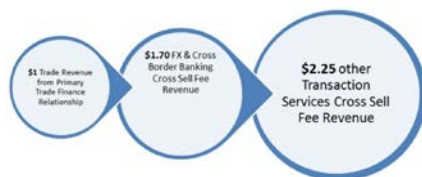
Figure 33. Singapore Banks Total Trade Loans Exposure



Note: DBS based on trade assets, which includes interbank (bank-backed loans where DBS does NOT have customer recourse). Pure trade loans include: bank-backed trade loans WITH customer recourse and non bank-backed trade loans some with and some without cash collateral. All trade loans are secured on the goods being shipped.
Source: Companies, Citi Research estimates for UOB

Generating flows-based income is essential in a Basel 3 world

Figure 34. Cross-sell Potential From TF



Source: East & Partners, Nov 2013

As equity capital becomes increasingly expensive in the post 2009 GFC era, banks likely will continue migrate to a more RWA-light growth model — which is exactly what trade finance offers (banks backed trade finance is likely just 20% risk-weight, possibly lower) — while cash mgmt. contributes to the growth of “sticky” funding that is an important feature of future Basel 3 rules on liquidity coverage and stable funding. Although currently the margins on trade finance are very thin, banks can earn a significant amount of additional fee income streams through cross sell activities. Additionally, when US/global interest rates eventually normalize, the possible widening of trade margins and the leverage on low cost funding may have a meaningful positive for the banks' NIMs and earnings.

Hong Kong Banks

Is Trade Financing a Risk or Opportunity?

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China related trade finance only 4.8% of total loans ...

... part of this is trade bills which are backed by a counterparty bank

HKMA is satisfied

HSB is our top pick

Trade growth may stop

- **We weigh opportunity over risk for HK banks** - Market could have over-estimated trade finance's volume and credit risk for domestic HK banks – However, we acknowledge that banks are still exposed to reputational, legal and regulatory risks if due diligence was insufficient in offering trade finance or trade bills. China-pass through demand offers opportunities for banks to benefit from scale, pricing power and fee/FX income. Near term regulatory risk mitigation with HKMA's "satisfactory" attitude on exposures.
- **Need to properly scope and understand trade finance** – Outstanding trade finance in Hong Kong was HK\$550bn (or US\$71bn). This accounted for 8.5% of sector total loans by end-2013; of this, only 4.8% points were Mainland-related and 3.7% points non-Mainland related. Hong Kong banks' trade finance represents client exposure to finance a specified trade with 3-6mth maturity. Trade finance exposures can be offered under clean, partial, or full guarantee. Customer deposits and counterparty bank (L/C) are common forms of guarantee. Primary recourse of trade finance goes to the borrowing customer. And in the case of a credit event, the absence of normal client payback could mean additional overheads for the lending bank to recourse via channels of guarantees.
- **Trade finance as contrasted with trade bills** – HKMA does not separately report the amount of outstanding sector trade bills, but our bottom-up analysis suggests that aggregate trade bill exposure from 10 major domestic banks totaled HK\$458bn (or US\$59bn). Different from trade finance, the primary recourse of trade bills goes to a counterparty bank instead of the borrowing customer. Banks are taking a counterparty bank risk by offering trade bills, but remain liable to conduct sufficient KYC and due diligence to ensure genuine trades are involved.
- **HKMA expressed satisfaction; two key implications** – HKMA stated on 14-April-2014 that it was "satisfied" with underwriting quality for HK banks' Mainland exposures; and financing was generally backed by "genuine economic activity". In our view, key regulatory implications are (i) more Mainland exposure data could be published in future to improve sector transparency, (ii) HKMA is unlikely to impose Mainland-specific policy; future regulations will likely remain principle-based, focus on credit, capital and liquidity risks and be applied in an industry-wide and non-geographically specified manner.
- **Stock pick** – Our top pick in Hong Kong is HSB (strong deposit franchise, unique ROE-rerating story on rate hike and IB disposal, strong track record of risk mgmt., and sharply lower volatility on trade finance volume in recent two years).

It's a risk because...

- **Risks of sustainability** – the trade growth may stop if on-shore vs off-shore interest rate gap diminishes; track record of trade finance volume was indeed volatile with growth pace heavily affected by the gap. This gap could diminish if lending rate in Hong Kong increases, or deposit rate onshore reduces.
- **Risks of trades being fictitious or artificially created among related companies** – China's export number look overstated in early 2013 when compared with HK reported data. Such invoice overstating may imply existence of document forgery, creation of fictitious trades. While HK banks could have received sufficient guarantee in financing this over-stated trade volume, banks are still exposed to legal risk if they have conducted insufficient KYC / due

diligence in granting new customer exposures. That said, HKMA had on 14-April-2014 commented that regulator are “satisfied” so far with their on-site examination of Hong Kong banks’ Mainland exposure.

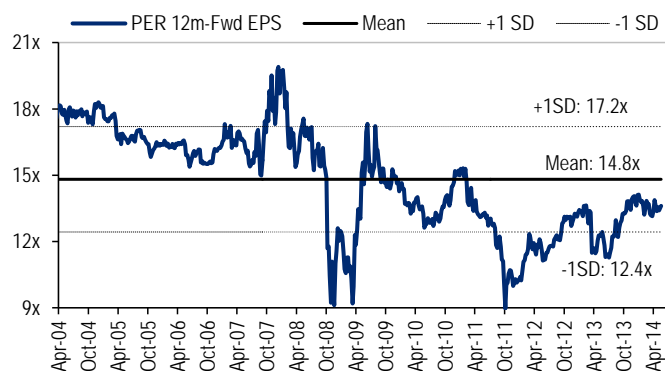
China macro risks

- **Risks associated with China macro** – if China macro slows, market will discount HK banks that have sizable China exposure. An extreme China hard-landing scenario may suggest credit events emerge from sizable or reputable China corporates; this would have negative asset quality cross-read to Hong Kong banks due to undeniably sizable exposure. Even if HK banks possess sufficient guarantees or collateral, exposures may still first be impaired (with the need for banks to provide credit charges) before executing recovery procedures.

Valuation risk

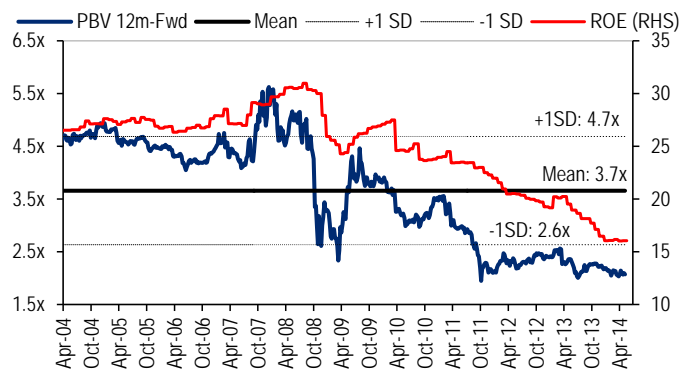
- **Valuation risk** – like the Singapore banks, the market may not fully reward HK banks’ China earnings given the concerns despite assurances by bank managements. We could see this in a reverse manner when HSB arguably saw a PER re-rating after it reclassified Industrial Bank from an associate to a financial investment in 2013. As an associate company, Industrial Bank contributed 25% of HSB’s 2012 earnings.

Figure 35. Hang Seng Bank 12-month Forward P/E



Source: DataStream, Citi Research

Figure 36. Hang Seng Bank 12-month Forward P/B



Source: DataStream, Citi Research

It’s an opportunity because...

Loan growth and pricing power

- **Upside from loan demand and pricing power** – loan demand arises as a new growth driver, and such a demand increases the loan pricing power of banks. Demand could arise from Mainland China in the form of trade or, increasingly, in non-trade financing. We also believe that HK banks are traditionally not strong at offering leveraged commodity trade financing (either for international / for China related trades).

Partly bank guaranteed

- **Better-than-average asset quality due to counterparty bank guarantee** – asset quality strong and benefited from a common use of counterparty bank guarantee (according to HKMA figures end-2013, Mainland exposures NPL ratio was 0.29% by end-2013, notably lower than non-Mainland loans NPL ratio of 0.61%).

HK as a financial center

- **Strategic strength that is unique vs peer financial centers** – the development matches with HK banks’ competitive edge for having a market-oriented banking system whereas strong financial and cultural connect with Mainland China; Hong Kong banks have notable onshore operating history & experience in China (including during the period of GFCs).

Corporate relationships

- **Upside for future banking services other than trade-loans** – Trade finance facilitates the establishment and development China-related corporate relationship; once this relationship is established, bank can also benefit as China corp increasingly invest overseas. The banking relationship offer upside on cash management, transaction banking, FX and non-trade-related loans.

Opportunities outweigh risks for HK banks

We believe opportunities outweigh risks for Hong Kong banks while acknowledging the regulatory and China macro risks. In establishing this view, we considered HKMA's explicit stance that based on its onsite examination, underwriting quality remained satisfactory. Hong Kong banks' principle of operation is for profit and they receive minimal government intervention in assessing and approving each individual loan. And if sustainable profit generation is the ultimate motive, banks would have been using their established and existing credit risk assessment procedures (conducted by the same team of HK/China credit officers) in approving the related loans. We also believe the rule of law remains effective for regulatory oversight. Any credit officers knowingly involved in fraudulent financing are liable to the legal consequences. Thus far, based on 2010-2013, there have not been any notable legal cases related to trade financing.

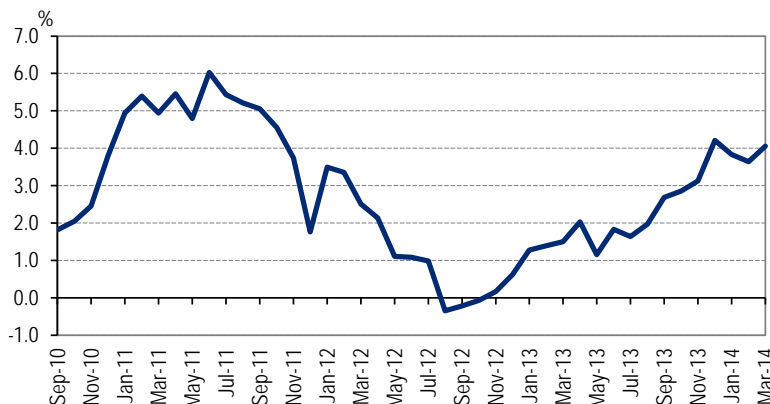
The upside of having a sharp increase of trade finance and cross-border financing thus reveals the opportunity for the sector to grow in scale, in pricing power, and in sophistication for enhanced capacity. Many of these are opportunities that banks in other geographies would like to address; but the relative strength of HK-China financial/trade collaboration and its role as the major offshore RMB center contributed to this growth.

Is trade finance sustainable? Need gauge of on-offshore rate difference

SHIBOR-HKD funding cost gap as an indicator

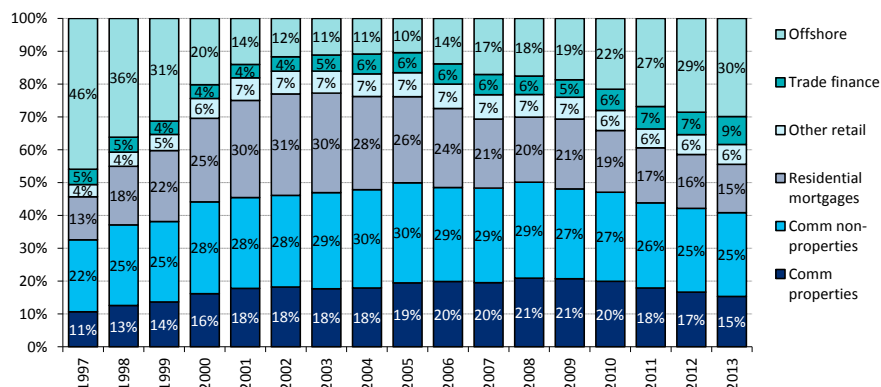
We believe the two best benchmarks to watch are: HKD composite funding costs and SHIBOR. We believe HKD composite funding costs is an effective gauge of average sector HKD funding, and the costs shall be similar to that of USD due to linked exchange rate. The use of HKD composite funding cost benchmark is preferred against the use of LIBOR or HIBOR because the interbank rates may not properly capture the premium applied on liquidity and counterparty risks.

Figure 37. SHIBOR and HKD composite funding costs gap (after hedge)



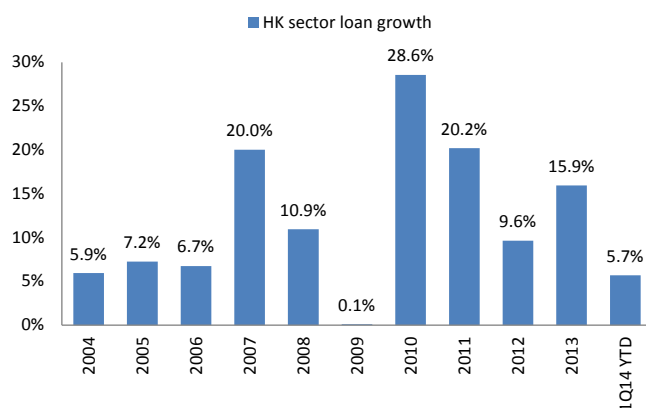
Note: Calculated as 3-mth short term SHIBOR rate obtained from CEIC minus HKD composite interest rate from HKMA minus CNH hedging costs from Bloomberg
Source: Bloomberg, CEIC, HKMA, Citi Research

Figure 38. Hong Kong Sector Loan Mix – Trade Finance as 8.5% Sector Total end-2013



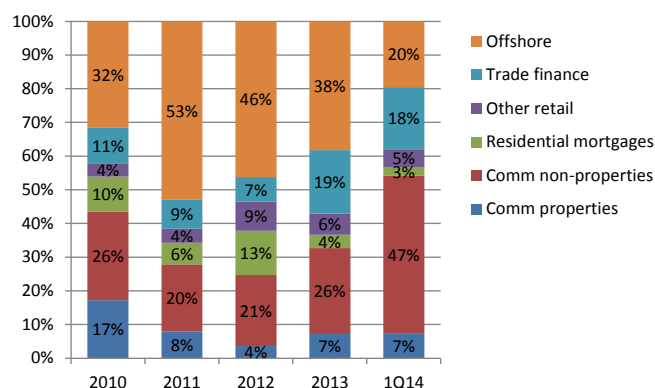
Source: Citi Research, HKMA

Figure 39. HK Sector Loan Growth yoy



Source: Citi Research, HKMA

Figure 40. HK Sector – Segment Increase as % Total Loan Increase



Source: Citi Research, HKMA

What is Hong Kong's trade finance & trade bills size when compared with China?

HK is small vs China

Every 1% of China loans migrations can double Hong Kong's trade finance -

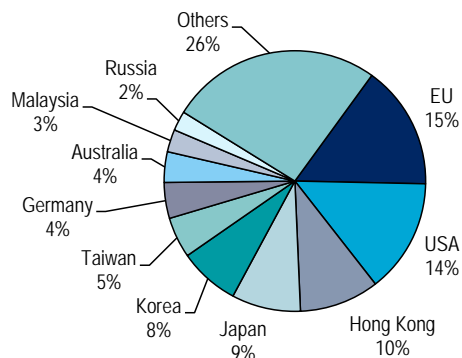
Hong Kong sector total trade finance was HK\$618bn (Jan 2014), about 9.1% of HK sector total loans. Including our estimated amount of outstanding trade bills of about HK\$500bn, the total of cHK\$1.1tn is equivalent to RMB880bn, 7% of China's total L/C and bank acceptances, or 1.1% of China total loans. In another words, if China has another 1% worth of total loans that could originally migrate its location of financing from onshore to offshore as trade finance/trade bills, then HK's trade finance number could double from the current level.

Deep relations with China trade & financing

Relationships between HK banks and major listed China corporates are long lasting. As a cross sectional read, Hong Kong equity market had 40% of total market cap coming from China H-share or Red chip companies by end-2013; the proportional market cap was only 20% in 1999 and increased to 60% in c2006-07 before retracing back to the latest c40%. Listed market cap of China corps by end-2013 in Hong Kong was HK\$9.7tn, which is equivalent to c.1.5x of Hong Kong total sector loans.

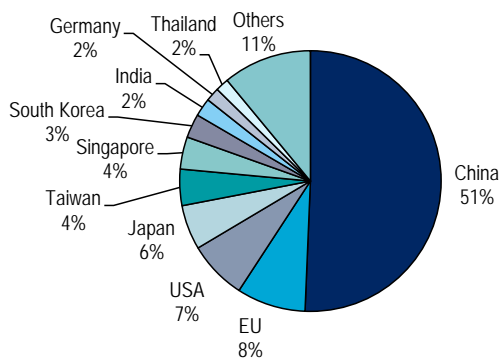
As a trading partner, Hong Kong accounted for 10% of China total trades in 2013 (being the third largest trading partner after the US and Japan). As a legacy major trading partner and a major financial center that could provide lower cost of financing, it is natural that incremental cross-border financing be addressed in Hong Kong, in lieu of onshore financing via a Mainland China bank.

Figure 41. China's Trading Partners (12mth till 1Q14)



Source: Citi Research, CEIC

Figure 42. HK's Trading Partners (12mth till 1Q14)



Source: Citi Research

Typically in retail banking and corporate banking, 80:20 rules apply. That the c.20% of largest and most important client are accountable for c.80% of total revenue and profit for banks. And if this 80:20 rule applies in cross-border financing, then most of those exposures from HK banks are skewed towards large major China corps, some/most of those can be HK/China-listed corporate.

Three benefits of trade finance

Trade financing's benefit #1: lower credit risk – For domestic Hong Kong banks, trade finance represent client exposure to finance a specified trade transaction; exposure to this structure of loans is lower than term loans or project loans as trade finance is of shorter tenure and clearer specified usage. Trade finance exposures can be offered under clean, partial guarantee, or full guarantee basis. Customer deposits and counterparty bank letter of credits (L/C) are common forms of guarantee. We see the credit risks of trade finance being less than that other corporate loan exposure; however, despite the use of guarantee arrangements, primary recourse still goes to a borrowing customer. And in the case of a credit event, the absence of normal client payback could mean additional overheads for the lending bank to recourse via channels of guarantees.

Trade financing's benefit #2: shorter loan re-pricing cycle – we perceive that a less commonly mentioned benefit of offering trade finance exposure lies in the shortened maturity of exposure. Trade finance is typically of 3-6mth maturity; and this also suggest that if liquidity stress arises, reversal and release of locked-up liquidity can be replenished relatively quickly via expiration of trade finance. The short maturity also means that the loan re-pricing cycle will be shortened, which would be favorable in a rising rate cycle.

Trade financing's benefit #3: lower capital consumption – Under IRB-approach for credit risk assessment, probability of default (PD) of trade finance is typically lower than for working capital loans/project loans/term loan due to shorter tenure and stronger historical performing record. In addition, loss given default (LGD) of trade finance could be mitigated by the use of guarantee; however, it's important to note that only banks operating with Advanced IRB (AIRB) can benefit from LGD reduction. AIRB banks apply the internal-model generated PD and LGD to calculate risk weight, but Foundation IRB (FIRB) banks only apply internal-model generated PD with a standardized LGD scorecard for trade finances. In another words, use of guarantee does not benefit LGD for FIRB banks.

Three risks

Risks #1 – dispute of counterparty bank guarantee – contractual terms, trade bills can be guaranteed by a counterparty bank's standby L/C or client deposits outside of Hong Kong. These exposures are of low credit risk by nature; but in the case that client fraud is involved, the bank that provided such guarantee may dispute and putting overheads for banks to recourse from the guarantee. Rule of law and recovery practices could also be less efficient in China as compared with Hong Kong.

Risks #2 – reputational, legal and regulatory risks – Hong Kong banks could face regulatory risk if due diligence and know-your-customer requirements were not properly exercised to validate that a financed trade was genuine in nature. Regulators stepped up their effort to scrutinize banks trade financing activities since 2011 (and also with added regulations in Apr-2013 and Nov-2013), however, the differing statistical difference of China and Hong Kong trade data remain exists in a less prominent manner; risks for over-invoicing and over-financing remain exists.

Risks #3 - sustainability of demand – Both real and fake trades will be affected if onshore/offshore interest rate gap narrows. Specific for fake trades, regulatory risk is higher and tightening could mean sudden stop of the flow. As a near term mitigation, the incremental control of China's shadow banking system may put onshore credit supply towards a tightening direction and sustain a noticeable onshore/offshore borrowing rate gap. For the longer term, we expect the rate gap to narrow as China gradually liberalize its rates environment and capital accounts.

Regulatory outlook for China related trade finance

Following HKMA's explicit commentary on Hong Kong banks Mainland exposure, we see two key implications:

Unlikely for China specific regulations by HKMA

(i) Increased information disclosure regarding Mainland China activities.

Currently, HKMA does not offer a similar level of detail in a recurrent manner. But we see rising likelihood that incremental colors will be distributed going forward.

(ii) Unlikely for Mainland-specific regulation to be imposed near term. Expect absence of Mainland-targeted policy and instead future regulations will likely be applied in a principle bases with a focus on credit risk capital and liquidity.

Hong Kong banks' Mainland-related exposures

In this section, we present an additional analysis on Hong Kong banks' Mainland-related exposures related to (i) Mainland-related loans, (ii) Mainland-related trade finance, and (iii) Mainland-related interbank exposures with the aim to more precisely scope the influence of trade finance. Our conclusion is that the volume impact on Hong Kong bank's trade finance look exaggerated by market; in addition, trade finance position vary noticeably with CCB Asia, ICBC Asia, DBS HK, HSBC HK having the highest trade finance and trade bills loan mix, whereas domestic-focused HK banks like HSB, WLB, DSBG have a lower mix in trade finance.

Mainland-related loans

Hong Kong banking sector experienced sharp loan growth during 2010-2013 with aggregated loan growth reached 97% in the four year time. Loans for use outside Hong Kong and trade finance are key growth drivers; and among these Mainland-related exposures accounted for a majority. According to HKMA, the classified loan ratio of the Hong Kong banking sector's Mainland-related loan was 0.29% by end-2013, lower than that of the ratio for sector's total loans of 0.48%.

China related loans at 40% of sector
loans, China trade finance at 4.8%

Non-private enterprises account for the
largest segment of China related loans

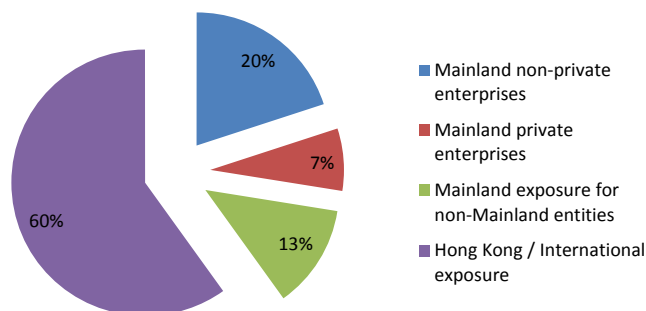
Figure 43. Hong Kong Sector - Mainland-related Loans (2013)

Mainland-related loans by different types of borrowers at end-Dec 2013 (Note)	HK\$ bn
Mainland non-private enterprises	1,290
Mainland private enterprises	488
Non-Mainland entities	811
Total Mainland-related loans*	2,589
of which Mainland-related trade finance loans	313
Total Hong Kong sector loans	6,457
<i>Mainland-related as % sector total</i>	<i>40.1%</i>
<i>Mainland-related trade finance loans as % sector total</i>	<i>4.8%</i>

Source: Citi Research, HKMA

* Breakdown of Mainland-related loans by borrower types includes trade finance loans of HK\$313 billion.

Figure 44. Hong Kong Sector - Mainland-related Loans as % Total Loans (2013)

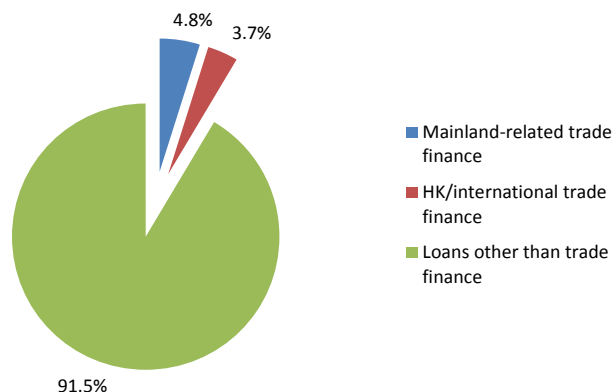


Source: Citi Research, HKMA *of the Mainland-related exposures c4.8% were trade finance loans

Mainland-related trade finance

Trade finance accounted for 8.5% of sector total loans, of which Mainland-related trade finance was 4.8% and HK/international trade finance was 3.7%. We believe the scale of exposure is lower than what the market commonly perceives. The difference between market perception and factual sector data could be rooted to larger trade finance importance for regional/global banks vs domestic Hong Kong banks. Domestic Hong Kong banks typically are not as strong in trade financing as compared with global major banks. While domestic Hong Kong banks could finance commodity purchasing, the capability to finance leveraged commodities is out of their expertise, based on our channel checks.

Figure 45. Hong Kong Sector – Mainland-related Trade Finance as % Total Loans (2013)



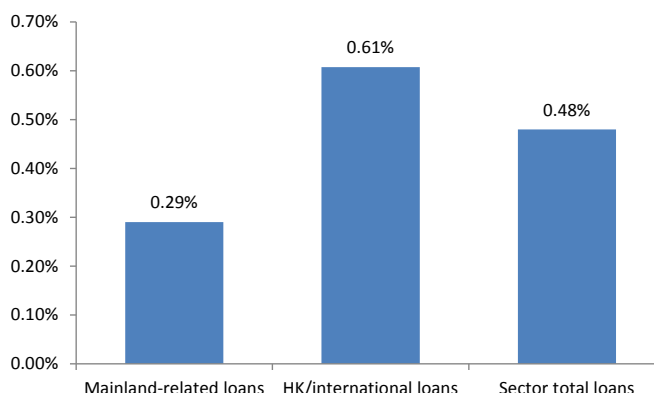
Source: Citi Research, HKMA

Mainland-related loans asset quality

Mainland-related loans (including trade finance) reported a lower-than-average classified loans ratio of 0.29%. This is compared with 0.61% of classified loans ratio for non-Mainland-related loans. We attribute this largely to the absence of a Mainland-focused macro downturn, the presence of guarantee, and the higher level of vigilance for HK banks when offering loans to Mainland-related entities (e.g. LTV for real estate backed corporate loans are typically lower if the pledged properties are in Mainland).

NPL ratio for China related loans is lower than HK/international

Figure 46. Hong Kong Sector – Classified Loans Ratio for Mainland-related Loans (2013)



Source: Citi Research, HKMA

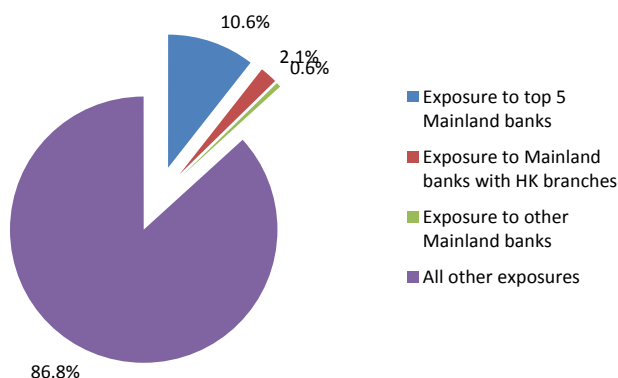
Mainland-related interbank exposures

While the figures in previous question illustrated loans and trade finance exposure, Hong Kong banks also have bank-to-bank exposures. Such exposures included PBOC placement, funding to HK bank's Mainland subsidiaries, claims on Mainland banks letter of credits, and debt securities issued by Mainland banks.

By end-2013, Hong Kong banks exposure to Mainland banks totaled to HK\$2,582bn, among which c.80% (HK\$2,060bn) were claims on the top 5 Mainland banks. The remaining 20% (HK\$521bn) are on other Mainland banks, the majority of which (HK\$410 billion) are exposures to banks which maintain branches in Hong Kong.

Vast majority of China interbank exposures are to top 5 Chinese banks

Figure 47. Hong Kong Sector – Exposure to Mainland Banks as % Sector Assets (2013)



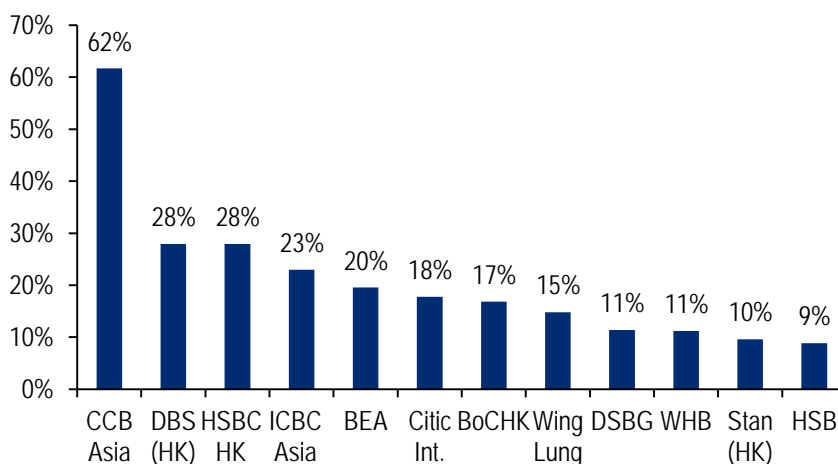
Source: Citi Research, HKMA

HSB has the lowest proportional exposure in trade finance

Trade finance position vary noticeably with CCB Asia, ICBC Asia, DBS HK, HSBC HK have a relatively high trade finance and trade bills loan mix, whereas domestic-focused HK banks like HSB, WLB, DSBG have a lower mix in trade finance.

CCB Asia has the highest exposure, HSB the lowest

Figure 48. Trade Finance & Trade Bills as % Total Loans* (2013)



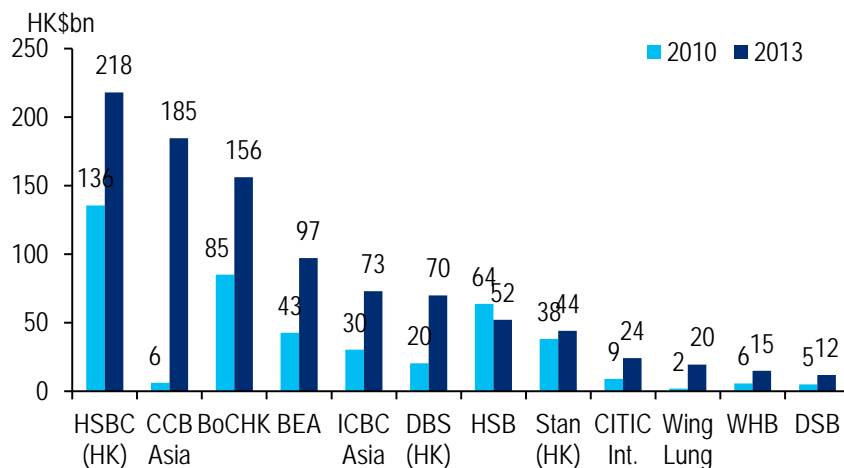
Source: Citi Research, Companies *Total loans adjusted to include trade bills

Increment of trade finance

By contrasting 2013 vs 2010 trade finance and trade bills volume outstanding, China banks HK subsidiary look to have grown noticeably faster than domestic HK banks in trade exposure. For many of the banks, trade finance and trade bills outstanding grew more than 100% during the years. The few banks that grew less than 100% during the period were HSBC HK, Stan HK, BoCHK and HSB (ie the four latest overall market share player in the sector). HSB in particular, recorded net decline in outstanding trade finance.

HSB's trade finance balance declined

Figure 49. HK banks – trade finance & trade bills outstanding (2013 vs 2010)



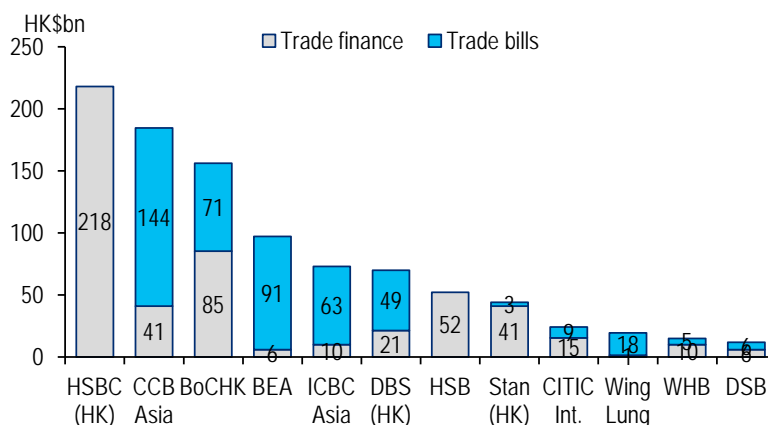
Source: Citi Research, Companies

Mix of trade finance and trade bills

With the exception that HSBC HK and HSB do not separately report trade bills; all other HK banks provide trade finance and trade bills exposure. This is to note that China banks HK-subsidaries typically have higher trade bills exposures. We believe this may relate to differentiated risk appetite and internal limit set in offering Mainland bank interbank exposure. As a China banks HK subsidiary, the internal limit to parent Mainland bank could be noticeably larger than a non-China associated bank.

China banks' HK subsidiaries have higher trade bills exposures

Figure 50. HK Banks – Trade Finance & Trade Bills Mix (2013)



Source: Citi Research, Companies

Regulatory response to trade and non-trade loan growth

HKMA announced in late Oct-2013 a stable funding requirements specifically applied to banks with fast loan growth and high loan-to-deposit ratios, a countercyclical move in regulating banks' loan growth and funding mix.

In this measure, HKMA require banks with fast loan growth (i.e. annualized to 20% or above) to meet additional stable funding ratio (Figure 51). Expressed in a formula, the stable funding to be obtained is calculated by:

$$\text{Stable funding to be obtained} = (\text{Total loans} - \text{total customer deposits} \times 70\%) \times \text{SFR} - \text{available stable funding}$$

Stable funding is defined to include long-term interbank funding/debt instruments or long-term parent group funding.

stable funding ratio introduced to limit loan growth

Figure 51. HKMA's Matrix For Stable Funding Ratio Requirement

Annualized loan growth	Stable funding ratio (SFR)
<20%	0%
20-30%	40%
30-40%	60%
40-50%	80%
>50%	100%

Source: Citi Research

The regulatory implications are twofold, in our view: (i) rival competition may abate from foreign/Mainland China banks' HK subsidiaries with limited deposit franchises – these banks were growing their balance sheets relatively faster than the domestic HK banks peers; (ii) overall customer deposit competition may edge up IF external liquidity inflow slows.

HKMA believes credit risks are properly managed

HKMA's stance towards Mainland-exposure

Based on the outcome of HKMA's on-site examinations and off-site reviews, HKMA believes the credit risks of the banking sector in Hong Kong are properly managed.

In particular, the HKMA commented in April 2014 that it was "satisfied that Mainland-related lending is generally supported by genuine economic activities". The HKMA added that a portion of Mainland-related lending was for use outside Mainland and therefore does not even involve funds flowing into the Mainland. Some of the Mainland-related exposures are a natural result of healthy market development, including the development of RMB offshore market in Hong Kong.

The HKMA believed that Hong Kong is playing a unique role of financial intermediation in the region and it is natural that banks in Hong Kong are more engaged in Mainland-related lending. Moreover, as Mainland corporations expand their operations overseas, banks in Hong Kong are in a good position to support the funding needs of these corporations.

Investment conclusion

As a sector view, we believe HK domestic banks trade finance volume impact and credit risks were exaggerated by the market. Albeit regulatory, and legal risks may exist if "fake" trades remain existent and if individual bank's due diligent process wasn't sufficient. But risk looks mitigated by recent HKMA's "satisfactory" attitude on overall Mainland-related loans offering.

Reiterate HSB as top pick

From an individual stock pick perspective, we reiterate HSB as the top pick among Hong Kong domestic banks. HSB showed the least growth in trade finance within the sector. Despite HSB also had trade finance growth relatively sharply in 2009-2010; growth trend turned subdued in 2011-13. We also prefer HSB's unique ROE-rerating story via disposal of IB and benefit on future rate hike with its strongest-in-peers deposit franchise.

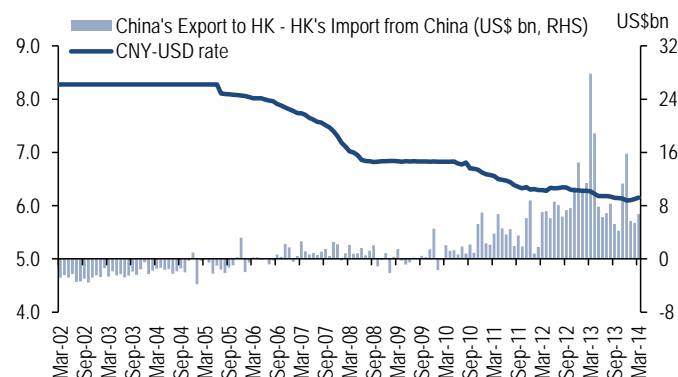
China Banks

Shadow Banking, Currency Mismatch

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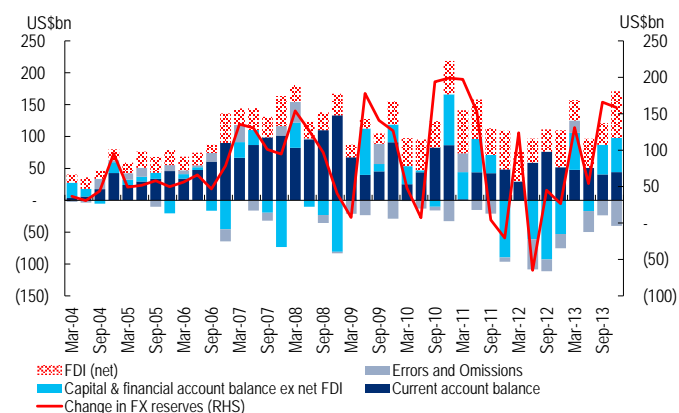
Commodities trade finance has been one of the channels for hot money inflows into China. Two channels for hot money can be quantified using macro data: the over-invoicing of exports by comparing the gap between China export figures to HK and HK import figures from China as shown in Figure 52 (we believe over-invoicing mainly takes place in China-HK exports), and through the capital account. We call the latter non-FDI capital inflows, shown as the light blue portion in Figure 53.

Figure 52. Cumulative China-HK Exports Over-Invoicing of US\$309bn Since 2010



Source: CEIC, Citi Research

Figure 53. China Balance of Payments – US\$393bn of Gross Non-FDI Capital Inflows since 2010.



Source: CEIC, Wind, Citi Research

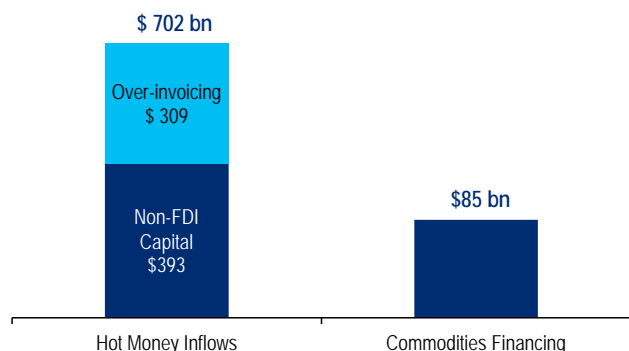
Gross hot money inflows could be about US\$700bn since 2010 ...

Working with our economists, we estimate that since 2010, aggregate gross hot money inflows from over-invoicing amounted to US\$309bn and gross non-FDI capital inflows were US\$393bn – this figure excludes a significant outflow of US\$208bn in 2012 which was likely triggered by the lack of RMB appreciation / slight depreciation in the first nine months of the year. We caution that these are crude estimates and this does not represent the stock of hot money in the system because this only accounts for inflows but not outflows which likely take place through different channels. Combined, these two figures give a crude estimate of gross hot money inflows into China of about US\$700bn since the beginning of 2010.

... and commodity trade finance could be responsible for some 10-15% of this

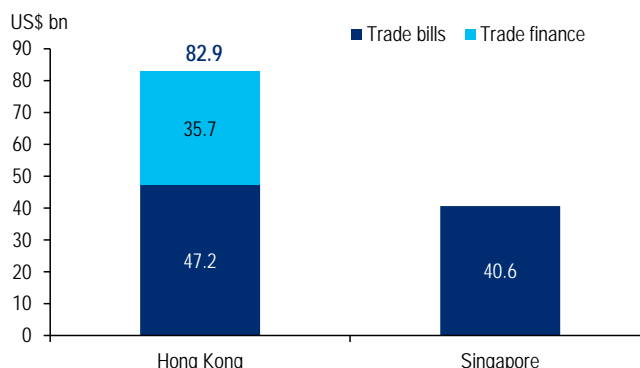
Comparing this figure with our US\$85bn estimate of the size of China's commodity trade finance activity (those we believe are purely conducted for financial reasons), commodity trade finance could be responsible for bringing 10-15% of hot money inflow in recent years (Figure 54); this seems to account for a meaningful proportion of the trade finance growth in HK and Singapore in recent years (when compared with Figure 55).

Figure 54. Estimated Gross Hot Money Inflows into China Since 2010 vs Estimated Size of Commodities Financing Activities



Source: Citi Research

Figure 55. Growth in Hong Kong, Singapore Trade Finance (2010-13)



Source: Citi Research

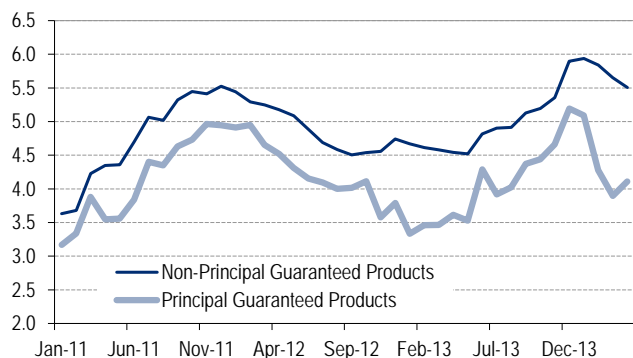
Carry-trade likely involves investing the cheap offshore funding into higher yielding investment products onshore

Funding Shadow Banking

The borrowing of cheap credit in HK and Singapore through commodity financing and repatriating and investing the proceeds into higher yielding investments in China is effectively helping to fund shadow banking activities in China. With the exception of structured deposits and principal-guaranteed bank-issued WMPs, which have lower returns of around 4%, most investment products are quasi-securitizations which either invest in one project or loan (eg. trust products which currently yield about 9%) or invest in a pool of loans and assets (eg. bank WMPs which currently yield about 5.5%). Through intermediaries and structures such as entrusted lending, the funds could be on-lent at yields of up to 20-30% to needy corporates. Needless to say, there could be many variations and possibilities. Anecdotal evidence suggests that the biggest borrowers from shadow banking channels are usually LGFVs and property developers.

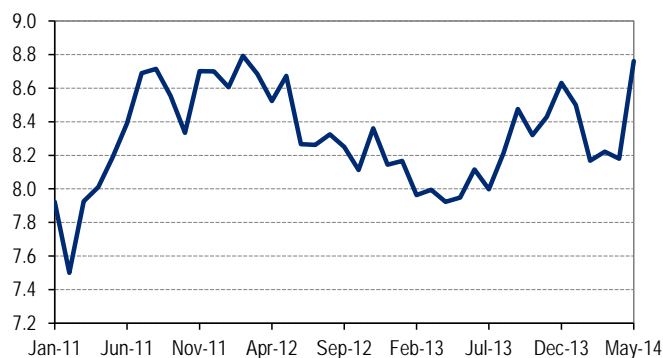
The risk, of course, is that credit problems among property developers and in the shadow banking system would flow-back and impact commodities trade financing. This is key to watch and property sales in China have been slowing in recent months ([click for our property analyst's report](#)) and latest regulations on banks' interbank business will add pressure on real estate developers (more the mid/smaller sized ones) and LGFVs ([click for our report](#)). Our recent trip to China shows that property market weakness is already leading to classic problems such as credit tightening, risk aversion, shadow banking refinancing ([click for report](#)).

Figure 56. China Yields on 3-6month WMPs (%)



Source: Wind, Citi Research

Figure 57. China Trust Product Yields (%)

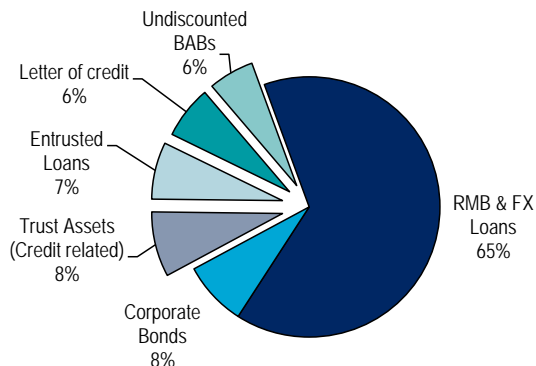


Source: Citi Research

But the amount looks small vs US\$5trn size of China's shadow banking system

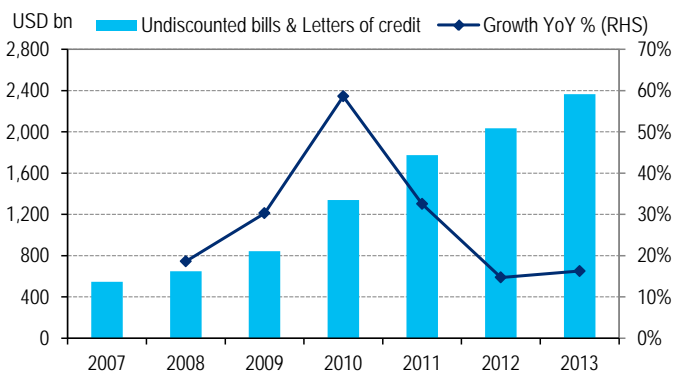
However, with about US\$2.4trn of outstanding LCs and bank acceptances outstanding in China's banking system and in total about US\$5trn in shadow banking assets (defined as trust assets, letters of credit, undiscounted bank acceptances and entrusted loans), offshore commodity trade finance (estimated US\$85bn in size) appears to be only a fairly small contributor to China's shadow banking system.

Figure 58. China Total System Credit Composition (2013: Rmb118trn)



Source: PBOC, Wind, China Trust Association, Citi Research

Figure 59. China's Outstanding Letter of Credit, Bank Acceptances



Source: CEIC, Wind, Citi Research

Adding to Corporate Currency Mismatch

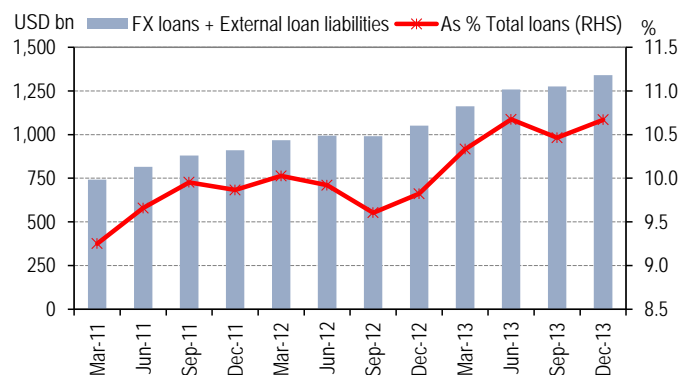
Currency hedging has not been common

Although the contribution of commodity trade financing flows to China's shadow banking is not that large in the grand scheme, this does make China's financial system more vulnerable to a pullback in foreign banks' credit appetite and the RMB exchange rate as the borrowing of cheap credit offshore in HK/SG is adding to the currency mismatch on the balance sheets of Chinese companies. In our discussions with industry practitioners, currency hedging was usually not used in the past especially when the RMB was appreciating which provided an extra kicker to the returns. After the recent round of RMB depreciation, some traders have begun to hedge their currency exposure, but most still do not hedge.

**Estimate 11% of corporate loans
denominated in foreign currencies**

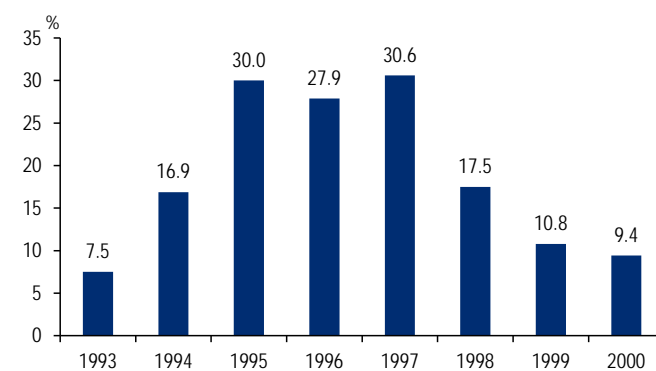
At a big picture level, we estimate that foreign currency borrowings of Chinese companies both onshore and offshore reached US\$1.3trn at the end of 2013, which is equivalent to 11% of total banking system loans (Figure 60). This is based on combining the total foreign currency loans onshore of US\$777bn and the external loan liabilities from China's international investment position (IIP) of US\$564bn. Commodity trade financing appears to be one of the drivers of China's external foreign currency borrowing but perhaps not the dominant source when compared to our estimated US\$85bn in commodity trade financing activity.

Figure 60. China FX Loans and External Loan Liabilities



Source: CEIC, Citi Research

Figure 61. Thailand Foreign Currency Loans as Percent of Total Loans



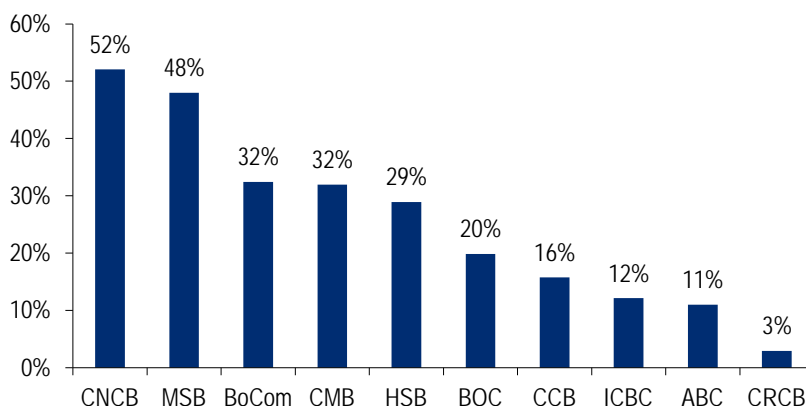
Source: Bank of Thailand, Citi Research

**Not yet as high as in pre-Asian crisis
Thailand**

Potentially rising currency mismatch on corporate balance sheets is a concern but the current size is still not yet as large as the 30% peak we saw in Thailand just before the Asian financial crisis hit in 1997 (Figure 61).

This trend of rising vulnerability in China's financial system supports our relatively cautious view on Chinese banks. We rate Chinese banks Neutral vs Asian banks but caution that despite inexpensive valuations, the fundamentals are under pressure (asset quality, NIM, funding) and positive catalysts are lacking. We believe the smaller joint stock banks are likely more exposed relative to their size to cross-border / commodity trade financing; the joint stock banks tend to have relatively larger exposure to off balance sheet LCs, guarantees and bank acceptance bills.

Figure 62. Chinese Banks: Off Balance Sheet Guarantees & Acceptances as % of Loans (2013)



Source: Company Reports and Citi Research

Global Trade Finance — Overview

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In this section, we summarize some of the key findings of the January 2014 BIS report “Trade finance development and issues”

Global trade finance was estimated by BIS to be a US\$8tr market in 2011

Around one third of global trade finance was conducted via L/Cs, another 19% backed by bank guarantees. Just over half involved trade loans

Trade finance — refers to a range of bank products directly linked to an underlying international trade transaction (exports or imports). Trade finance products typically carry short maturities. A common standardized form of bank intermediated trade finance is a *letter of credit (L/C)*. L/Cs reduce the payment risk of international trade by providing a framework where the bank either makes, or guarantees, payment to an exporter (seller) of goods on behalf of the importer (buyer) once certain documents confirming the shipment and delivery of the goods are presented. For banks, L/Cs are usually off-balance sheet commitments although there can be an associated (on balance sheet) extension of credit. Example: the bank makes payment for the goods to the exporter but then allows the importer a period of time (known as “usance”) before the importer makes payment to the bank. Banks may also make working capital related trade loans to importers or exporters where loan documentation is directly tied to an L/C or underlying trade transaction. Note that in contrast to trade finance, *trade credit* refers to when the exporter ships goods in advance of receiving payment from the importer without the use of intermediary banks, typically because the two parties have a long established commercial relationship and/or there is a strong legal framework for ensuring eventual payment.

Market sizing — There is no readily available and consistent data that provides a sizing for the global trade finance market and there are even inconsistencies in banks’ disclosures. A BIS study estimated that in 2011 a flow of US\$6.5-8tr of bank-intermediated trade finance was provided, or about one-third of global trade (implying that inter-company trade credit is still underpins two-thirds of global trade). The largest global banks are estimated to account for one quarter to one third of the global supply of bank-intermediated trade finance. Trade credit insurance also covered an estimated US\$1.7tr of global trade.

From the trade finance total, an estimated US\$2.8tr was L/Cs. These global estimates mask significant regional differences and trends, with for example much higher usage of trade finance as a percentage of trade in Asia. The estimates for China were a 2011 flow of US\$871bn of trade finance, or 47% of total merchandise trade, and the use of L/Cs is more popular. This is attributed to interest rate differentials between partially controlled interest rates onshore and liberalized and lower rates in trade finance and also the use of L/Cs as the vehicle to secure short term funding. Globally, >80% of L/Cs are still settled in US\$, with the Euro having <10% share. Loans are also typically Dollar denominated but the overall picture is more mixed. China trade loans USD vs RMB split was an estimated 2:1. The average maturity of L/Cs was about 90 days and for loans 105 days.

Figure 63. Global Banks: Short Term Trade Finance Activities

Type of product	Share of activity (%) ¹	Average maturity (days)
Letters of credit and guarantees	52	90
Import L/Cs	26	80
Export confirmed L/Cs	7	70
Performance guarantees and standby L/Cs	19	110
Loans	48	105
Loans for import	19	110
Loans for export: bank risk	13	140
Loans for export: corporate risk	16	70

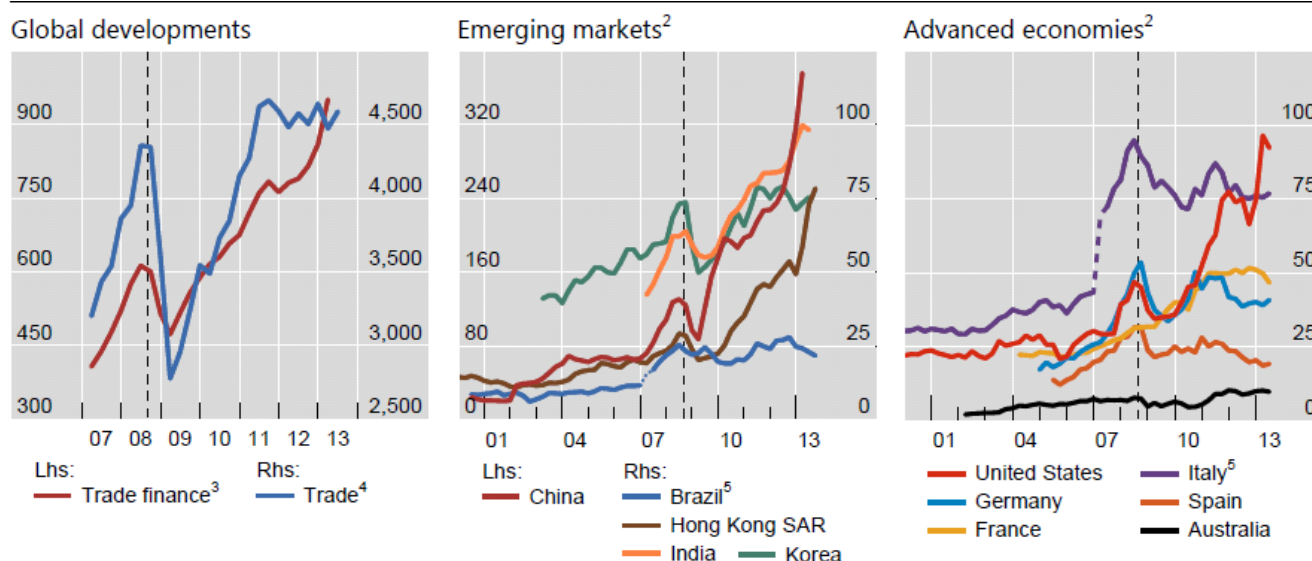
¹ Weighted by the dollar value of transactions. Averages for 2008 to 2011.

Source: BIS, International Chamber of Commerce (ICC) (2013a)

Charts below: Global trends highlight China and Hong Kong's rapid trade finance growth in USD and as a percentage of underlying trade

Commodity trading — Trade finance has played an important role in facilitating commodity trading amounting to an estimated US\$1.7tr in 2011. Historically this space was dominated (estimated >80%) by European (especially French and Swiss) banks, but in recent years that has scaled back to c.50%, with US, Asian and even Middle East banks stepping in to the breach.

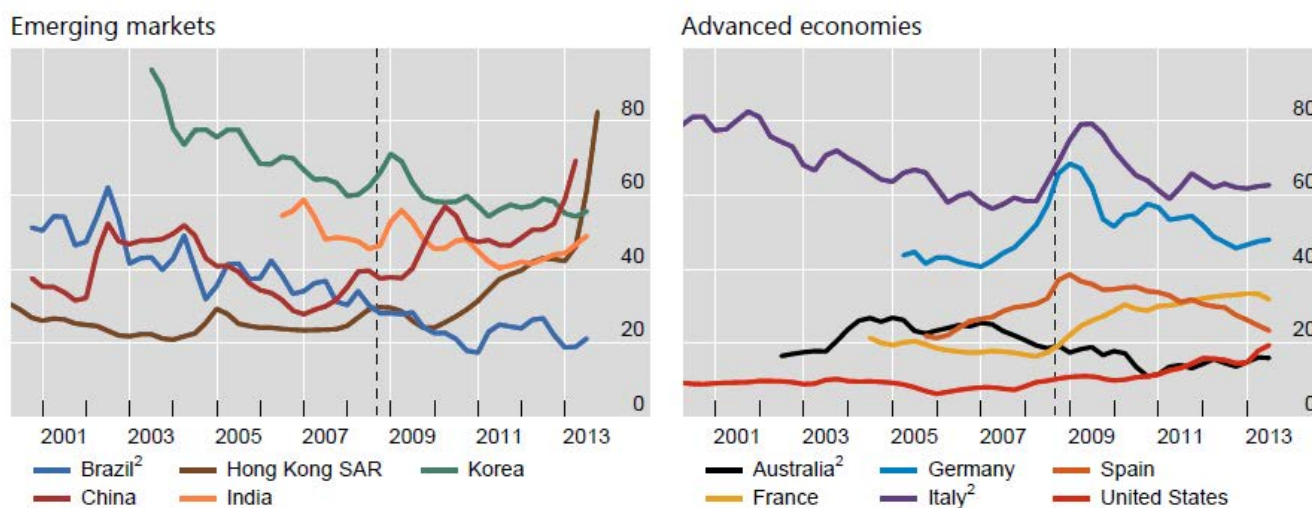
Figure 64. Trends in Trade Finance¹ (USD bn)



¹ Dashed line: Q3 2008. ² Stock of bank-intermediated trade finance. ³ Sum of trade finance in Australia, Brazil, France, Germany, Hong Kong SAR, India, Italy, Korea, Mexico, Spain and the United States. ⁴ Global merchandise trade (average of exports and imports). ⁵ Structural breaks in Q1 2007. Brazil: inclusion of import loans. Italy: inclusion of export and import guarantees.

Source: BIS, IMF

Figure 65. Trends in Trade Finance Intensity¹ (Percent)



¹ Ratio of trade finance over merchandise trade; derived by assuming a 90-day maturity of trade finance stocks, except in India and Mexico, where maturities are known to be six and 12 months respectively, and in Brazil, where the information on the flow of new loans is used. Dashed line: Q3 2008. ² Trade finance data are break adjusted.

Source: BIS, IMF

Historic trade data from 2008 to 2011 suggests that the main risks in trade finance lie not in loss rates, but rather in potential destabilizing effects on trade flows, with repercussions for the real economy.

Risks in trade finance — Low historic loss rates and short loan maturities lead most commentators to view that trade finance exposure is relatively low risk in nature. Data from the ICC trade register covering 2008-2011 (this period straddles the Lehman Crisis) suggests that the average default rate across short term trade transactions is 0.02% and the average loss rate 0.01%. The write-off rates on *defaulted* funded loans and performance guarantees range from 26% to 65%, and for L/Cs just 0-3%. The loss rate for private trade credit insurers (ratio of claims over exposures) averaged 0.17% from 2005-2012 but in 2009 alone was 0.30%. Hence trade finance exposures appear unlikely to pose a financial stability risk to the banks themselves. But evidence from the Lehman bankruptcy suggested rapid contraction in the availability of trade finance likely played an important role in the then sharp contraction of trade flows, with repercussions for the real economy.

Distributing trade finance assets to non-bank investors — distributing trade finance risks is not new, but the regulatory backdrop has made it less viable for a bank to distribute its risk to other banks. Hence the exploring of an “origination to distribute” models for trade loans (being either securitization, or direct distribution), although the scope of this activity has thus far been small.

Asian Banks — Comparative Valuations

Figure 66. Asian Banks — Comparative Valuations (as of 20 May 2014)

	RIC	CCY	Price	Mkt Cap US\$m	Risk/ Rating	Target Price	ETR (%)	P/E (x)		P/PPOP (x)		P/B (x)		P/Tang BVPS (x)		Div. Yield (%)		ROE (%)		ROA (%)		T1 Ratio (%)		TotCap Ratio (%)	
								2014E	2015E	2014E	2015E	2014E	2015E	2014E	2015E	2014E	2015E	2014E	2015E	2014E	2015E	2014E	2015E	2014E	2015E
AUSTRALIA																									
CBA	CBA.AX	AUD	79.83	119,639	1	83.70	9.7	15.4	14.8	10.51	10.06	2.68	2.55	3.35	3.10	4.9	5.1	18.4	18.1	1.09	1.09	10.8	11.1	11.7	12.0
Westpac	WBC.AX	AUD	33.68	96,791	2	35.75	11.7	14.0	13.7	9.32	8.87	2.17	2.09	2.95	2.80	5.4	5.6	15.8	15.5	1.00	0.98	10.3	10.4	N/A	N/A
ANZ Banking	ANZ.AX	AUD	32.75	83,071	2	31.00	0.0	13.1	12.6	8.81	8.30	1.91	1.79	2.29	2.12	5.3	5.4	14.7	14.8	0.90	0.90	10.4	10.9	N/A	N/A
NAB	NAB.AX	AUD	33.10	72,016	3	34.00	8.8	12.7	12.5	8.05	7.89	1.93	1.83	2.37	2.21	6.0	6.1	13.4	13.7	0.68	0.71	11.0	11.2	N/A	N/A
Bendigo & Adelaide	BEN.AX	AUD	11.37	4,560	2	11.00	2.2	14.0	13.0	8.93	8.56	1.04	1.02	1.50	1.44	5.5	5.7	8.0	8.6	0.60	0.62	10.1	9.4	11.8	11.2
Bk Of Queensland	BOQ.AX	AUD	12.02	4,186	2	11.50	1.1	14.1	13.3	8.37	8.18	1.31	1.28	1.74	1.68	5.4	5.8	9.2	9.1	0.62	0.63	9.8	9.9	11.7	11.8
Market Cap Weighted Average								14.0	13.5	9.33	8.92	2.20	2.10	2.79	2.61	5.3	5.5	15.7	15.7	0.94	0.94	10.6	10.9	11.7	11.9
CHINA																									
ICBC	1398.HK	HKD	4.84	219,368	1	6.60	41.8	5.1	4.6	3.36	3.05	0.94	0.82	0.94	0.82	7.0	7.7	20.2	19.4	1.38	1.38	12.4	12.9	15.2	15.6
CCB	0939.HK	HKD	5.46	176,072	1	7.80	48.4	4.7	4.2	3.08	2.74	0.90	0.78	0.90	0.78	7.4	8.3	20.3	19.9	1.42	1.43	11.9	12.2	13.8	14.0
ABC	1288.HK	HKD	3.32	139,086	1	4.20	32.1	4.8	4.4	2.99	2.74	0.90	0.79	0.90	0.79	7.3	7.9	19.9	19.0	1.17	1.16	9.2	9.2	9.2	9.2
BoC	3988.HK	HKD	3.52	126,839	1	4.20	24.4	5.1	4.9	3.26	3.00	0.77	0.69	0.77	0.69	7.2	7.6	16.5	15.7	1.11	1.06	10.7	10.8	12.1	12.2
BoCom	3328.HK	HKD	5.00	47,894	2	5.60	15.1	4.5	4.3	2.74	2.58	0.64	0.58	0.64	0.58	6.6	7.0	15.1	14.2	1.06	1.00	10.4	10.4	12.7	12.5
CMB	3968.HK	HKD	13.54	44,045	1	19.00	46.7	4.8	4.3	3.04	2.70	0.90	0.78	0.94	0.81	6.2	7.0	19.9	19.3	1.32	1.30	9.5	9.6	11.7	11.7
CNCB	0998.HK	HKD	4.67	28,183	2	3.90	-11.8	4.4	3.9	2.46	2.20	0.71	0.62	0.71	0.62	5.7	6.4	17.1	16.9	1.04	1.02	8.9	8.9	11.6	11.3
Minsheng Bank	1988.HK	HKD	7.70	28,173	3	7.00	-5.7	4.1	3.6	2.48	2.16	0.74	0.63	0.74	0.63	5.2	6.0	21.2	20.5	1.34	1.36	8.6	8.7	17.8	17.9
Huishang Bank	3698.HK	HKD	3.51	5,003	3	3.20	-5.1	6.1	5.7	4.16	3.77	0.87	0.77	0.87	0.77	3.3	3.5	15.0	14.3	1.25	1.20	12.3	12.4	14.8	14.9
CRC Bank	3618.HK	HKD	3.48	4,174	1	5.00	49.6	4.0	3.6	2.60	2.30	0.63	0.56	0.63	0.56	7.8	8.6	17.5	17.1	1.25	1.19	10.9	10.2	11.4	10.7
Market Cap Weighted Average								4.9	4.4	3.11	2.82	0.86	0.76	0.86	0.76	7.0	7.7	19.1	18.5	1.28	1.26	11.0	11.2	13.0	13.2
HONG KONG																									
Hang Seng Bank	0011.HK	HKD	126.00	31,071	1	140.00	15.6	14.2	12.8	11.67	10.63	2.19	2.04	2.34	2.17	4.4	4.6	16.0	16.4	1.45	1.51	11.1	11.2	16.6	16.9
BOC HK	2388.HK	HKD	22.45	30,616	1	30.00	38.8	9.7	8.9	7.62	6.99	1.39	1.27	1.39	1.27	5.1	5.6	14.8	14.9	1.15	1.18	10.8	11.2	15.3	15.2
Bank of East Asia	0023.HK	HKD	32.75	9,835	2	33.00	4.4	12.4	11.5	9.41	8.65	1.14	1.08	1.22	1.15	3.6	3.9	9.5	9.6	0.80	0.82	11.3	11.5	14.8	14.6
Dah Sing Banking	2356.HK	HKD	11.88	2,148	1	13.10	13.3	9.0	8.3	9.64	9.17	0.87	0.81	0.91	0.85	3.1	3.3	10.0	10.1	1.00	1.02	10.5	10.7	14.7	14.8
Dah Sing Fin	0440.HK	HKD	37.50	1,621	1	46.98	28.8	7.8	7.1	6.48	6.13	0.58	0.55	0.62	0.58	3.5	3.9	7.7	7.9	0.79	0.81	10.5	10.7	14.7	14.8
HSBC	0005.HK	HKD	82.45	202,806	2	90.00	13.4	12.6	11.1	7.17	6.63	1.10	1.05	1.32	1.25	4.6	5.2	8.9	9.7	0.59	0.66	14.7	15.1	17.9	18.4
Standard Chartered	2888.HK	HKD	173.60	55,260	1	201.00	19.6	10.9	9.9	6.27	5.73	1.13	1.06	1.30	1.20	3.8	4.1	10.9	11.1	0.73	0.76	12.7	12.9	17.6	17.9
Market Cap Weighted Average (excluding 0005.HK, 2888.HK)								11.9	10.8	9.56	8.75	1.66	1.53	1.73	1.60	4.6	4.9	14.3	14.6	1.22	1.25	11.0	11.2	15.8	15.8
Market Cap Weighted Average								12.1	10.8	7.56	6.96	1.23	1.16	1.41	1.32	4.5	4.9	10.5	11.0	0.75	0.81	13.5	13.9	17.4	17.7
India																									
HDFC Bank	HDBK.BO	INR	815	33,415	2	830	2.8	23.5	18.9	13.95	11.23	4.59	3.85	4.59	3.85	0.8	1.0	21.2	22.3	1.90	1.98	10.7	10.4	15.3	14.4
State Bank of India	SBI.BO	INR	2,525	32,174	1	1,930	-22.2	17.2	14.6	5.90	5.22	1.62	1.49	1.62	1.49	1.4	1.4	9.7	10.6	0.63	0.68	10.0	9.5	13.8	12.9
ICICI Bank	ICBK.BO	INR	1,445	28,504	1	1,570	10.2	17.3	14.5	10.71	9.23	2.26	2.03	2.26	2.03	1.5	1.5	13.7	14.8	1.68	1.77	13.7	13.3	20.1	19.5
AXIS Bank	AXBK.BO	INR	1,853	14,889	1	1,800	-1.8	15.9	13.7	8.52	7.33	2.30	2.00	2.30	2.00	1.1	1.1	15.7	16.0	1.53	1.54	11.3	11.0	16.0	15.3
Kotak Mah. Bank	KTKM.BO	INR	896	11,776	2	870	-2.8	25.9	21.4	16.06	13.67	3.64	3.12	3.64	3.12	0.1	0.1	15.4	15.7	2.09	2.17	18.5	17.7	21.0	19.9
Bank of Baroda	BOB.BO	INR	941	6,897	1	960	4.0	9.2	8.2	3.81	3.30	1.13	1.01	1.13	1.01	2.0	2.0	12.8	13.0	0.75	0.75	10.2	9.5	13.5	12.7
Punjab Nat. Bk	PNBK.BO	INR	1,000	6,179	1	845	-12.5	7.8	7.0	3.18	3.01	0.98	0.89	0.98	0.89	3.0	3.3	13.2	13.3	0.90	0.90	10.0	9.7	12.9	12.6
IndusInd Bank	INBK.BO	INR	557	5,003	3	420	-23.9	22.5	18.1	12.81	10.36	3.34	2.89	3.34	2.89	0.6	0.7	16.1	17.1	1.63	1.65	13.0	11.5	15.1	13.3
Yes Bank	YESB.BO	INR	547	3,369	2	480	-10.4	12.7	10.0	7.77	6.30	2.82	2.31	2.82	2.31	1.4	1.8	24.9	25.4	1.50	1.57	9.1	8.8	17.0	16.5
Canara Bank	CNBK.BO	INR	411	3,235	2	340	-13.8	7.2	6.0	2.85	2.35	0.68	0.63	0.68	0.63	2.9	3.4	9.8	10.8	0.56	0.58	9.2	8.7	12.0	11.3
Federal	FED.BO	INR	116	1,700	1	110	-3.8	13.6	10.5	6.24	5.21	1.44	1.30	1.44	1.30	1.7	1.8	11.1	13.0	0.96	1.06	12.7	11.8	13.1	12.1
Market Cap Weighted Average								19.3	16.1	10.98	9.27	3.03	2.64	3.03	2.64	1.3	1.4	16.0	16.8	1.59	1.63	12.0	11.4	16.1	15.2

Source: Company Reports and Citi Research Estimates

Figure 67. Asian Banks — Comparative Valuations (as of 20 May 2014)

			Mkt		Risk/ Rating	Target Price	ETR (%)	P/E		P/POP		P/B		P/Tang		Div. Yield		ROE		ROA		T1 Ratio		TotCap	
RIC	CCY	Price	US\$m	Cap				Price	(x)	(x)	(x)	BVPS (x)	(%)	(x)	(x)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	Ratio (%)
INDONESIA																									
Bank Central Asia	BBCA.JK	IDR	11,150	23,691	3	8,150	-25.8	16.9	15.0	12.34	10.85	3.56	2.98	3.56	2.98	1.2	1.3	23.0	21.7	3.05	3.00	15.1	15.1	15.8	15.6
Bank Rakyat	BBRI.JK	IDR	10,550	22,429	2	9,450	-8.0	11.7	10.6	8.28	7.08	2.74	2.26	2.74	2.26	1.7	1.9	25.6	23.3	3.41	3.22	15.3	14.6	16.0	15.3
Bank Mandiri	BMRI.JK	IDR	10,100	20,310	2	9,150	-7.1	12.8	12.1	8.34	7.18	2.35	2.03	2.35	2.03	1.6	1.7	19.2	17.7	2.36	2.17	13.2	12.8	14.1	13.7
Bank Negara ID	BBNI.JK	IDR	4,805	7,722	1	5,450	16.5	9.5	9.1	6.59	5.70	1.74	1.51	1.74	1.51	2.1	2.2	19.0	17.8	2.37	2.20	13.7	13.5	14.5	14.2
Bank Danamon	BDMN.JK	IDR	4,315	3,564	3	3,225	-22.3	10.2	9.2	4.27	3.75	1.22	1.11	1.29	1.19	2.9	3.3	12.4	12.6	2.11	2.04	16.7	16.4	16.6	16.3
Bank BTN	BBTN.JK	IDR	1,125	1,024	2H	1,225	11.6	7.3	6.2	4.32	3.67	0.93	0.83	0.93	0.83	3.6	4.2	13.4	14.1	1.14	1.11	14.4	13.3	15.3	14.5
Bk Jabar Banten	BJBR.JK	IDR	875	731	3H	900	9.4	7.6	7.0	4.22	3.75	1.21	1.11	1.21	1.11	7.2	7.9	16.2	16.6	1.42	1.34	15.4	14.4	15.4	14.4
Bank Bukopin	BBKP.JK	IDR	680	533	3H	600	-7.6	7.3	6.3	4.77	4.04	0.85	0.75	0.85	0.75	0.0	0.0	12.4	12.7	0.90	0.92	12.3	12.2	14.8	15.6
Market Cap Weighted Average								13.1	12.0	9.05	7.84	2.67	2.25	2.67	2.25	1.7	1.8	21.7	20.1	2.82	2.68	14.6	14.2	15.3	14.9
JAPAN																									
MUFG	8306.T	JPY	547	76,450	1	800	49.0	8.1	8.6	7.07	6.58	0.66	0.63	0.66	0.63	2.6	2.7	5.9	5.1	0.30	0.28	14.2	14.4	18.3	18.4
SMFG	8316.T	JPY	3,868	52,195	1	6,500	71.4	6.7	8.0	6.32	6.04	0.75	0.70	0.75	0.70	3.1	3.4	8.2	6.9	0.38	0.33	10.8	10.8	14.2	14.0
Mizuho	8411.T	JPY	198	47,387	1	320	64.9	8.0	8.5	6.53	5.90	0.79	0.74	0.79	0.74	3.3	3.5	9.2	8.0	0.33	0.30	11.5	12.0	14.6	15.0
SMTH	8309.T	JPY	413	15,905	1	580	43.3	11.6	10.4	7.76	7.31	0.84	0.84	0.84	0.84	2.4	2.9	7.0	6.8	0.35	0.35	10.5	10.0	14.4	13.8
Resona	8308.T	JPY	507	10,943	1	700	41.0	7.4	9.1	6.16	5.51	0.87	0.80	0.87	0.80	3.0	3.0	11.3	8.4	0.42	0.33	8.5	8.6	12.3	12.2
BoY	8332.T	JPY	543	6,866	1	700	30.9	12.3	12.5	6.82	7.35	0.92	0.87	0.92	0.87	2.0	2.0	7.4	6.9	0.42	0.40	12.3	12.4	14.8	14.8
Shizuoka Bank	8355.T	JPY	955	5,924	1	1,200	27.2	13.3	14.9	9.42	10.88	0.75	0.70	0.75	0.70	1.6	1.6	5.2	4.1	0.41	0.33	15.5	15.7	17.5	17.5
Shinsei	8303.T	JPY	211	5,527	1	330	56.9	14.7	9.1	22.52	18.96	0.83	0.77	0.83	0.77	0.5	0.5	3.8	3.7	0.29	0.32	11.2	12.0	12.7	13.7
Chiba Bank	8331.T	JPY	638	5,327	1	850	35.1	11.9	11.1	8.03	8.21	0.73	0.69	0.73	0.69	1.9	1.9	5.8	5.3	0.37	0.34	12.8	13.0	14.0	14.2
Seven Bank	8410.T	JPY	364	4,278	3	300	-15.5	18.5	19.9	11.68	12.54	2.58	2.28	2.58	2.28	2.1	2.2	14.9	12.2	2.78	2.31	75.2	0.0	75.2	0.0
Fukuoka Fin	8354.T	JPY	426	3,611	1	550	31.5	10.4	13.2	4.69	5.07	0.54	0.52	0.68	0.65	2.8	2.3	7.2	5.9	0.37	0.30	8.3	8.6	10.4	10.7
Joyo Bank	8333.T	JPY	488	3,518	1	700	45.3	14.6	15.3	9.23	8.70	0.70	0.68	0.70	0.68	1.7	1.8	4.4	4.1	0.27	0.25	12.2	10.8	12.8	11.4
Aozora	8304.T	JPY	301	3,465	1	350	21.1	10.2	9.8	10.26	8.86	0.97	0.95	0.97	0.95	4.8	4.8	7.8	7.8	0.80	0.78	15.7	15.4	15.1	14.8
Hiroshima Bank	8379.T	JPY	429	2,629	1	600	41.7	12.5	12.3	6.97	6.85	0.74	0.77	0.74	0.77	1.9	1.9	6.0	6.0	0.29	0.29	7.8	7.9	11.3	11.3
Shiga Bank	8366.T	JPY	539	1,404	1	750	40.4	12.9	19.4	7.22	8.55	0.70	0.68	0.70	0.68	1.3	1.3	5.1	3.3	0.22	0.14	9.4	9.6	14.1	14.2
Market Cap Weighted Average								8.9	9.4	7.35	6.93	0.78	0.73	0.78	0.74	2.7	2.9	7.5	6.5	0.39	0.35	13.2	12.0	16.5	15.2
KOREA																									
Shinhan Fin Grp	055550.KS	KRW	47,150	21,803	2	49,000	5.4	11.2	10.4	5.62	5.10	0.82	0.77	0.82	0.77	1.5	1.7	7.4	7.6	0.62	0.64	11.5	11.7	13.4	13.6
Hana	086790.KS	KRW	37,750	10,671	1	45,000	20.0	8.8	7.2	3.69	3.36	0.50	0.46	0.50	0.46	0.8	1.1	5.8	6.7	0.39	0.45	9.1	9.0	12.1	12.0
BS Fin Grp	138930.KS	KRW	16,150	3,045	1	19,000	19.5	8.6	8.7	4.53	4.61	0.88	0.81	0.88	0.81	1.9	1.9	10.2	9.6	0.82	0.84	11.3	11.5	16.0	16.3
DGB Fin	139130.KS	KRW	15,700	2,052	1H	20,000	29.9	7.5	6.5	3.80	3.52	0.72	0.65	0.72	0.65	2.5	2.5	10.0	10.6	0.72	0.78	10.4	10.7	13.6	14.0
Market Cap Weighted Average								10.1	9.1	4.89	4.48	0.72	0.68	0.72	0.68	1.4	1.6	7.3	7.7	0.58	0.61	10.7	10.9	13.2	13.4
MALAYSIA																									
Maybank	MBBM.KL	MYR	9.97	27,492	1	11.11	16.4	12.8	11.7	8.51	7.77	1.83	1.73	2.09	1.96	5.0	5.6	14.3	14.9	1.15	1.16	12.7	12.4	14.8	14.4
Public	PUBM.KL	MYR	19.86	21,791	1	21.01	8.7	15.2	13.8	10.78	9.78	3.05	2.71	3.34	2.94	2.9	3.1	21.3	20.7	1.43	1.43	10.6	10.8	13.6	13.6
CIMB	CIMB.KL	MYR	7.38	19,113	3	6.75	-4.9	12.5	11.2	8.97	8.08	1.60	1.49	2.17	1.97	3.7	3.9	14.3	13.8	1.25	1.27	10.8	11.0	14.8	15.1
Hong Leong Bk	HLBB.KL	MYR	13.98	8,164	3	13.76	1.9	12.3	11.5	10.24	9.47	1.70	1.54	2.01	1.79	3.3	3.5	14.5	14.0	1.18	1.20	13.1	13.8	16.5	17.2
AMMB	AMMB.KL	MYR	7.28	6,817	2	7.58	7.8	12.0	10.9	7.99	7.23	1.68	1.54	2.24	2.00	3.3	3.7	14.5	14.7	1.40	1.44	11.6	11.7	15.3	15.1
RHB Capital	RHBC.KL	MYR	8.33	6,591	1	8.87	9.6	10.5	9.5	6.85	6.14	1.16	1.07	1.62	1.45	3.1	3.4	11.5	11.7	1.01	1.02	10.8	10.6	13.5	13.1
Alliance Finan	ALFG.KL	MYR	4.45	2,140	3	4.78	11.9	12.1	11.1	8.54	7.77	1.60	1.48	1.74	1.60	4.1	4.6	13.5	13.7	1.23	1.24	12.5	12.3	15.1	14.7
Market Cap Weighted Average								13.0	11.9	9.14	8.30	1.99	1.83	2.36	2.14	3.8	4.2	15.8	15.7	1.25	1.26	11.6	11.7	14.6	14.6

Source: Company Reports and Citi Research Estimates

Figure 68. Asian Banks — Comparative Valuations (as of 20 May 2014)

			Mkt	Risk/	Target	ETR	P/E		P/POP		P/B		P/Tang		Div. Yield		ROE		ROA		T1 Ratio		TotCap		
RIC	CCY	Price	US\$m	Rating	Price	(%)	2014E	2015E	2014E	2015E	2014E	2015E	2014E	2015E	2014E	2015E	2014E	2015E	2014E	2015E	2014E	2015E	2014E	2015E	
PHILIPPINES																									
Bk of Philippine	BPI.PS	PHP	89.00	7,992	2	90.00	3.1	17.8	15.1	12.80	10.87	2.45	2.20	2.45	2.20	2.0	2.0	15.8	15.4	1.61	1.70	15.2	15.3	16.4	16.4
Banco De Oro	BDO.PS	PHP	88.70	7,259	1	96.00	9.2	16.6	14.0	11.94	9.71	1.77	1.62	1.78	1.63	1.9	1.8	11.1	12.1	1.24	1.32	14.2	14.0	17.8	17.2
Metrobank	MBT.PS	PHP	89.50	5,614	1	97.69	10.0	14.5	12.5	8.94	7.55	1.65	1.47	1.72	1.53	0.9	0.9	12.0	12.4	1.38	1.45	15.6	15.9	16.4	16.6
Market Cap Weighted Average							16.6	14.0	11.56	9.59	1.91	1.73	1.94	1.75	1.5	1.5	12.5	12.9	1.38	1.46	15.4	15.4	17.4	17.2	
SINGAPORE																									
DBS	DBSM.SI	SGD	16.84	32,945	1	19.00	17.0	10.7	9.3	7.56	6.47	1.14	1.06	1.31	1.21	4.2	4.8	11.0	11.9	0.94	1.03	13.9	13.7	16.4	16.0
UOB	UOBH.SI	SGD	22.63	28,732	2	21.70	-0.7	12.2	10.9	8.61	7.72	1.38	1.28	1.64	1.50	3.4	3.8	11.8	12.2	1.01	1.05	13.0	12.9	16.1	15.7
Market Cap Weighted Average							11.4	10.1	8.05	7.05	1.25	1.16	1.46	1.35	3.8	4.3	11.4	12.0	0.97	1.04	13.5	13.3	16.3	15.9	
TAIWAN																									
Fubon	2881.TW	TWD	40.80	13,837	2	43.50	9.2	10.5	10.0	9.62	8.93	1.26	1.18	1.27	1.18	3.0	3.1	12.3	12.2	0.84	0.82	10.4	10.5	13.4	13.4
Mega	2886.TW	TWD	23.50	9,696	3	20.50	-8.3	11.2	10.9	8.51	8.03	1.16	1.11	1.16	1.11	4.5	4.5	10.6	10.4	0.81	0.80	9.3	9.3	11.2	11.1
CTBC	2891.TW	TWD	18.70	9,118	2	20.00	10.6	11.0	10.2	8.84	8.22	1.34	1.25	1.43	1.32	3.6	3.9	12.6	12.7	1.00	1.01	9.7	9.6	11.8	11.7
E.Sun	2884.TW	TWD	19.15	4,102	3	17.00	-9.2	11.8	11.0	8.50	7.95	1.21	1.14	1.28	1.20	2.0	2.2	11.0	10.6	0.71	0.73	9.6	9.9	13.4	13.5
Taishin	2887.TW	TWD	14.35	4,059	1	17.00	20.4	8.6	8.7	4.89	4.70	1.02	0.97	1.03	0.98	2.0	2.0	12.2	11.4	0.45	0.43	9.3	9.7	12.1	12.5
Market Cap Weighted Average							10.7	10.2	8.60	8.04	1.23	1.15	1.26	1.18	3.3	3.4	11.8	11.6	0.82	0.81	9.8	9.9	12.4	12.4	
THAILAND																									
Siam Comm	SCB.BK	THB	163.50	17,077	1	182.00	15.0	10.8	9.5	7.03	6.39	2.01	1.78	2.09	1.85	3.7	4.2	19.7	19.8	1.95	2.04	12.8	14.4	16.1	17.5
Kasikornbank	KBANKf.BK	THB	193.00	14,193	1	215.00	14.0	10.4	9.0	6.16	5.49	1.83	1.60	1.88	1.63	2.6	3.0	18.9	18.9	1.86	1.96	12.4	14.0	15.5	16.9
Bangkok Bank	BBLf.BK	THB	185.00	10,851	1	210.00	17.6	9.7	8.8	6.59	6.03	1.11	1.03	1.11	1.03	4.1	4.5	11.9	12.1	1.37	1.41	14.8	16.8	17.2	18.3
Krung Thai	KTb.BK	THB	18.40	7,902	1	22.00	24.3	8.5	7.2	4.82	4.39	1.15	1.05	1.15	1.05	4.7	5.6	14.1	15.2	1.17	1.30	10.0	10.2	14.2	14.0
TMB Bank	TMB.BK	THB	2.24	3,006	3	2.10	-3.6	12.3	10.2	6.13	5.57	1.46	1.33	1.46	1.33	2.7	3.2	12.3	13.6	1.00	1.12	10.9	11.1	16.2	16.5
Thanachart Cap	TCAP.BK	THB	33.25	1,305	2	34.00	6.6	6.9	6.2	2.09	1.97	0.82	0.75	1.36	1.18	4.4	4.8	12.5	12.6	0.57	0.59	10.0	10.2	15.2	15.3
TISCO Fin	TISCO.BK	THB	38.50	947	3	35.00	-3.6	7.2	6.3	3.18	3.06	1.24	1.11	1.24	1.11	5.5	6.3	17.8	18.4	1.15	1.22	9.3	9.6	13.3	15.7
Market Cap Weighted Average							10.1	8.8	6.17	5.60	1.59	1.42	1.64	1.46	3.6	4.1	16.5	16.9	1.61	1.69	12.5	13.8	15.8	16.8	

Source: Company Reports and Citi Research Estimates

Implications for Commodities

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Carry Trade With “Chinese Characteristics”

- **Commodity trade financing is widespread in China, utilizing a variety of formats and covering a broad range of commodities.** The most common types focus on interest rate arbitrage through the use of letters of credit, either for imports into mainland China or for inventory financing. The most affected commodities are copper, nickel, zinc, iron ore, soybeans, and rubber.
- **We believe that Chinese commodity trade financing deals present a far more modest risk to commodity prices than generally believed.** For “vanilla” financing transactions, a real end-user is required; for inventory financing, the S&D impact is limited to the flow not the stock of material being financed. Inventories being financed are modest relative to consumption for most commodities and would likely be unwound gradually rather than all of a sudden.
- **Financing deals do allow financiers to pay a premium for commodities and engage in what would otherwise be loss making trades** due to compensating revenue from financing activity. However, the extent of this premium is relatively small at 1.5% or less.
- **Financing deals also are contributing to a shift in inventories to China from the rest of the world,** though this may ease as financing activity increasingly takes place overseas. Inventories being financed are relatively modest for most commodities, though, and these shifts have a greater impact on physical premiums and spreads than flat prices.
- **Copper is by far the most exposed commodity to Chinese financing deals.** A forced liquidation of financed inventories would undoubtedly have a negative impact on prices, but we believe the impact would be less than most assume. Inventory financing is already moving overseas, a trend that would dramatically accelerate if financing in China was no longer possible. Any unwind would also likely take months rather than days or weeks to unfold.

Sizing financing activity

We estimate the size of financing for major commodities in China by breaking such activity into two categories. The first is inventory financing, which refers to material being traded in Chinese bonded warehouses/zones. For each commodity, we estimate the volume being financed and the average leverage – how quickly it is being turned over.

The second is import financing, which represents the one-time financing of imported material. We calculate the scope of such financing by looking at monthly import volumes, estimating a share being financed, and assuming a leverage of two based on having two months remaining on an L/C after physical material is imported.

Our estimates show copper as by far the largest component of financing – an estimated US\$38bn out of a total of US\$85bn for the main commodities being financed – but that a number of other commodities also are fairly large in scope, including soybeans and iron ore. Our estimates also suggest that financing of bonded inventories is a more significant driver of commodity financing than simple imports due to the high degree of leverage attained.

Money raised via inventory financing outpaces that raised through simple import financing

Figure 69. Estimated size of financing activity for major commodities

	Copper	Zinc	Nickel	Aluminium	Iron Ore	Soybeans	Rubber	Main Commodities
Financing \$ mil	\$38,400	\$3,200	\$8,200	\$1,600	\$13,500	\$14,600	\$5,600	\$85,100
Bonded Inventory (kt)	1,000	250	80	200	50,000	5,000	500	
Share Financed	65%	75%	90%	70%	40%	80%	80%	
Inventory Financed (kt)	650	188	72	140	20,000	4,000	400	
Leverage	8	8	6	6	4	5	6	
Inventory Financing \$ mil	\$34,800	\$3,000	\$7,800	\$1,500	\$8,400	\$11,000	\$4,800	\$71,300
Monthly Imports (kt)	300	60	12	50	70,000	5,500	350	
Share Financed	90%	90%	90%	80%	35%	60%	60%	
Imports Financed (kt)	270	54	11	40	24,500	3,300	210	
Leverage	2	2	2	2	2	2	2	
Imports Financing \$ mil	\$3,600	\$200	\$400	\$100	\$5,100	\$3,600	\$800	\$13,800
Price	6700	2000	18000	1800	105	15	200	

Source: Citi Research

Note: Prices are in \$/t, except for soybeans (\$/bu) and rubber (JPY/kg)

Profitability of financing trade

While commodity financing deals in China take a variety of forms, we examine the profitability of some of the most common in this section. In particular, Figure 2 illustrates the financing revenue and costs of typical L/C based deals (excludes potential profit & loss from commodity specific factors, such as changes in physical premiums).

‘Round 0’ in Figure 2 is a simple import trade, whereby a financier purchases a commodity with a low interest rate 90 day letter of credit (backed by a cash pledge), then sells the parcel and re-lends the money onshore at a higher interest rate for two months.

Figure 70. Illustrative financing deal P&L

	Cash Pledge	LC Amount	Funds Raised	Interest Cost	Revenue
Round 0	20	100	80	0.62	1.60
Leverage			4		
Net Revenue					0.98
Return					4.9%
Annualized Return					21.1%
Round 1	100	500	480	3.10	8.01
Leverage			24		
Net Revenue					4.29
Return					21.5%
Annualized Return					117.6%
Round 2	500	2500	2480	15.48	40.03
Leverage			124		
Net Revenue					20.83
Return					104.2%
Annualized Return					1637.6%
Assumptions	Borrowing Rate	Cash Pledge	Investment Return		
	2.5%	20%	10%		

Source: Citi Research

Financing trade generally quite profitable

‘Round 1’ supposed that instead of lending the money obtained in the previous round, the financier uses this money as a cash pledge to obtain a larger letter of credit (or several smaller ones). This larger sum of money is used to buy a greater quantity of commodities, which is then sold and the money lent onwards. ‘Round 2’ is another iteration of the principle behind ‘round 1’, with the financier taking the L/C granted in ‘round 1’ and using this as a cash pledge for an even larger L/C.

In Figure 3, we examine the impact on profitability of differences in the borrowing-lending spread, in down payment requirements, and in the degree of leverage (round 0, 1, or 2). In general, we find such trade to be quite profitable² under a range of assumptions that we think fit market conditions (some traders enjoy even better terms than those listed in Figure 3).

Financing profitability is quite sensitive to L/C cash pledge requirements

We find returns generated from financing activity to be quite sensitive to the required cash pledge, particularly the more leveraged the trade. In other words, were L/C down payment rates to be raised, traders rapidly trading inventory in bonded warehouses would see their profitability decline more significantly than those doing simple import financing.

However, the other side of its greater leverage is that inventory financing with high turnover is generally more profitable than simple import financing.

Figure 71. Illustrative commodity financing revenue – L/C down payment requirements have a large impact on profitability

USD Borrowing Rate	RMB Investment Rate	Cash Pledge	Rd 0 Return	Rd 1 Return	Rd 2 Return	Rd 0 Annualized	Rd 1 Annualized	Rd 2 Annualized
2.5%	10%	20%	5%	21%	104%	21%	118%	1638%
2.5%	10%	30%	3%	9%	27%	14%	40%	164%
2.5%	10%	40%	2%	5%	10%	10%	20%	46%
3.0%	13%	20%	7%	29%	142%	29%	179%	3345%
3.0%	13%	30%	4%	12%	38%	19%	58%	263%
3.0%	13%	40%	3%	6%	14%	14%	28%	69%

Source: Citi Research

Regulatory Outlook

Efforts by the Chinese government to regulate commodity financing have been ongoing for several years.

- **March 2011:** The State Administration of Foreign Exchange (SAFE) issued “document no. 11 (2011)” instructing banks to tighten surveillance on entrepot trade (import and re-export). Many in the copper market interpreted these measures as aimed at the copper financing trade, but the actual impact was minimal.
- **May 2013:** SAFE issued “document no. 20 (2013)” calling for strict regulation of companies involved in abnormally large goods trading volumes. It also instructed banks to increase screening of firms conducting “imaginary trading.” The regulations called for the punishment of traders who use false documentation to conduct arbitrage trading. This round of regulations had the largest impact on actual financing activity to date. Financing activity slowed in June and July, though this was also due to certain physical market developments.³ However, August and September saw financing activity roar back as traders developed new techniques. One example was the new prohibition of using a single warehousing receipt to obtain rolling financing leading traders to cooperate and swap parcels.

Regulatory efforts have a long history, but have picked up over the past year

² As this analysis focuses purely on financing revenue and costs, it excludes a number of other costs, including logistical and administrative, but it also excludes other potential connected revenue streams, such as physical arbitrage and premium differentials. It should thus be seen as illustrative purely of the financing net revenue potential.

³ For copper, the large fall in LME prices led to a very favorable import arbitrage, encouraging traders to shift stocks from bonded warehouses onshore, and to import metal directly into the mainland rather than to bonded warehouses.

- **December 2013:** SAFE issued “document no. 44 (2013)” instructing banks to increase oversight of customer trading activity, particularly identifying those using letters of credit and financing longer than 90 days. Firms conducting trading that is frequent, in large volume, using high value goods, arbitrage trading, or entrepot trading were singled out for particular scrutiny. SAFE also promised increased scrutiny of banks’ customer screening measures. However, despite the vigorous language of the document, it had little effect on actual commodity financing activity.
- **April 2014:** The CBRC issued “document 316 (2014)” calling for an investigation into iron ore financing activity. Banks have also reportedly been instructed to raise L/C deposit rates. Rumors also circulated that banks would be required to raise deposit rates for iron ore L/Cs, though this was not in the CBRC document.

Regulators’ efforts to limit the scope of commodity financing activity through increased scrutiny – both directly and via banks – and stricter threatened punishment have been largely unsuccessful. These efforts, along with widely publicized collapses of steel financing, have brought an end to certain financing practices, such as pledging the same underlying collateral against multiple lines of credit. However, the size and scope of commodity financing has continued to expand.

Concrete measures would be needed to significantly curb financing deals

Focus on commodity financing in China tends to move in cycles as such activity gains prominence in the media and comes to regulators’ attention, then ease off, with the pattern having repeated over the past four years. That said, the scope of commodity financing activity has clearly expanded over the past year, prompting the strongest regulatory response to date.

However, we do not believe that additional regulatory scrutiny or window guidance is likely to limit financing activity. This would require the imposition of concrete restrictions on banks’ activities. Similarly, explicit requirements that banks raise required L/C deposit rates would reduce the profitability of financing trade, though it would not end such activity.

What Could End the Carry Trade?

There are a number of factors that could significantly limit the scope of Chinese commodity financing activity. The most significant potential factors include:

- **US rate hikes:** Rising US interest rates are likely to eventually see the most profitable form of the commodity financing carry trade unwind (as it should for cash & carry deals for aluminium and zinc in the West).
- **Letter of credit regulation:** Restrictions on the use of L/Cs could greatly impede financing activity. For example, preventing banks from issuing L/Cs for purchases of metal from bonded warehouses would effectively halt the most popular form of inventory financing. Raising required deposit rates for L/Cs would significantly decrease the profitability of financing deals and reduce leverage in the system.
- **Chinese banking regulation:** The imposition of specific restrictions on Chinese banks has the potential to limit financing activity. One possibility is the imposition of limits on banks’ credit exposures to commodities trade or commodities traders.
- **Real estate market collapse:** While not something we are forecasting, a collapse of the Chinese real estate market would cause a severe disruption to the commodity financing chain. Most of the money raised through such financing is eventually funneled to the real estate industry and the inability of such investments to cover costs would see both defaults and a breakdown in the financing chain.

However, it is worth noting that RMB depreciation or increased FX volatility is unlikely to seriously hamper commodity financing as participants are able to hedge this exposure at relatively low cost.

Commodity Implications

General Implications

We do not believe financing deals represent a large risk to commodity prices

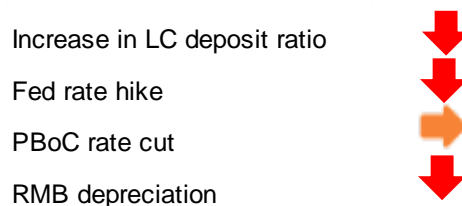
We believe that Chinese commodity financing deals present a far more modest risk to commodity prices than generally believed.

- For “vanilla” financing transactions whereby commodities are imported into China and funds lent onwards for the remainder of the L/C’s life, this activity requires real onshore demand unrelated to financing activity for each transaction (it is not possible to borrow offshore to finance onshore purchases).
- From a supply & demand perspective, it is not the size of inventories (stock) being used for financing deals that is important, but rather the *change* in inventories (flow). Thus, while copper inventories in bonded warehouses may be around 1 Mt, with 650 kt being financed, monthly changes in financing stocks are rarely greater than 50 kt.
- Even if commodity financing deals are eventually unwound, the unraveling is unlikely to be sudden. We think the chance of sudden regulatory action or other factor that would force a broad-based halt to financing deals is low. Moreover, while the unwinding of financing deals would force the liquidation of inventories being financed, these are relatively modest for most commodities.

Halt to financing deals would force inventory unwinds

It also bears remembering that the use of commodities as a financing tool is common across the world, albeit in different forms. Prominent examples include inventory repo financing (for oil, metals, etc.) and cash and carry deals (notably for aluminium and zinc).

Figure 72. Impact of possible financing related developments on commodity prices



Source: Citi Research

Nevertheless, there are several implications for commodities used in Chinese financing deals:

Financing deals allow purchases of commodities at slightly higher prices

- **Willingness of those engaging in financing activities to pay a premium** on purchases due to ability to recoup such losses through financing revenue. This can effectively bid up commodity prices slightly, particularly for offshore China prices (such as TSI iron ore or copper bonded warehouse premiums). However, the extent of this premium is relatively small, at 1.5% or less.
- Similarly, a **willingness to enter into trades that otherwise are loss making**, such as when the import arb is slightly negative or crush margins for imported soybeans are slightly negative. This creates downwards pressure on domestic prices and makes such negative spreads more common.

And encourage movement of inventory to Chinese bonded zones

■ **Movement of inventories to Chinese bonded zones and certain international warehouses** (particularly locations in Singapore and Malaysia operated by major warehousing companies) where the infrastructure for financing trades exists. This can pull material away from other locations, serving to tighten overseas markets, making them more vulnerable to squeezes, and affecting global physical premiums.

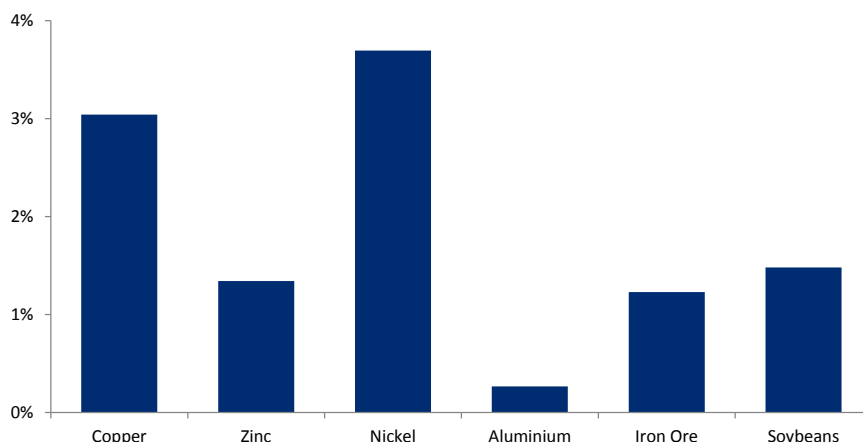
Individual Commodities

While there is a long list of commodities that are used for financing purposes in China, the most commonly used are copper, nickel, zinc, iron ore, soybeans, and rubber.

Copper

Copper undoubtedly represents the largest portion of commodity financing in China. Moreover, inventories being financed in Chinese bonded warehouses represent a large share of global inventories. We estimate current bonded stocks at 1 Mt, with around 650 kt of this being financed. In contrast, global exchange stocks are currently only 335 kt (LME: 213 kt, COMEX: 18k, SHFE: 104 kt).

Figure 73. The size of inventories being financed is small relative to annual global consumption for most commodities



Source: Citi Research

Risks for copper are greatest of any commodity, particularly from inventory financing

Changes in Chinese financing demand – particularly for inventory financing – can have a significant impact on global copper flows, with important implications for physical premiums and spreads, and a lesser impact on flat prices. However, simply increasing the difficulty or reducing the returns of entering into financing deals in bonded warehouses generally not sufficient to disrupt financing activity.

Over the past year, we have already seen a migration of financing activity towards locations outside of China, particularly to Malaysia and Singapore (but also to Europe and other Asian countries) in response to concerns over financing becoming more difficult within China. While this represents a shift in the physical location of where copper stocks are being tied up through financing, it does not change the overall volume of copper financing activity and thus is broadly neutral for copper prices (though it does matter for physical premiums). Moreover, financing copper outside of mainland China reduces the risk of such activity being impeded by new Chinese regulatory restrictions.

Inventory financing migrating out of China

Nevertheless, copper remains the most exposed commodity to Chinese financing activity. Should traders be forced to exit financing deals for metal in bonded warehouses, a large quantity of metal would find its way into the spot market (we estimate metal financed in bonded warehouses represents c3% of annual global consumption), with significant negative implications for copper prices. However, we think it likely that such an unwind would occur over a period of months rather than days or weeks.

Nickel is held for longer periods than copper

Nickel

Nickel financing resembles that of copper, with a few notable exceptions. The first is that movement of physical nickel inventories tends to be much less than for copper. Instead, the same physical parcels of nickel often sit in bonded warehouses for years being financed. Another is the current general state of the market. While the copper market is in surplus, the nickel market finds itself in pronounced deficit since the imposition of Indonesia's raw materials export ban.

The demand for physical nickel units in China is currently extremely high given diminished NPI production and traders' hoarding of nickel units of any kind (nickel ore, NPI, refined nickel). While not our expectation, were stocks from financiers released into the market, the extra metal availability could have a significant short term impact on the physical market given our estimate of around 70 kt of inventories being financed in bonded warehouses.

Zinc market financing activity relatively modest

Zinc

Financing of zinc is also similar to that of copper, but on a smaller scale. We estimate total inventories being financed for zinc at below 200 kt, representing only a bit over 1% of annual global consumption. Moreover, zinc inventories are quite ample globally and these volumes could easily be absorbed by the ex-China market if need be.

Imports of zinc also represent a significantly smaller share of global consumption than for copper. As a result, the end of financing activity would likely have a modest impact on the zinc market.

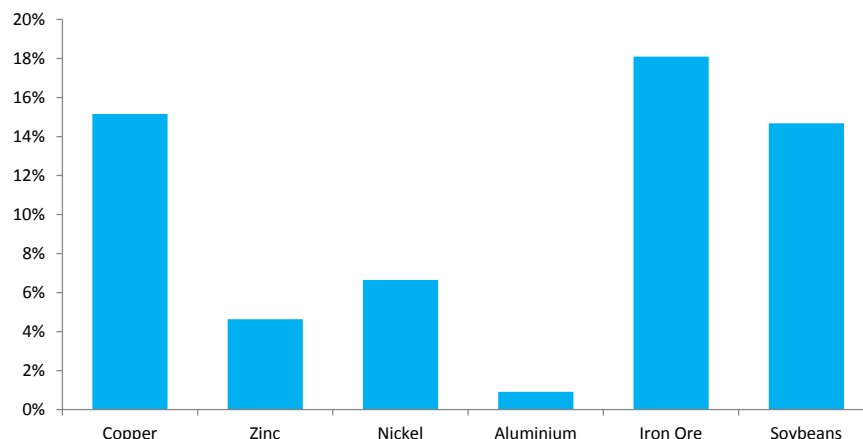
Iron ore financing does not affect import volumes

Iron Ore

Unlike for base metals, financing deals do not influence the volume of iron ore imports into China. These are determined by the ex-China market balance for seaborne iron ore as miners will export the remainder of their supply that they are unable to sell in other markets to China, with spot prices adjusting to the necessary clearing price. Financing deals do have an impact on this spot price though as traders are able to take losses on physical transactions to the degree they are made up for by financing activity.

Perhaps more significant is the ore being turned over in bonded zones to generate financing revenue. This remains far less common than for base metals, but activity has grown considerably since last fall. The increase in the volume of such deals has provided some price support, but such increases are small compared to the size of the overall physical market. In contrast, were such financing activity halted, the ore would need to be sold on the spot market, which could cause a short term fall in prices.

Figure 74. The volume of Chinese imports being financed is a significant share of global consumption for several commodities, with the removal of this bid likely to see a premium coming out of the physical market, though this is likely to be 1.5% or less



Source: Citi Research

Some downside risk to iron ore prices if financing inventory were forced to be liquidated

Traditionally, iron ore was not popular as a financing tool given it is low value per weight, a relatively heterogeneous product, with no way to hedge price exposure. This has changed as the volume of ore in the market has increased, the Dalian exchange has improved the ability to hedge price risk, and tight credit conditions have spurred demand for commodity financing. Iron ore financing has lately drawn more regulatory as a result, but expect such deals to continue in the near term.

Soybeans

Soybeans imports sensitive to financing demand

Soybeans are the most commonly used agricultural product for financing deals in China (followed by rubber). Variations in this demand, along with the import arb and crush margin have a significant influence on monthly import volumes. A more difficult climate for financiers could thus see an erosion of the premium such traders are willing to pay.

Inventories being financed in bonded warehouses play a smaller role in the market, though, estimated at around 4 Mt, equivalent to less than one month of Chinese imports, 1.5% of annual global consumption, or 6% of USDA's estimate for 2013/2014 global ending stocks.

Gold

We do not believe gold is being used for financing deals

We do not believe that financing activity of the type described in this report is present in the gold market. The gold market behaves very differently from most other commodities in China due to its special treatment by regulators. Aside from Chow Tai Fook, only banks possess licenses to import gold into China. The typical financing deal structure of traders or producers opening overseas L/Cs to import goods is thus untenable.

Rather, banks import gold into China then sell or lease it to onshore customers. Chow Tai Fook is a special case given its ability to import gold directly, but we do not believe they engage in financing deals with their gold in any of the variants described in this report.

The types of "financing" that take place in the gold market in China are typical of those seen in other countries, particularly gold leasing.

Appendix A-1

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