

## Japanese Banks in a Global Context

### Why is the market spurning earnings quality and value?

- Over the past two years, Citi Research Japan analysts have issued 15 reports in the "Global Context" series to help investors understand Japan's position in what is an increasingly global investment environment. This is our annual in-depth look at Japan's banks in a global context. Here we argue that although Japan is second only to the US in terms of earnings improvement since the Lehman shock, Japanese bank share prices continue to lag the recovery in earnings. We also conduct a deep regression analysis and look in detail at the quality of earnings and feel that investors are again underestimating the improvement as well as the rapid build-up of overseas lending which is boosting margins significantly and is likely to be a strong growth driver in the future. This undervaluation is also highlighted in a mini head-to-head comparison with HSBC. With Abenomics taking root and a stronger domestic economy, Japan's banks look set for a period of strong earnings and we remain bullish on the sector.

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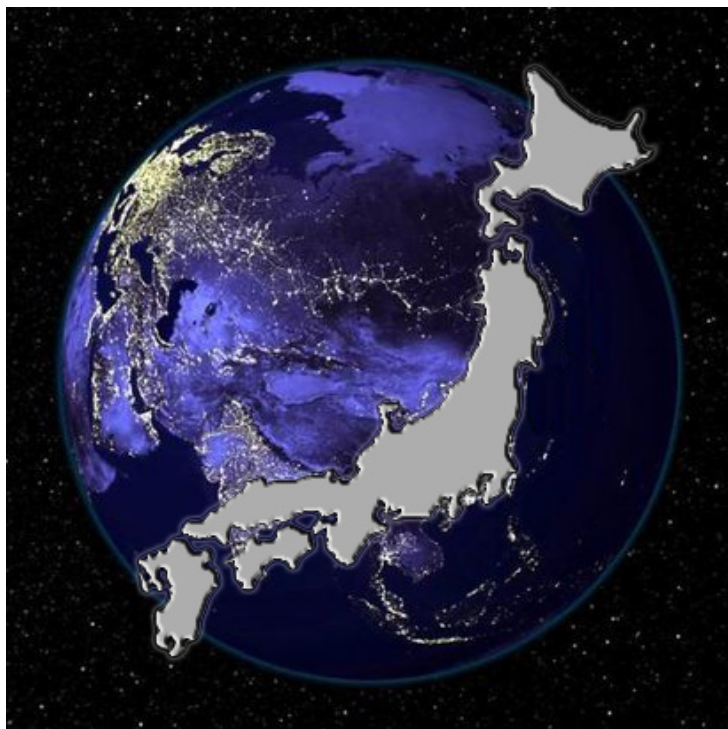
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**See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.**

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#### Recent reports on the banking industry

Lead analyst	Region/Country	Date	Links
Hironari Nozaki	Japan	9/11/2012	<a href="#">Japanese Banks in a Global Context: Is the equity market undervaluing the sector?</a>
Hironari Nozaki	Japan	6/19/2013	<a href="#">Financial sector outlook-Summer 2013: Market too fixated on yield curve risk?</a>
Ronit Ghose	Global	6/26/2013	<a href="#">The 3 Rs of Global Banking: Global Banks Analyst Day, 2013</a>
Ronit Ghose	Global	6/28/2013	<a href="#">The 3Rs of Global Banking: Global Banks Insights</a>
Ronit Ghose	Global	8/8/2013	<a href="#">In Banking, Boring is Beautiful: Operational Excellence and Best-In-Class Costs In DM Banking: Nordics Catch Up With Australia, North America Lags</a>
Ronit Ghose	Global	9/2/2013	<a href="#">In Banking, Boring Is Beautiful - Part II: Dividend Kings</a>

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#### Japan in a Global Context reports

Lead analyst	Region/Country	Date	Links
Hironari Nozaki	Japan	9/30/2011	<a href="#">Japanese Banks in a Global Context - Are Japanese banks attractive?</a>
Graeme McDonald	Japan	10/27/2011	<a href="#">Japanese Industrials in a Global Context - Can the success story continue?</a>
Arifumi Yoshida	Japan	11/24/2011	<a href="#">Japanese Auto Parts in a Global Context - Strong competitiveness and greater independence bring longer-term opportunities</a>
Takao Kanai	Japan	1/12/2012	<a href="#">Japanese Chemicals in a Global Context - Japan's chemical firms accelerating tech-driven global push</a>
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Hironari Nozaki	Japan	9/11/2012	<a href="#">Japanese Banks in a Global Context: Is the equity market undervaluing the sector?</a>
Atsushi Ikeda	Japan	10/12/2012	<a href="#">Toray Industries (3402) - Sticking to its knitting: Toray in a Global Context</a>
Kota Ezawa	Japan	12/3/2012	<a href="#">Japanese Consumer Electronics: Global Context Redux - Device explosion: The digital convergence cliff</a>
Tsubasa Sasaki	Japan	2/27/2013	<a href="#">Japanese Med Tech in a Global Context - Can Japan's med tech Davids take on the global Goliaths?</a>
Tsubasa Sasaki	Japan	7/17/2013	<a href="#">Home Appliances in a Global Context - The appliance of science: Making money from the mundane</a>

Source: Citi Research.

## Executive Summary

- **Adjusting market valuations** — Although Japanese banks continue to post strong earnings, share price performance has not necessarily matched this. We believe one reason is earnings quality. In our view, generating highly stable earnings rather than gains from the sale of marketable securities or tax effect benefits is what will turn the tide for share prices. Given the current operating environment we believe earnings quality is set to improve at major Japanese banks.
- **Earnings quality and valuations** — In this report we analyze the relationship between bank earnings and valuations. Based on the hypothesis derived from this analysis we estimate share price performance going forward using our outlook for earnings structure and the valuations this suggests are appropriate.
- **Global financials post-Lehman** — We also provide an overview of how the global financial sector got to its current positioning in the aftermath of the Lehman Brothers failure from the perspective of changes in fundamentals and share prices. Regionally, North American banks stand out in terms of level of improvement, with Japan next.
- **RoE improvement and earnings stability** — A look at RoE and earnings stability globally suggests that recovery for Japanese banks is starting to appear in both absolute RoE and earnings stability. We do not believe the market has priced this in fully.
- **Overseas strategy presents opportunities** — Opportunities for Japanese banks to participate in overseas business continue to increase given abundant liquidity and stable credit ratings both in Japan and abroad. We think it a rational move to break away from excessive competition in Japan and look to increase profitability overseas. We look in particular at opportunities to grow earnings in consumer finance in Asia.

# I. Earnings quality and valuation

## 1. Earnings quality and share price formation

### (1) Debate over earnings quality

#### Difficulty faced by Japanese bank analysts

Does correctly forecasting earnings improve the quality of stock recommendations to a reliable degree?

Japanese bank analysts may not have a ready answer for this question. When sentiment is depressed, the market will often ignore earnings that beat expectations, and even if there is an initial positive effect it is often short-lived.

Figure 1 compares megabanks' actual earnings for FY3/13 and guidance FY3/14 with consensus estimates. Both actual and targeted earnings at each of the megabanks beat the consensus. But MUFG, which exceeded the consensus for FY3/13 earnings by the widest margin, saw its shares lag behind those of other banks and the broader market as well (Figure 2).

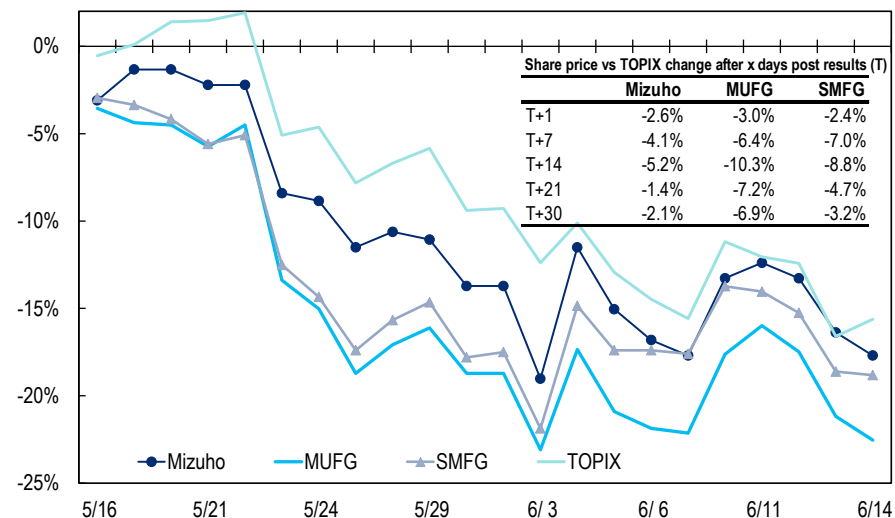
Some market participants explain this by citing the large boost to MUFG's FY3/13 earnings from reversals of loan-loss provisions and gains on the sale of securities.

Figure 1. FY3/13 results and FY3/14 plans vs. consensus as of the May 2013 earnings announcements

	FY3/13 NP results	FY3/13 NP IFIS Consensus	Outperformance to Consensus	FY3/14 NP CoE	FY3/14 NP IFIS Consensus	Outperformance to Consensus
Mizuho	560.5	544.4	3.0%	500	467.069	7.1%
MUFG	852.6	736.5	15.8%	760	730.866	4.0%
SMFG	794.1	730.3	8.7%	580	544.247	6.6%

Source: Company data, IFIS, Citi Research.

Figure 2. Share prices after release of FY3/13 results



Source: Citi Research.

When higher earnings at Japanese banks are partly attributable to such factors, the market typically treats them as one-off events and ignores them.

In contrast, when the earnings of Western financial institutions beat the consensus, share prices tend to reflect that immediately—even when the contributing factors, such as debt valuation adjustments (DVAs), are not based on an increase in economic value.

DVAs are part of fair value accounting and tend to lift earnings when a company's creditworthiness diminishes. While it is true that such firms would secure an economic benefit by buying back bonds or other debt at a discount and retiring them, companies experiencing a sharp rise in CDS spreads typically do not have the funds needed to do so. The booking of profits from DVAs is therefore an extremely hypothetical undertaking.

Reversals of loan-loss provisions and gains on the sale of securities, on the other hand, are not at all hypothetical: the former are driven by improvements in economic benefits, and the latter are trading profits that have been realized. We therefore see no justification for taking a negative view of MUFG's FY3/13 results.

Focusing on this difference in perspectives, a global comparison of bank valuations reveals certain characteristics of price formation for Japanese bank shares. We attempted to analyze which components of earnings the market responds to, with an emphasis on Japanese bank shares.

### **Defining earnings quality**

Our experience has been that the stock market does not necessarily price in strong bank earnings. This tendency is particularly evident when gains from the sale of bonds or stocks have contributed to profits. We conducted a statistical investigation of the relationship between share valuations and 1) consolidated NP and 2) individual components of earnings.

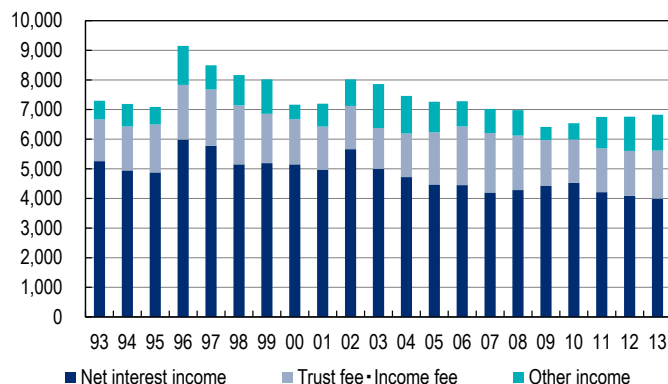
Earnings components deemed to be of high quality include interest income, trust fees, and fees and commissions income. Transactions funded by equity issued in private placements are recorded as interest income, but the only recurring component is the spread between what banks pay for deposits and other sources of funding and what they earn on loans and other investments. In addition, most trust fees and fees and commissions income represent compensation for the management of customer assets, the sale of financial products, and other services related to financial transactions. They are considered high-quality sources of revenue because they can be booked without consuming any economic capital. In this report "core gross profit" is defined as the sum of interest income, trust fees, and fees and commissions income.

### **Changes in banks' earnings components**

An analysis of the components of gross operating profit at the large banks and regional banks over time shows that large banks have experienced a long-term decline in gross profit (Figure 3). Although gross profit has recovered somewhat since bottoming in 2008, interest income and fees and commissions income have been flat. Profit levels at regional banks (Figure 4) have been relatively high over the last 15 years or so, driven by growth in fees and commissions and other operating income.

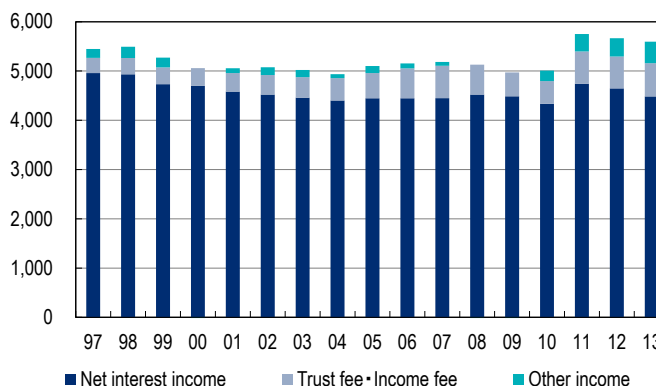
The core gross profit ratio has declined over the last 15 years, falling from 87% to 82% at large banks and from 96% to 92% at regional lenders.

Figure 3. Changing components of gross operating profit at large banks (¥bn)



Source: Company data, Citi Research.

Figure 4. Changing components of gross operating profit at regional banks (¥bn)



Source: Japanese Bankers Association, Citi Research.

## (2) Correlations at Japanese banks

### Time-series analysis

We analyzed the relationships between valuation and 1) key earnings indicators and 2) market indicators such as interest rates and share prices, based on quarterly data for a 10-year period starting in 2003.

Before designing individual regression models, we conducted a broad overview of correlations between the indicators. Figure 5 is a correlation matrix based on quarterly data, and Figure 6 shows key descriptive statistics for the various indicators. Readers should note the high coefficient of variation for credit costs and consolidated NP. These two variables are particularly volatile, and a dummy may be required if they are to be incorporated in the model.

Figure 5. Correlation matrix for large banks (quarterly data from Q1 2003 to Q2 2013)

	PBR	Core profits	Gross profits	Fee revenues	NP	Core profit ratio	Credit cost	10Y JGB yield	TOPIX	TOPIX PBR
PBR	1									
Core profits	0.359	1								
Gross profits	0.202	0.589	1							
Fee revenues	0.343	0.468	0.100	1						
NP	0.167	-0.379	-0.301	0.337	1					
Core profit ratio	0.130	0.389	-0.510	0.352	-0.092	1				
Credit cost	-0.055	0.390	0.280	-0.354	-0.863	0.115	1			
10Y JGB yield	0.619	0.258	-0.124	0.252	0.184	0.392	-0.109	1		
TOPIX	0.779	0.323	0.059	0.559	0.335	0.242	-0.251	0.766	1	
TOPIX PBR	0.899	0.444	0.232	0.429	0.207	0.178	-0.059	0.717	0.908	1

Source: Citi Research.

Figure 6. Descriptive statistics for earnings indicators

	# of Data points	Average	Median	Maximum	Minimum	Standard deviation	Coefficient of variance (average/sigma)
PBR (x)	46	1.53	1.31	3.16	0.62	0.75	49%
Core profits	46	1,511.7	1,491.8	1,821.5	1,253.7	135.4	9%
Gross profits	46	1,754.9	1,779.1	2,043.8	1,344.9	162.6	9%
Fee revenues	46	324.9	318.4	499.6	210.6	71.1	22%
Consolidated NP	46	203.6	428.6	1,097.6	-2,309.4	806.0	396%
Core profit ratio	46	0.86	0.86	1.11	0.70	0.08	9%
Credit cost	46	0.41%	0.24%	2.73%	-0.23%	0.61%	151%
10Y JGB yield	46	1.27%	1.30%	1.91%	0.55%	0.33%	26%
TOPIX	46	1,107.7	1,029.8	1,774.9	728.6	313.2	28%
TOPIX PBR	46	1.42	1.34	2.33	0.88	0.37	26%

Note: Core profits, gross profits, fee revenues, and consolidated NP in ¥bn; figures for PBR and TOPIX PBR are multiples.  
Source: Citi Research.

## Evaluating correlations

The correlation matrix reveals two characteristics.

First, bank valuations exhibit a high correlation with TOPIX and the TOPIX PBR, which indicates—as would be expected—that the market environment influences bank share prices. Valuations also demonstrate a high correlation with the 10-year JGB yield. We think this indicates that shares are pricing in expectations that a widening of the spread between short- and long-term interest rates will spur a recovery in bank earnings.

Second, PBR and RoE should exhibit a stable and high positive correlation for a given cost of capital. However, the correlation with consolidated net profit is weak, whereas a strong correlation exists with gross profit, and particularly with core gross profit.

We designed our regression models based on these findings.

## 2. Regression models

### (1) Components of valuation

#### Designing models

We built a number of models with bank PBR as the dependent variable and performed a time-series analysis. We used three versions of PBR: one unadjusted, one adjusted for the change in TOPIX, and one adjusted for the change in TOPIX PBR.

Figure 7 summarizes the results of running several regression models to explain bank share valuation. We discovered that a binary variable indicating only whether a bank reported a consolidated net profit or net loss had greater explanatory power than the actual amount of profit. We therefore used a dummy variable set to 1 for a consolidated net profit and 0 for a consolidated net loss.



Figure 7. Regression model and key statistics (no lag)

Dependent Variable	Independent Variables	Correlation Coefficient	Adjusted R <sup>2</sup>	F-stat	Significant Variables (99%)
PBR	Core Profits, 10Y JGB	0.715	0.489	22.54	Core Profits, 10Y JGB
	Core Profits, 10Y JGB, NP Dummy	0.716	0.477	14.69	Core Profits, 10Y JGB
	Core Ratio, 10Y JGB	0.618	0.422	17.12	10Y JGB
	Core Ratio, 10Y JGB, NP Dummy	0.619	0.413	13.38	10Y JGB
TOPIX adj. PBR	Core Profits, 10Y JGB	0.493	0.208	6.91	Core Profits, 10Y JGB
	Core Profits, 10Y JGB, NP Dummy	0.554	0.218	6.21	10Y JGB
	Core Ratio, 10Y JGB	0.455	0.170	5.62	10Y JGB
	Core Ratio, 10Y JGB, NP Dummy	0.564	0.211	6.53	10Y JGB
TOPIX PBR adj. PBR	Core Profits, 10Y JGB	0.592	0.328	11.62	10Y JGB
	Core Profits, 10Y JGB, NP Dummy	0.645	0.374	10.94	10Y JGB
	Core Ratio, 10Y JGB	0.579	0.304	10.82	10Y JGB
	Core Ratio, 10Y JGB, NP Dummy	0.612	0.334	10.36	10Y JGB

Source: Citi Research.

Figure 8. Regression model and key statistics (lagged two quarters)

Dependent Variable	Independent Variables	Correlation Coefficient	Adjusted R <sup>2</sup>	F-stat	Significant Variables (99%)
PBR	Core Profits, 10Y JGB	0.762	0.559	28.30	Core Profits, 10Y JGB
	Core Profits, 10Y JGB, NP Dummy	0.767	0.550	19.14	Core Profits, 10Y JGB
	Core Ratio, 10Y JGB	0.693	0.468	22.41	10Y JGB
	Core Ratio, 10Y JGB, NP Dummy	0.713	0.494	15.41	10Y JGB
TOPIX adj. PBR	Core Profits, 10Y JGB	0.585	0.311	10.68	Core Profits, 10Y JGB
	Core Profits, 10Y JGB, NP Dummy	0.624	0.344	8.54	10Y JGB
	Core Ratio, 10Y JGB	0.501	0.215	6.87	10Y JGB
	Core Ratio, 10Y JGB, NP Dummy	0.586	0.294	6.97	10Y JGB
TOPIX PBR adj. PBR	Core Profits, 10Y JGB	0.661	0.410	15.94	10Y JGB
	Core Profits, 10Y JGB, NP Dummy	0.688	0.434	12.00	10Y JGB
	Core Ratio, 10Y JGB	0.613	0.345	12.32	10Y JGB
	Core Ratio, 10Y JGB, NP Dummy	0.668	0.404	10.75	10Y JGB

Source: Citi Research.

We used a regression model with a lag based on the assumption the market takes into account expected earnings over the next several years when forming current valuations. We found that a model with a two-quarter lag had a good fit. Our findings are summarized in Figure 8.

### Variables with high explanatory power

Contrary to our initial expectations, the regression model with the greatest explanatory power was the one using PBR data unadjusted for TOPIX or TOPIX PBR, which reflect the broader market environment.

We also found that the level of core gross profit had greater explanatory power than 1) gross profit or 2) the core gross profit ratio.

Correlation coefficients indicate that explanatory power improves slightly when the independent variables include a net loss dummy variable in addition to core gross profit and the 10-year JGB yield. When adjusted for degrees of freedom, however, explanatory power was not necessarily that high, so we omitted the dummy and concluded that a multiple regression model using two independent variables was more reliable.

Overall, a strong positive correlation can be observed between JGB yields and bank valuations. Model sophistication improved when core gross profit was added.

We will now complete a regression model for estimating valuations based on these findings.

## (2) Estimating valuation using core gross profit and long-term interest rates

### Model

The following equation is thought to be the most appropriate given the findings of the statistical analysis presented above (t-stats in parentheses):

$$\text{PBR} = -14.45 + 1.928 * \ln(\text{two-quarter-lagged core gross profit}) + 150.787 * 10\text{yr JGB yield}$$

(2.09) (6.45)

$$R = 0.762, R^2 = 0.580, \text{adjusted } R^2 = 0.559$$

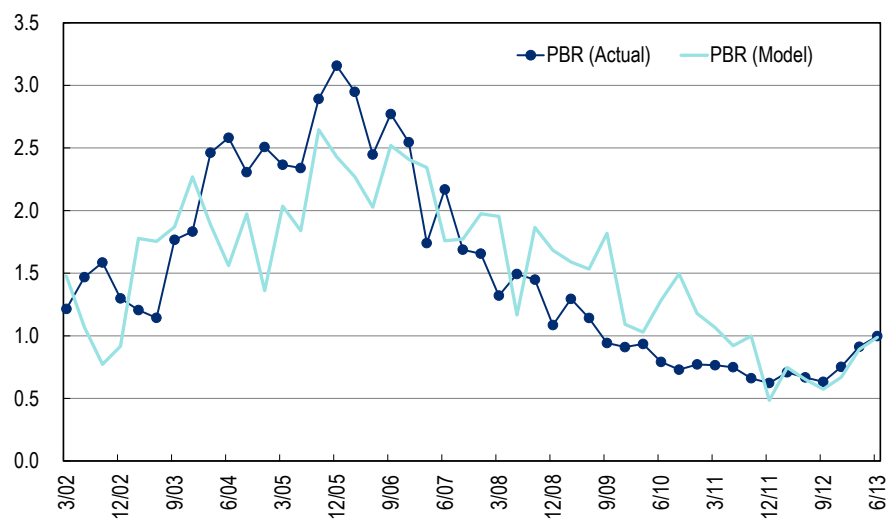
Incidentally, the p-values for core gross profit and the JGB yield were an extremely significant 0.042 and 0.001, respectively.

### Verifying model with historical valuations

The graph in Figure 9 illustrates this model's fit with historical data.

There were significant deviations during the sharp rise in share prices driven by the Koizumi reforms of 2005 and 2006 and again during the period from H2 2008 to the beginning of 2011, when the megabanks were raising fresh capital in the wake of the global financial crisis. In general, however, we think the model captures the trend.

Figure 9. Back-testing the regression model



Note: For the March and June 2013 estimates, we calculated core gross profit for Q2 and Q3 FY13 based on the YoY change in FY13 Q1.  
Source: Citi Research.

### 3. Forecasting share prices using earnings quality model

#### (1) Valuations correspond to earnings quality

##### Basic approach

Based on the results described above, we conclude that the valuation process for bank shares hinged on core gross profit and changes in the earnings environment as indicated by long-term interest rates. How should this empirical finding be interpreted?

If we assume share price formation is influenced not by the level of earnings but rather by the make-up of those earnings, share price can be expressed as follows:

$$\text{Share price (market cap)} = \sum A(i) * (1 - t) * m(i) * M$$

where  $A(i)$  is the  $i$ th component of earnings,  $t$  is the effective tax rate,  $m(i)$  is the PER corresponding to the quality of the  $i$ th earnings component, and  $M$  is an adjustment for market sentiment.

Here we assume that high earnings quality would cause the shares to be assigned a high PER, thereby increasing market cap, while earnings heavily dependent on one-off factors would be given a lower PER and therefore not contribute to market cap.

In addition, PERs hinge on the implied cost of equity and therefore tend to be heavily influenced by market sentiment, which is reflected in an adjustment factor  $M$ .

(For more on the impact of market sentiment on valuations, see our February 18, 2013 report [Bank sector: Where might a bubble start? - Where is the comfort zone for major bank share prices?](#))

##### Verifying the hypothesis

While the discussion above maybe easy to understand in theory, it is difficult to verify the hypothesis and create a model based thereon. At the very least, however, we wanted to verify that core profit has a greater impact on valuation than other measures of earnings. We therefore used the following procedure to demonstrate the relationship between earnings quality and valuation.

##### Tag earnings quality

We broke down bank earnings into the following components: core gross profit, non-core gross profit, overhead costs, credit costs, stock-related gains and losses, miscellaneous gains and losses, and the tax effect. We used the same definition for core gross profit and non-core gross profit. The tax effect was defined as any deviation from the standard effective tax rate of 40%.

##### Assign PERs to earnings components and estimate provisional market cap

We provisionally assigned arbitrary values to the PERs for each earnings component and then calculated market capitalization. Fiscal years in which the bank reported a net loss were omitted.

### Minimize residual sum of squares

We used the least-squares method, minimizing the residual sum of squares between bank market caps calculated as described above and actual year-end market caps for 10 fiscal years starting in FY03. However, given 1) the small sample size for the earnings components and 2) the objective of this analysis, which was to confirm whether the PERs for individual components were relatively high or low, we derived a simpler combination of PERs that provided a good fit to the data, taking into account the characteristics of individual components.

This process indicated that our hypothesis is supported by more detailed data when core gross profit is assigned a higher PER than other earnings components.

### Verification results

Figure 10 shows the combination of PERs that mostly minimizes the residual sum of squares for the large banks. Figure 11 shows the error resulting when this assumption was made.

When the PERs were set so that the market caps generated by the model most closely approximated actual market caps, core gross profit and overhead costs were assigned much higher PERs than other earnings components at most banks (Figure 10). The high readings for these two components imply that core net operating profit is strongly emphasized in the share price formation process.

However, the error shown in Figure 11 is quite large. As we noted above, shifts in market sentiment cause sharp deviations in the underlying cost of equity, and as a result significant disparities emerge when uniform PERs are applied.

Figure 10. PERs for individual earnings components

	Core Profits	Non-Core Profits	Expense	Credit cost	Equity gains /losses	Others	DTAs
Mizuho	16.0	5.0	16.0	5.0	5.0	5.0	0.0
MUFG	16.5	5.0	16.5	5.0	5.0	5.0	0.0
SMFG	14.5	4.0	14.5	4.0	4.0	5.0	0.0
Resona	13.0	3.5	13.0	3.5	3.5	2.0	2.0
SMTH	13.5	4.0	13.5	4.0	4.0	4.5	5.0
Shinsei	15.0	10.0	15.0	10.0	10.0	10.0	7.0
Aozora	15.5	4.0	15.5	4.0	4.0	4.0	3.0

Source: Citi Research.

Figure 11. Gap between actual and estimated market cap based on PERs for individual earnings components

	3/04	3/05	3/06	3/07	3/08	3/09	3/10	3/11	3/12	3/13
Mizuho	1%	9%	-31%	-26%	16%	NA	62%	67%	59%	14%
MUFG	-19%	NA	-2%	-23%	-9%	NA	11%	25%	89%	22%
SMFG	6%	NA	-33%	-31%	3%	NA	18%	36%	34%	-2%
Resona	NA	16%	-37%	1%	40%	30%	22%	84%	109%	63%
SMTH	-2%	24%	-25%	-12%	27%	NA	10%	25%	32%	-25%
Shinsei	-59%	-18%	-34%	NA	3%	NA	NA	27%	-49%	-35%
Aozora	NA	NA	NA	-49%	-77%	NA	-34%	-27%	-29%	-36%

Source: Citi Research.

## (2) JGB yields and valuation

### Role of JGB yields

Of the two independent variables used in our regression model, we confirmed the relationship between core gross profit and valuation using the hypothesis of assigning PERs to individual earnings components.

Next we considered the role of the other independent variable—JGB yields—in determining bank valuations. Logically, we think JGB yields influence bank share prices via the two channels described below.

#### Impact on future earnings

A rise in JGB yields and widening of the long-short spread will gradually lift bank earnings. We pointed out in our June 19, 2013 report ([Financial sector outlook—Summer 2013 - Market too fixated on yield curve risk?](#)) that the resulting growth in earnings exceeds bond portfolio losses from higher interest rates.

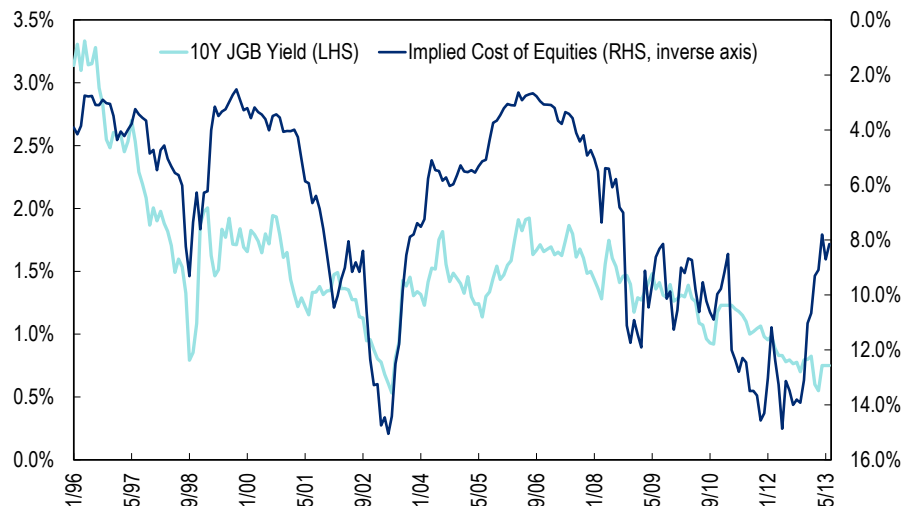
#### Yields as proxy for market momentum

In general, stock market sentiment rallies and the cost of equity declines when business confidence picks up and the macroeconomic outlook improves. Long-term interest rates tend to rise when that happens. One would expect the cost of equity, which consists of the risk-free rate and the equity risk premium, to rise as well, but the increase is more than offset by a decline in the equity risk premium, producing a negative correlation between long-term interest rates and the cost of equity.

### Strong correlation between yields and valuation

As noted in the preceding section, a negative correlation exists between the 10-year JGB yield and the implied cost of equity ( $R = 0.84$ ,  $R^2 = 0.71$ ). This can be confirmed from Figure 12.

Figure 12. JGB yields and large bank valuation



Source: Citi Research.

### (3) Implications of model

In summary, the economic implications of our regression model based on core gross profit and interest rates are as follows.

First, the market takes the quality of earnings into account when forming share prices. This was also confirmed from the model that assigned PERs to individual earnings components.

Second, JGB yields reflect market momentum, and an increase in JGB yields hints at an increase in valuation levels. Higher yields can also be interpreted as the market's expectation that a widening spread between long- and short-term rates will boost bank earnings.

Now that we have demonstrated the reliability of this model, we will use it to forecast the outlook for share prices.

### (4) Estimated share price outlook

#### Individual bank models

We derived models for individual banks based on earnings quality and interest rates. Figures 13 and 14 show our earnings forecasts for each bank along with the results of the regressions.

Figure 13. Our forecasts for earnings and BPS (gross profit in ¥bn, BPS in ¥)

	Core Profits Citi Est (FY3/14)	Core Profits Citi Est (FY3/15)	Core Profits Citi Est (FY3/16)	BPS Citi Est (FY3/14)	BPS Citi Est (FY3/15)	BPS Citi Est (FY3/16)
Mizuho	1,411.5	1,486.7	1,548.9	222.8	238.8	256.1
MUFG	1,984.6	2,107.5	2,196.6	779.3	819.6	862.3
SMFG	1,376.7	1,470.9	1,580.6	4,585.3	4,945.7	5,344.1
Resona	553.9	586.7	618.6	474.5	507.3	545.7
SMTH	412.3	430.3	461.0	469.1	472.8	510.0
Shinsei	97.9	103.3	107.9	258.5	281.5	306.9
Aozora	58.0	63.0	67.0	268.6	361.9	375.1

Note: BPS forecasts for Resona and Aozora assume preferred shares issued to government will be bought back at issue price and retired.  
Source: Citi Research.

Figure 14. Regression results and estimates (PBRs are multiples, share prices in ¥)

	Model Intercept	Model Coefficient of Core Profits	Model Coefficient of JGB Yield	Model Correlation Coefficient	Model PBR (FY3/14)	Model PBR (FY3/15)	Model PBR (FY3/16)	Model Share Price (FY3/14)	Model Share Price (FY3/15)	Model Share Price (FY3/16)
Mizuho	-11.54	1.49	200.00	0.704	1.07	1.14	1.20	238	273	308
MUFG	-8.80	1.11	136.19	0.745	0.85	0.92	0.97	666	755	834
SMFG	-6.78	0.95	100.10	0.672	1.00	1.07	1.13	4,601	5,274	6,065
Resona	-10.16	1.58	150.53	0.645	1.19	1.28	1.37	566	651	746
SMTH	-4.88	0.85	75.00	0.673	0.93	0.96	1.02	434	455	520
Shinsei	-1.55	0.22	141.17	0.352	0.73	0.74	0.75	188	209	230
Aozora	-4.30	1.20	16.34	0.237	0.72	0.82	0.89	193	296	335

Note: We assume 10-year JGB yield of 0.90% from FY13 through FY15.  
Source: Citi Research.

#### Interpretation of estimates and share price direction

A look at the correlation coefficients makes it clear the results for Shinsei and Aozora have little statistical significance. We suspect the decline in earnings

following the global financial crisis and the associated reputational risk have had a greater impact on share price formation than the fundamentals. Accordingly, investors should not read too much into the results for these two institutions. It should also be noted that the two banks' large deferred tax asset valuation reserves mean we would have to adjust BPS sharply higher when assessing net asset value.

Figure 15. Estimated share prices (¥)

	Model PBR (FY3/14)	(Relative to Sector)	(PBR Relative to Sector: last 3 yrs)	Model Share Price (FY3/15)	Relative to 8/31/13 last price	(reference) Citi Target price
Mizuho	1.07	13.3%	5.0%	273	33%	300
MUFG	0.85	-9.2%	-15.3%	755	24%	770
SMFG	1.00	2.6%	2.1%	5,274	17%	6,350
Resona	1.19	14.3%	34.0%	651	32%	590
SMTH	0.93	-1.6%	-4.0%	455	-1%	610
Shinsei	0.73	-22.5%	-27.2%	209	-8%	330
Aozora	0.72	-10.4%	24.2%	296	-1%	320

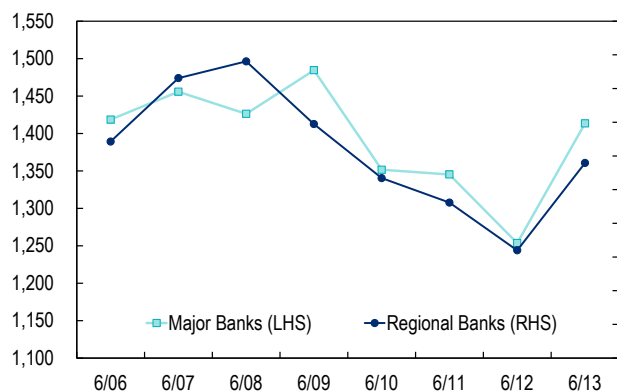
Source: Citi Research.

Our conclusion is that share prices are definitely headed higher. For some stocks there was a significant divergence from our target price, but that is attributable to differences between our own valuation method and the statistical approach based on the hypothesis discussed above.

### Expectations that Abenomics will lift core profit

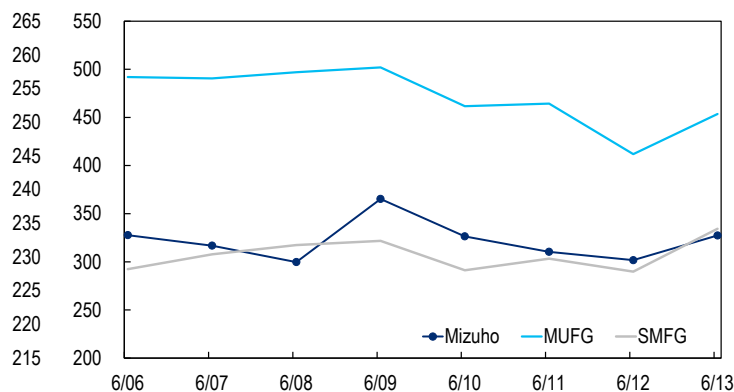
Results for Q1 FY13 indicate that banks' core gross profit is starting to rise. Contributing factors include strong growth in overseas lending, a turnaround in domestic lending, and increased fees and commissions income from the sale of investment trusts and other products.

Figure 16. Core gross profit in first quarter of fiscal year (¥bn)



Note: Figures for regional banks are for all institutions covered by Citi.  
Source: Company data, Citi Research.

Figure 17. Core gross profit in first quarter of fiscal year (¥bn)



Note: FY13 Q1 core gross profit for SMFG excludes stock-related gains and losses component of interest income.  
Source: Company data, Citi Research.

However, we think Abenomics, the government's economic and monetary policy, has yet to affect bank earnings. As we noted in the scenario analysis in our June 19 report [Financial sector outlook—Summer 2013](#), we expect Abenomics will contribute to banks' core gross profit via several channels, including a steepening of the yield curve via inflationary expectations, an increase in lending driven by stronger domestic demand, a pick-up in household investment activity due to an

improved economic outlook, and growth in yen-based earnings overseas fueled by a weaker currency.

Figure 18. Increase in core gross profit from Abenomics, impact on model (gross profit in ¥bn, share prices in ¥)

	Core Profits Citi Est (FY3/14)	Core Profit Growth at 0.5% steepening	Core Profit Growth at 30% pick-up of investment trust sales	Core Profit Growth at 10 yen/% depreciation	Core Profit reflecting those	Model PBR reflecting current core profit forecast	Model PBR reflecting those core profit growth	Model share price reflecting current core profit forecast	Model share price reflecting those core profit growth
Mizuho	1,411.5	28.5	13.8	30.0	1,483.9	1.07	1.14	264	282
MUFG	1,984.6	110.0	25.5	45.0	2,165.1	0.85	0.95	693	771
SMFG	1,376.7	52.0	24.0	35.0	1,487.7	1.00	1.08	5,080	5,454
Resona	553.9	17.3	12.3	0.0	583.4	1.19	1.27	421	450
SMTH	412.3	4.6	16.9	6.0	439.9	0.93	0.98	460	487
Shinsei	97.9	1.4	3.5	0.0	102.8	0.73	0.74	188	191
Aozora	58.0	0.2	0.9	0.0	59.2	0.72	0.74	193	200

Source: Citi Research.

## 4. Core gross profit at global banks

### (1) Application of model to global banks

Share price formation for non-Japanese banks—particularly since the global financial crisis—has been heavily influenced by such factors as regulation, sovereign risk, capital-raising efforts, and concerns about emerging markets. That makes it difficult to explain the share prices of these banks using earnings quality and interest rate levels, both of which are highly significant for Japanese banks.

That said, we think that once the economic and regulatory environments calm down, the share price formation patterns for Japanese banks after they emerged from their two “lost” decades and entered a period of greater stability may offer some hints for banks in other regions.

### (2) Outlook for core gross profit

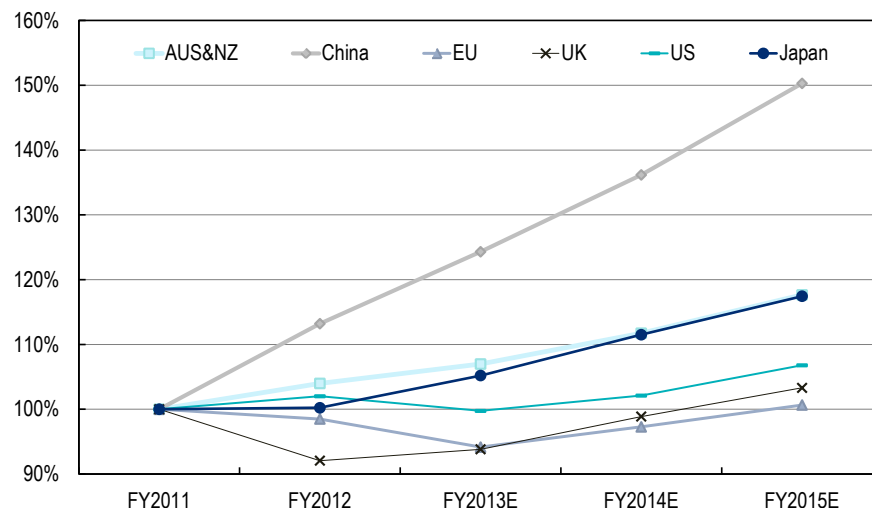
Figure 19 compares actual and forecast core gross profit for banks we cover with a market cap of ¥100bn or more.

The outlook for China’s banks is much brighter than for other regions, despite concerns about a slowing economy and monetary tightening.

We anticipate a slowdown in profit growth at US and European banks through FY13 followed by a moderate recovery. We think Japan’s banks will be quicker to rebound than lenders in other regions.



Figure 19. Core gross profit at key global banks (incl. Citi estimates, FY11 = 100%)



Source: Citi Research.

## 5. Comparison of global valuations

### (1) Valuation changes over time

It is difficult for banks to maintain permanently high valuations in any era or region. There are always ups and downs driven by local economic cycles (and particularly by asset price bubbles), structural problems in the economy, regulation, and other issues.

Figures 20–22 compare the market caps of global banks at the end of 1989, when Japan was at the peak of its bubble and Japanese banks ruled global financial markets, and at end-August 2011 and 2013. The obvious differences between Figures 20 and 21 show just how far Japanese banks have fallen in the 20 “lost” years since the bubble burst while banks in emerging and commodity-driven economies like China, Australia, Russia, and Brazil have risen to the top ranks.

But the rankings have also changed substantially in the two years since 2011. Banks in emerging economies like China, Brazil, and Russia have slipped down the list while US institutions staged a comeback. Japanese lenders have also moved up slightly in the rankings.

Figure 20. Market cap rankings (end-Dec 1989)

Company	Country	MCAP (\$mn)
1 Industrial Bank of Japan	Japan	104,162
2 Sumitomo Bank	Japan	71,932
3 Fuji Bank	Japan	67,810
4 Mitsubishi Bank	Japan	63,603
5 Dai-ichi Kangyo Bank	Japan	62,256
6 Sanwa Bank	Japan	53,592
7 Nomura Securities	Japan	46,751
8 Long-Term Credit Bank Japan	Japan	43,293
9 Tokai Bank	Japan	35,286
10 Mitsui Bank	Japan	34,914
11 Taiyo Kobe Bank	Japan	28,159
12 Mitsubishi Trust & Banking	Japan	27,514
13 Bank of Tokyo	Japan	26,950
14 Sumitomo Trust & Banking	Japan	24,389
15 Tokio Marine & Fire Insurance	Japan	22,239
16 Mitsubishi Estate	Japan	21,995
17 Nippon Credit Bank	Japan	21,879
18 Allianz AG Holding	Germany	21,492
19 Daiwa Securities	Japan	20,791
20 Nikko Securities	Japan	19,480

Source: Citi Research.

Figure 21. Market cap rankings (end-Aug 2011)

Company	Country	MCAP (\$mn)
1 ICBC	China	209,043
2 China Construction Bank	China	177,960
3 HSBC	UK	141,111
4 Wells Fargo	US	130,359
5 Agricultural Bank of China	China	130,306
6 Bank of China	China	129,368
7 JP Morgan Chase	US	127,889
8 Itaú Unibanco	Brazil	75,418
9 Commonwealth Bank	AZ	72,484
10 Bank of America	USA	71,447
11 Banco Santander	Spain	65,336
12 Bradesco	Brazil	63,375
13 Westpac Banking Corp	AZ	60,845
14 MUFG	Japan	60,706
15 Sberbank RF	Russia	58,913
16 Goldman Sachs	US	52,876
17 ANZ	AZ	52,681
18 National Australia Bank	AZ	50,750
19 Standard Chartered	UK	49,728
20 UBS	Switzerland	47,790

Source: Citi Research.

Figure 22. Market cap rankings (end-Aug 2013)

Company	Country	MCAP (\$mn)
1 ICBC	China	239,438
2 Wells Fargo & Co	US	226,993
3 HSBC	UK	206,608
4 JP Morgan Chase	US	200,594
5 China Construction Bank	China	191,841
6 Bank of America Corp	US	154,916
7 Agricultural Bank of China	China	146,603
8 Bank of China	China	120,959
9 Commonwealth Bank	AZ	108,525
10 Westpac Banking Corp	AZ	89,115
11 Mitsubishi UFJ Financial Group	Japan	86,659
12 Banco Santander	Spain	86,050
13 Lloyds Banking Group PLC	UK	85,299
14 BNP Paribas SA	France	84,450
15 UBS	Switzerland	79,625
16 ANZ	AZ	74,213
17 Goldman Sachs	US	72,153
18 US Bancorp	US	67,906
19 National Australia Bank	AZ	67,463
20 Sumitomo Mitsui Financial Group	Japan	62,879

Source: Citi Research.

## (2) Comparison of current valuations

We next conducted a global comparison of bank valuations at end-August 2013.

### PER rankings

First we looked at PERs. Figure 23 lists the cheapest global banks by PER, based on share prices as of end-August 2013 and our estimates of FY13 EPS. Banks in China and other emerging economies dominate the rankings. We think the low valuations (in spite of strong earnings growth) are attributable to market concerns about the earnings outlook for these lenders.

Figure 23. Cheapest banks in PER terms

	Company Name	Region	PER (FY13E)
1	China CITIC Bank	China	4.43
2	Bank of China	China	5.04
3	China Minsheng Bank	China	5.12
4	Bank VTB	Russia	5.27
5	Bank of Communications	China	5.33
6	ABC	China	5.53
7	CCB	China	5.65
8	ICBC	China	5.89
9	China Merchants Bank	China	6.14
10	Banco do Brasil	LatAm	6.39
11	Isbank	Turkey	6.55
12	KBC	Benelux	7.33
13	State Bank of India	India	7.43
14	Barclays PLC	UK	7.55
15	Credit Agricole	France	8.05
16	Garanti Bank	Turkey	8.51
17	Yapi Kredi Bank	Turkey	8.56
18	Deutsche Bank	Germany	8.75
19	JP Morgan Chase	USA	8.81
20	Itaú Unibanco	LatAm	9.19

Note: As of end-August 2013. Banks with market caps of at least \$100bn.  
Source: Citi Research.

#### PBR rankings

Figure 24 lists the cheapest global banks by PBR, based on share prices as of end-August 2013 and our estimates of FY13 BPS. Ordinarily PBRs have to be examined in the context of RoE, but we think this is covered by the PER rankings. This table ignores profitability and looks at the market's evaluation of book value. European banks dominate the top slots, probably reflecting low RoEs and a poor earnings outlook.

Figure 24. Cheapest banks in PBR terms

	Company Name	Region	PBR (FY13E)
1	Commerzbank	Germany	0.36
2	UniCredit Group	Italy	0.45
3	Intesa Sanpaolo	Italy	0.53
4	Credit Agricole SA	France	0.53
5	KB Financial Group	Korea	0.55
6	RBS	UK	0.57
7	Deutsche Bank	Germany	0.59
8	Societe Generale	France	0.62
9	China CITIC Bank	China	0.66
10	Natixis	France	0.67
11	Bank VTB	Russia	0.69
12	Bank of America	USA	0.69
13	Barclays PLC	UK	0.69
14	Shinhan Financial Group	Korea	0.71
15	Mitsubishi UFJ Financial Group	Japan	0.73
16	Bank of Communications	China	0.76
17	BNP Paribas	France	0.78
18	Bank of China	China	0.80
19	Danske Bank	Nordics	0.81
20	Mizuho Financial Group	Japan	0.86

Note: As of end-August 2013. Banks with market caps of at least \$100bn.  
Source: Citi Research.

## PDR rankings

Figure 25 lists the cheapest global banks by price-to-deposit ratio (PDR), based on market cap as of end-August 2013 and deposits outstanding at end-FY12. The higher the ranking, the cheaper the bank is relative to its ability to attract deposits. Japanese banks appear clearly undervalued by this measure. We attribute this to high levels of deposits combined with low market interest rates and correspondingly low income from deposit spreads. If an economic recovery pushes interest rates higher and drives growth in lending, we think the market may reconsider.

**Figure 25. Cheapest banks in PDR (market cap/deposits) terms**

	Company Name	Region	PDR (FY12)
1	Resona Holdings	Japan	0.03
2	Commerzbank	Germany	0.04
3	Credit Agricole SA	France	0.04
4	UniCredit Group	Italy	0.05
5	Mizuho Financial Group	Japan	0.05
6	Deutsche Bank	Germany	0.06
7	Sumitomo Mitsui Trust Holdings	Japan	0.06
8	China CITIC Bank	China	0.07
9	KB Financial Group	Korea	0.07
10	Intesa Sanpaolo	Italy	0.07
11	State Bank of India	India	0.08
12	Societe Generale	France	0.09
13	Bank of Communications	China	0.09
14	Royal Bank of Scotland Group PLC	UK	0.09
15	Barclays PLC	UK	0.09
16	KBC	Benelux	0.09
17	Erste Bank	CEE & Austria	0.09
18	China Merchants Bank	China	0.10
19	China Minsheng Banking	China	0.11
20	Shinhan Financial Group	Korea	0.11

Note: As of end-August 2013. Banks with market caps of at least \$100bn.  
Source: Citi Research.

## Dividend yield rankings

Figure 26 lists global banks with the highest dividend yields, based on share prices as of end-August 2013 and our estimates of FY13 dividends. The rankings are dominated by banks in emerging and commodity-driven economies such as China and Australia, with Aozora the only Japanese bank to make the list.

Figure 26. Banks with highest dividend yields

	Company Name	Region	Yield (FY13E)
1	Banco Santander	Spain	10.31%
2	Banco do Brasil	LatAm	9.02%
3	Bank of China	China	6.98%
4	ABC	China	6.37%
5	CCB	China	6.23%
6	Westpac	AUS&NZ	6.21%
7	Swedbank	Nordics	6.20%
8	ICBC	China	6.08%
9	NAB	AUS&NZ	5.95%
10	China CITIC Bank	China	5.68%
11	Bank of Communications	China	5.66%
12	ANZ	AUS&NZ	5.64%
13	BBVA	Spain	5.49%
14	Santander Brasil	LatAm	5.20%
15	Nordea	Nordics	5.17%
16	Natixis	France	5.00%
17	CBA	AUS&NZ	4.97%
18	China Merchants Bank	China	4.91%
19	Bank Pekao	CEE & Austria	4.72%
20	Aozora Bank	Japan	4.64%

Note: As of end-August 2013. Our universe is banks we cover with market caps of \$100bn or more.  
Source: Citi Research.

### (3) Conclusions

We do not think the market has sufficiently factored in the quality of Japanese banks' earnings and the outlook for recovery. We think valuations could easily improve if investors began focusing more on earnings growth and quality.

In Section II we summarize changes in global bank performance since the global financial crisis, and in Section III we consider ongoing changes in profitability.

## II. Overview of global financial institutions

### 1. Share prices

#### (1) Post-GFC recovery in bank shares

Outside of China and the EU, bank shares are now (July 19, 2013) trading above where they stood just before Lehman Brothers failed (September 12, 2008). In other words, the sector is finally emerging from the aftermath of the global financial crisis.

The recovery has been most pronounced in the US, the epicenter of the global financial crisis, followed by the UK and Japan. In terms of share prices, at least, these three countries have put the crisis behind them.

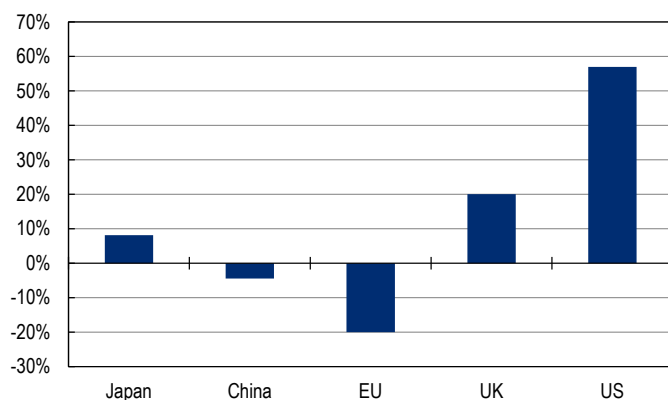
#### (2) Regional performance variations

Chinese bank shares had already recovered to pre-crisis levels in 2012, but in 2013 they have slipped in response to a downturn in the domestic economy.

The European financial crisis, sparked by debt crises in Portugal, Ireland, Italy, Greece, and Spain erupted in 2010, causing share prices to fall before those of other regions. The IMF was brought in to provide support, and share prices entered a gradual uptrend in 2011 as funding concerns began to fade. However, share prices have yet to recover to pre-Lehman levels, in part because of economic and political instability within the EU.

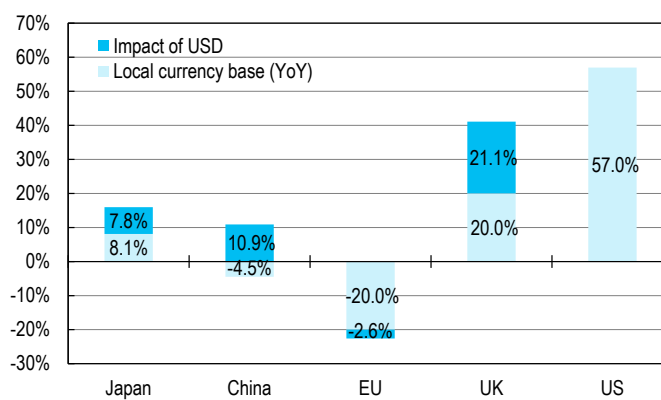
Japanese bank shares experienced the second-largest drop after European lenders through 2012, partly because of the March 2011 earthquake and tsunami. But shares rebounded sharply from the autumn of 2012 as the market began to price in the possibility of an LDP government. Now they have finally recovered to pre-crisis levels. Incidentally, the decline in USD means that in dollar terms Chinese bank shares are also back to pre-Lehman levels.

Figure 27. Change in share prices over pre-Lehman levels (local currency basis)



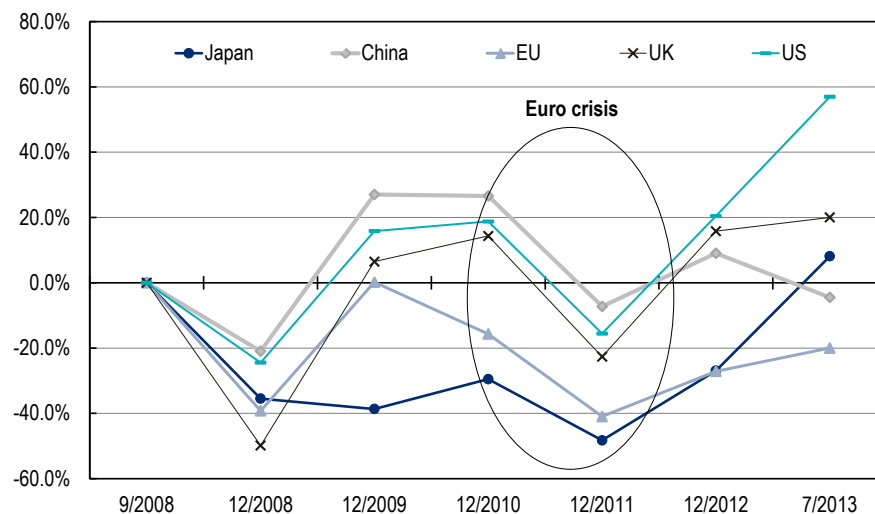
Note: Percentage change as of July 19, 2013.  
Source: Citi Research.

Figure 28. Change in share prices over pre-Lehman levels (USD basis)



Source: Citi Research.

Figure 29. Share prices since Lehman failure (local currency basis)



Source: Citi Research.

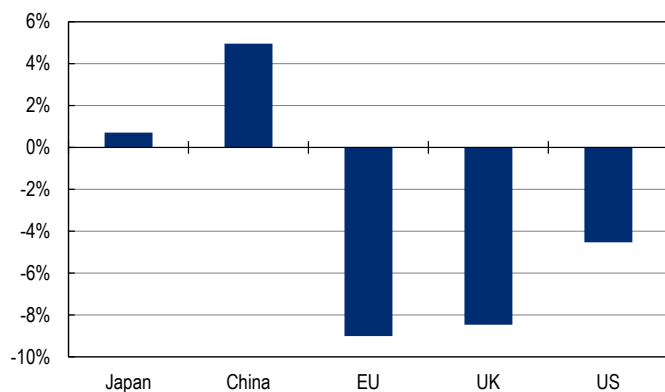
## 2. Changing fundamentals

### (1) Changes in profitability

Changes in earnings indicators have been inversely correlated to changes in share prices. Whereas RoE and RoA have recovered to pre-crisis levels at Chinese and Japanese banks, they remain significantly lower at western lenders. RoEs are down nearly 80% at European banks compared with 2007 and off 40%–50% at institutions in the US and UK. That would seem to suggest that a recovery in share prices is unrelated to a recovery in earnings indicators. See Section 3 for a detailed analysis of changes in RoE by region.

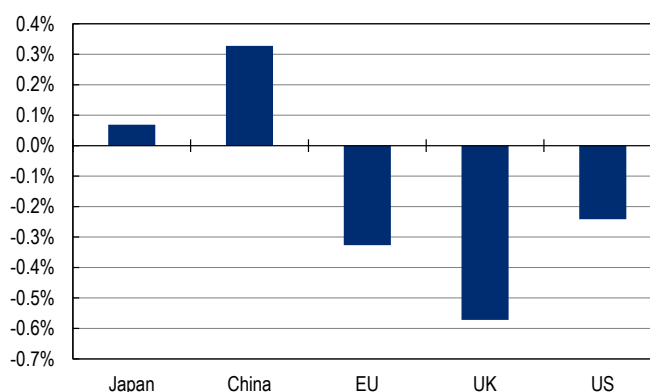
The decline in RoA at European banks was significantly less than the decline in RoE, probably because these institutions have made modest reductions in total assets via asset sales while raising fresh capital to boost shareholders' equity.

Figure 30. Change in bank RoE, FY07 to FY12



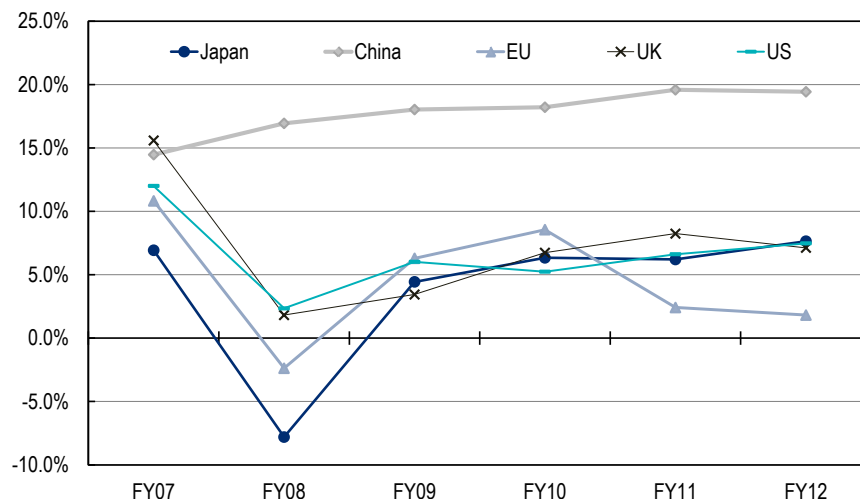
Source: Citi Research.

Figure 31. Change in bank RoA, FY07 to FY12



Source: Citi Research.

Figure 32. Bank RoE, FY07 to FY12



Source: Citi Research.

## (2) Changes in balance sheet items

Figures 33 and 34 show changes in key balance sheet items such as loans, assets, and common shareholders' equity between FY07 and FY12. Outside of China, where it was difficult to obtain the necessary data, common equity grew by an average of more than 70%. Net profits rose 16% at US banks but fell at European and UK banks. It would appear a key reason why RoEs have fallen is that growth in common equity has outpaced growth in net profit.

There has also been marked growth in total assets at banks in China, the US, and the UK. At Chinese lenders the increase is attributable to growth in lending and assets driven by economic expansion, while in the US and the UK it is due more to large acquisitions. Examples include JPMorgan's purchase of Washington Mutual and Bank of America's acquisition of Merrill Lynch in September 2008, while in the UK Lloyds acquired HBOS in January 2009 and Standard Chartered bought American Express Bank in February 2008.

M&A activity in Japan has not been large enough to alter the industry landscape, and as a result there has been no major growth in lending or assets. Factors contributing to higher profits included reduced credit costs as the economy recovers, consolidation of the high-margin operations of consumer finance subsidiaries, and booking of deferred tax assets as profitability recovers.

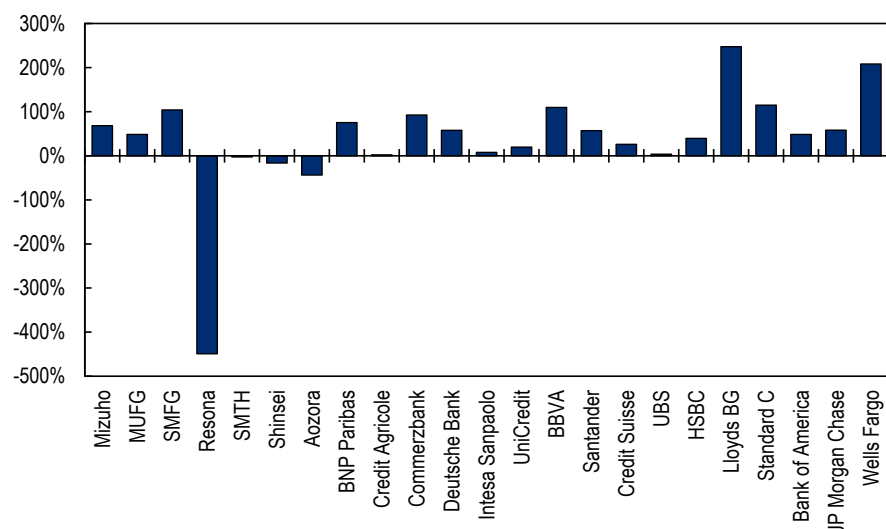


Figure 33. Changes in key financial indicators, FY07–FY12

	Japan	China	EU	UK	US
Share price	8.1%	-4.5%	-20.0%	20.0%	57.0%
Loans	3.5%	166.5%	15.7%	31.2%	37.2%
Deposits	17.8%	140.8%	12.5%	27.2%	84.9%
Total assets	18.2%	143.6%	-1.8%	39.9%	55.5%
Operating revenue	-2.2%	143.2%	3.1%	-6.0%	46.9%
Net interest income	-6.8%	117.4%	47.9%	2.4%	50.8%
Fee income	-5.5%	208.7%	-22.9%	-16.8%	40.3%
Other income	17.5%	-3645.0%	-32.1%	-12.7%	50.5%
Net profit	40.1%	226.3%	-81.1%	-30.5%	16.1%
Credit cost	-0.2%	-0.5%	0.6%	-0.1%	-0.7%
OHR	0.1%	-3.6%	1.9%	9.8%	8.6%
Tier 1 ratio	3.7%	0.1%	5.5%	4.7%	4.8%

Source: Citi Research.

Figure 34. Changes in common shareholders' equity, FY07–FY12

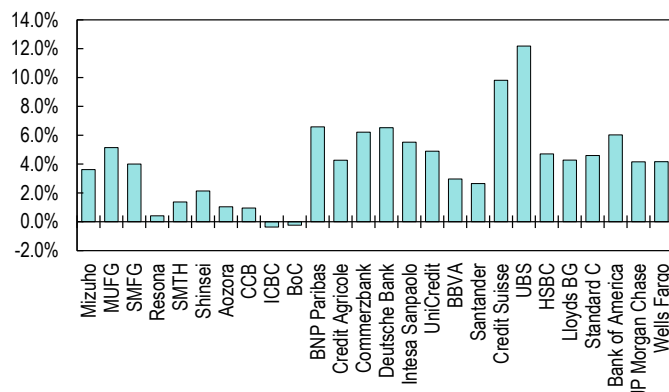


Source: Citi Research.

### (3) Regulatory capital ratios

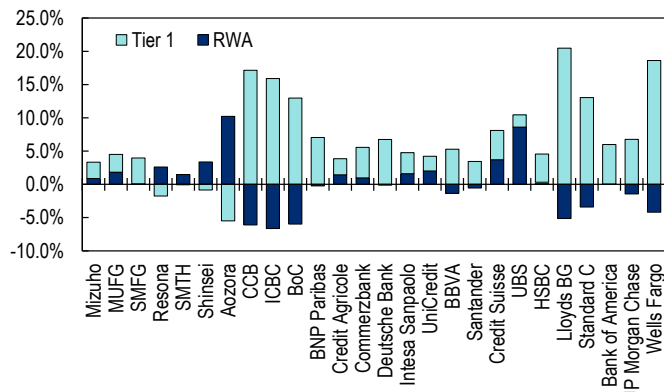
The adoption of Basel III has raised capital requirements (including the capital preservation buffer) to 7% for Common Equity Tier 1 (CET1) capital and 10.5% for Tier 1 capital (versus a required ratio of 8% under Basel II). Many of the world's banks have boosted Tier 1 ratios by issuing fresh capital (Figure 35).

Figure 35. Increase in Tier 1 ratios, FY07 to FY12



Source: Citi Research.

Figure 36. Factor analysis of increase in Tier 1 ratios, FY07 to FY12



Source: Citi Research.

We broke down the improvement in Tier 1 ratios into capital (numerator) and risk assets (denominator), with the results shown in Figure 36. Risk assets have increased at banks in the US and UK because of acquisitions. European financial institutions, meanwhile, sold off non-core assets in response to the European debt crisis, and the resulting reduction in risk assets helped raise Tier 1 ratios.

Risk assets at Japanese banks have decreased as a result of a change in the method used to calculate credit risk weightings (from F-IRB to A-IRB), lower default probabilities, and a decline in lending.

UBS has reported a 13ppt increase in its Tier 1 ratio after slashing risk assets by about 50% since 2007. The bank has classified its investment banking division, previously one of the main drivers of earnings, as a non-core asset and plans to reduce its portfolio of risk assets from €105.0bn at end-March 2013 to just €25.0bn at end-2017.

### 3. Summary

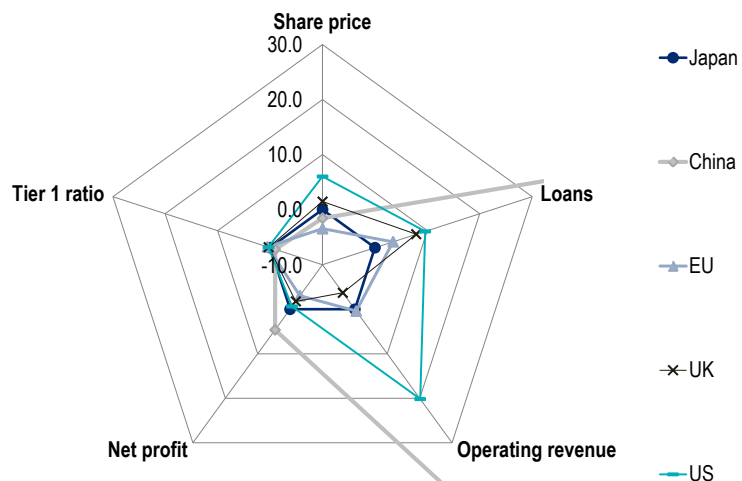
#### Quality over quantity

Figure 38 plots the change in share prices and RoE for banks around the world. Share prices have risen sharply in the US and the UK, where profitability has deteriorated, while share prices have increased only slightly or even fallen in Japan and China despite improved profitability.

Although Japanese banks are characterized by the weakest growth in lending and the lowest top-line growth, we think the market has yet to price in their earnings improvements or rising equity ratios, which have not required the issue of fresh common equity. We also found that Japanese and Chinese banks had far higher “investment efficiency,” defined as the increase in profits relative to the increase in shareholders’ equity and total assets over the last five years, than institutions in other regions. We think the time has come for the market to focus more on the quality of earnings.

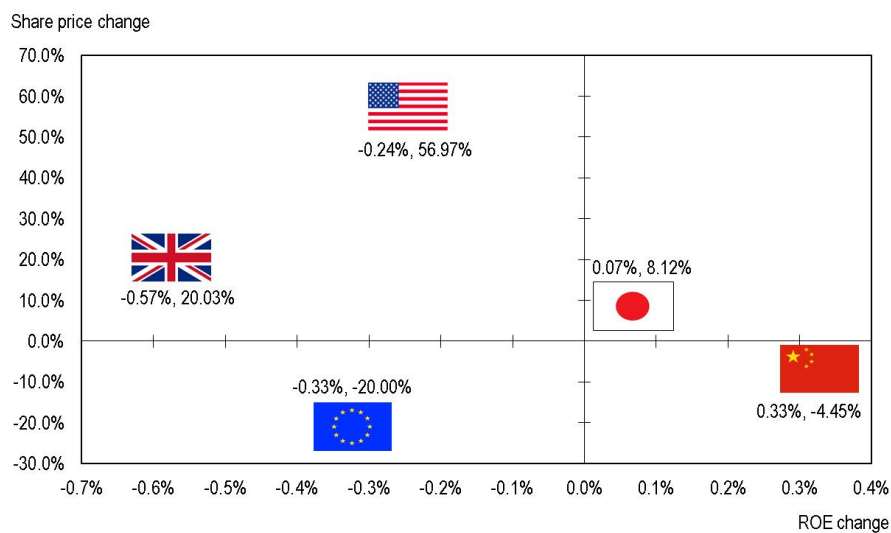
The next section provides a more detailed analysis of RoE trends at global banks.

Figure 37. Key financial indicators



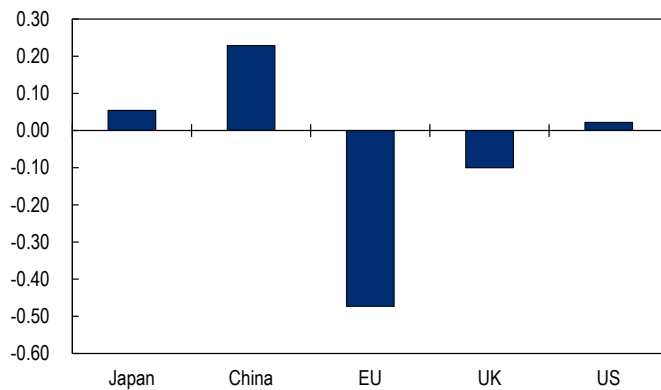
Note: Japan = 0.  
Source: Citi Research.

Figure 38. Share price gains and changes in RoE



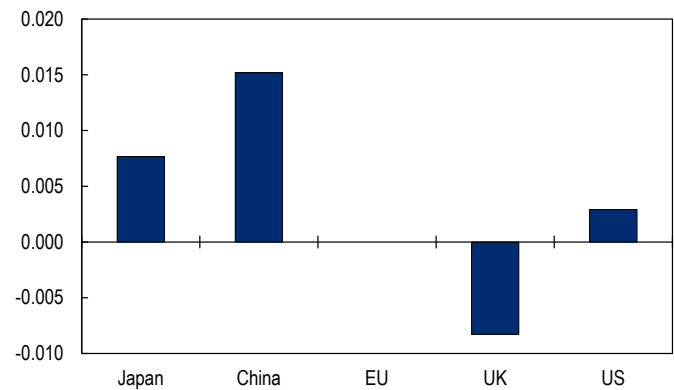
Source: Citi Research.

Figure 39. Comparison of investment efficiency: net profit growth / increase in shareholders' equity



Source: Citi Research.

Figure 40. Comparison of investment efficiency: net profit growth / increase in total assets



Source: Citi Research.

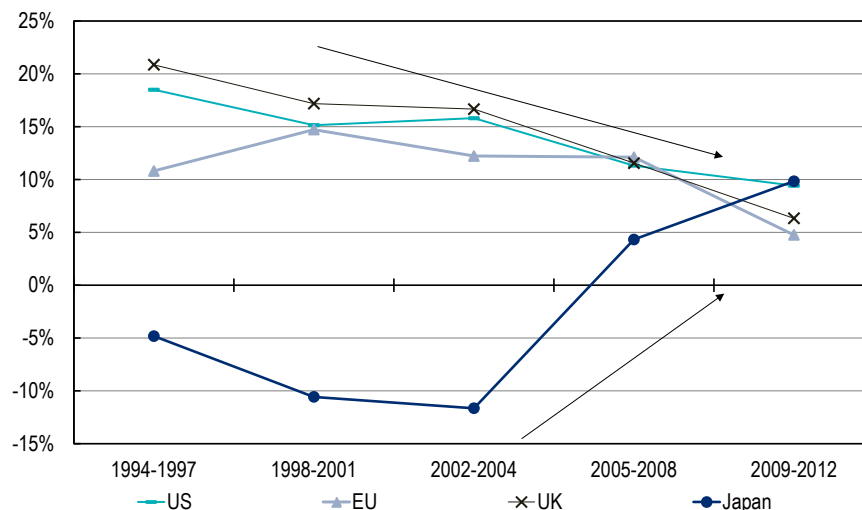
## III. RoE momentum and stability

### 1. Changes in global RoE trends

#### (1) Turning point in bank profitability

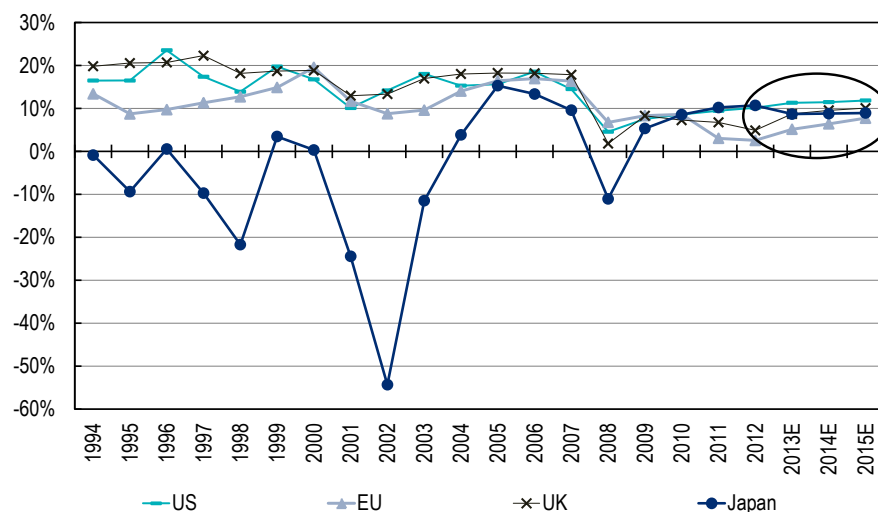
The last 10 years have brought a major change in bank profitability. Figures 41 and 42 illustrate changes in RoE at banks in the main developed economies (Figure 43 lists the banks in the sample group along with individual data points).

Figure 41. RoE at key global banks by region (four-year periods)



Source: Citi Research.

Figure 42. RoE at key global banks by region (annual data)



Source: Citi Research.

Figure 43. RoE at key global banks

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013E	2014E	2015E
Bank of America	13.8%	14.8%	15.7%	15.9%	11.4%	17.4%	16.3%	14.1%	18.7%	21.9%	18.8%	16.3%	17.8%	10.6%	2.5%	3.1%	-1.0%	0.0%	1.3%	4.5%	7.2%	8.0%
BONY Mellon	17.9%	19.2%	19.7%	23.1%	24.6%	32.8%	25.3%	21.5%	13.9%	15.3%	16.3%	16.4%	26.7%	10.0%	4.9%	-3.8%	8.2%	7.5%	7.1%	8.0%	8.3%	9.3%
JP Morgan Chase	12.8%	14.2%	12.7%	15.8%	13.9%	21.4%	14.8%	4.1%	4.0%	15.2%	5.9%	8.0%	13.0%	12.9%	3.9%	7.1%	10.2%	10.1%	10.7%	11.6%	10.9%	11.3%
PNC Financial	15.8%	7.1%	17.0%	18.7%	19.5%	21.1%	20.3%	6.0%	18.7%	14.8%	17.0%	16.5%	26.8%	11.4%	4.4%	8.8%	11.3%	9.5%	8.4%	10.3%	9.3%	10.1%
US Bancorp	na	na	na	14.7%	18.3%	17.0%	18.9%	9.4%	18.2%	19.8%	21.5%	22.7%	23.0%	20.5%	12.4%	8.4%	12.0%	15.9%	16.2%	15.9%	15.3%	15.8%
Wells Fargo	21.0%	20.9%	39.2%	19.3%	10.8%	18.0%	16.0%	12.7%	18.9%	19.1%	19.4%	19.5%	19.5%	17.2%	3.6%	11.6%	10.4%	11.8%	13.0%	13.7%	13.7%	13.7%
BNP Paribas	na	3.7%	7.4%	10.4%	11.6%	13.7%	19.9%	17.3%	12.9%	13.2%	16.8%	16.5%	16.2%	15.1%	5.6%	9.5%	10.9%	8.6%	8.6%	7.3%	8.1%	9.3%
Credit Agricole	na	na	7.5%	8.3%	9.5%	5.3%	9.0%	8.0%	7.0%	5.3%	10.9%	13.7%	15.0%	10.8%	2.5%	2.6%	2.8%	-3.3%	-15.7%	6.4%	6.9%	7.1%
Natixis	na	6.4%	7.3%	4.4%	3.7%	6.7%	8.7%	8.3%	2.9%	6.9%	11.5%	14.0%	8.3%	6.4%	-17.3%	-9.4%	8.3%	8.0%	4.8%	6.3%	7.9%	8.3%
Societe Generale	8.0%	7.4%	8.3%	10.3%	6.9%	21.4%	21.1%	14.6%	8.9%	15.3%	18.6%	21.2%	20.0%	3.4%	6.3%	1.7%	8.8%	5.3%	1.2%	5.9%	7.5%	8.8%
Commerzbank	11.3%	8.2%	9.6%	8.3%	9.5%	8.6%	11.3%	0.8%	-2.9%	-25.9%	3.8%	10.6%	12.0%	13.1%	0.0%	-20.1%	5.3%	4.0%	-1.1%	-0.7%	3.5%	5.2%
Deutsche Bank	na	7.6%	7.7%	3.3%	10.1%	7.9%	40.4%	0.4%	1.1%	4.7%	9.1%	12.6%	19.4%	18.3%	-11.2%	14.8%	5.4%	8.0%	0.5%	5.3%	7.6%	10.3%
BBVA	11.9%	13.4%	15.3%	18.8%	17.0%	18.4%	17.7%	15.7%	11.2%	14.6%	20.8%	25.9%	25.0%	25.3%	19.1%	15.3%	14.1%	8.1%	4.2%	7.7%	6.7%	9.2%
Banco Santander	16.4%	14.2%	13.7%	15.0%	19.8%	18.3%	17.3%	13.7%	11.3%	10.7%	12.1%	16.8%	18.0%	18.1%	15.7%	14.2%	11.4%	7.0%	3.1%	5.3%	7.1%	7.6%
UniCredit	na	3.2%	4.6%	6.9%	4.2%	18.4%	17.2%	16.1%	16.7%	15.7%	15.2%	10.0%	14.8%	12.3%	7.1%	3.0%	2.1%	-10.9%	1.5%	1.4%	2.6%	3.8%
Intesa Sanpaolo	na	7.3%	7.5%	14.1%	13.5%	14.4%	14.1%	6.7%	1.4%	8.4%	12.7%	14.6%	7.4%	20.8%	5.1%	5.5%	5.1%	-16.3%	3.3%	1.9%	3.4%	4.2%
Credit Suisse	na	8.4%	-11.0%	-2.5%	12.3%	15.3%	16.4%	4.1%	-13.4%	2.9%	16.0%	14.9%	26.4%	17.9%	-21.8%	19.3%	14.4%	5.8%	3.9%	10.0%	11.9%	14.1%
UBS	na	7.0%	0.0%	-2.5%	9.4%	19.5%	20.7%	11.3%	8.6%	15.9%	23.2%	36.0%	26.2%	-12.1%	-61.4%	-7.4%	17.2%	9.0%	-5.2%	6.0%	10.1%	13.1%
Barclays	13.6%	13.1%	13.3%	11.0%	17.0%	21.5%	21.1%	16.8%	15.0%	17.4%	20.2%	20.7%	24.6%	20.5%	14.6%	22.4%	7.3%	5.6%	-1.2%	4.9%	10.0%	10.5%
HSBC	20.5%	20.6%	20.8%	20.7%	15.9%	17.8%	16.4%	10.9%	12.7%	13.9%	16.1%	16.9%	15.7%	16.2%	5.2%	5.3%	9.5%	11.1%	8.4%	10.8%	10.1%	10.6%
Lloyds Banking	na	na	na	41.2%	30.9%	31.3%	29.1%	21.9%	19.6%	37.0%	23.1%	23.5%	26.3%	28.2%	7.2%	10.7%	-0.7%	-6.1%	5.5%	6.9%	8.2%	10.0%
RBS	na	na	na	na	na	na	na	na	11.4%	15.0%	17.0%	15.9%	16.9%	16.2%	-42.2%	-3.8%	-1.3%	-3.1%	-9.1%	2.8%	5.0%	5.2%
Standard Chartered	22.9%	26.2%	26.2%	23.3%	17.3%	11.0%	17.4%	10.0%	11.4%	13.8%	19.0%	18.5%	15.9%	15.1%	15.1%	13.7%	13.2%	12.1%	11.1%	12.2%	12.3%	12.3%
Mizuho	1.1%	-7.5%	-0.9%	-13.8%	-22.3%	3.3%	3.4%	-20.6%	-83.1%	11.2%	16.1%	13.5%	12.6%	8.0%	-27.6%	6.8%	9.5%	9.9%	10.8%	9.4%	9.5%	9.3%
MUFG	1.0%	-8.1%	1.5%	-9.6%	-15.9%	4.0%	-3.7%	-24.4%	-15.7%	2.7%	-3.6%	15.3%	10.3%	8.1%	-3.8%	4.2%	6.5%	9.8%	8.1%	6.6%	7.0%	7.0%
SMFG	-7.0%	-3.9%	1.4%	-10.0%	-26.7%	3.1%	3.3%	-9.1%	-19.2%	10.8%	-8.4%	15.4%	11.3%	12.9%	-15.1%	5.5%	9.3%	10.0%	14.0%	9.6%	9.9%	9.3%
Resona	1.2%	-11.8%	-1.0%	-6.0%	-19.5%	2.7%	-1.4%	-72.3%	-269%	-205%	30.8%	23.1%	36.7%	12.7%	6.0%	6.2%	10.8%	14.6%	15.3%	8.0%	7.9%	8.3%
SMTH	1.2%	-35.4%	-0.4%	-1.5%	-35.5%	3.4%	4.2%	-27.7%	-19.3%	10.3%	12.6%	11.1%	9.7%	7.9%	-6.1%	5.5%	10.9%	9.0%	7.8%	8.4%	9.0%	8.7%

Note: Regional RoEs in Figures 41 and 42 are based on data in this table and are averages weighted for market cap at end-August 2013. Forecasts for FY13–FY15 are by Citi Research.

Source: Company data, Citi Research.

The four-year averages in the first chart clearly illustrate the trend. Profitability at US and European banks, which had consistently been reporting RoEs in the 15%–20% range, and Japanese banks, where profit growth was sluggish and net losses common, has tended to converge since the global financial crisis.

## (2) Drivers of change

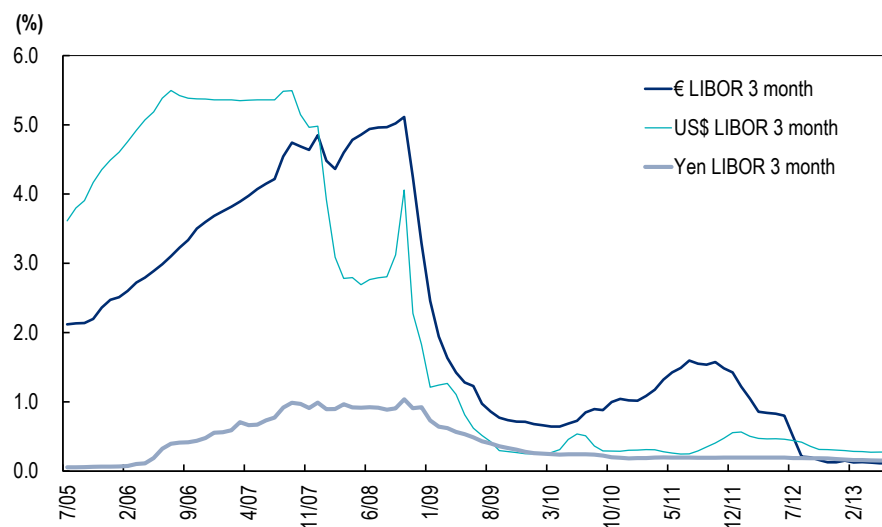
### Low interest rates

We think Japanization and regulation are driving major changes in bank profitability in the main developed economies.

The term Japanization has been used frequently over the past few years to describe stagnation in economies and markets. In the context of bank earnings, it implies prolonged periods of deflation, low growth, and low interest rates.

Short-term interest rates in the main economies remain anchored at low levels even though the Fed is now hinting at an exit from QE3 (Figure 44). In Japan, the BoJ's de facto zero-interest-rate policy has squeezed bank margins and reduced their earnings power over an extended period of time.

Figure 44. 3M Libor rates in major currencies



Source: Bloomberg, Citi Research.

The long-term decline in Japanese bank spreads continued until 2006 because short-term interest rates had been kept at near-zero levels since 2002, even though 3M Yen Libor traded steadily around 0.1% through mid-2006. We think the linkage with bank spreads subsequently became more obvious as yen interest rates moved up from zero.

We project the extension of low-interest-rate policies will reduce banks' income from deposit spreads—the spread between deposits and market interest rates, representing the superiority of deposits over the market as a source of funds—in the main economies.

## Regulation

Tougher regulation of the quantity and quality of capital, leverage, and liquidity under Basel III is already affecting bank business models. For example, most derivative transactions continue to be made over the counter, and the level of regulatory capital required for such negotiated transactions has risen sharply, effectively increasing banks' risk assets. Trading profits earned from derivative transactions are likely to decline as a result of these regulatory capital constraints.

We estimate the so-called Volcker rule, based on the Dodd-Frank financial reform act, coupled with the capital charges assessed on market transactions by Basel 2.5, will reduce FICC (Fixed Income, Currencies and Commodities)-related income at the leading investment banks by 15% to 20%.

US and European banks are far more reliant on non-interest income than their counterparts in Asia, and particularly in Japan and China, and we think the decline in trading-related income due to tougher regulation of bank balance sheets (Basel III) and behavior (Volcker rule, etc.) will serve to squeeze earnings in the US and Europe.

## 2. RoE momentum and stability

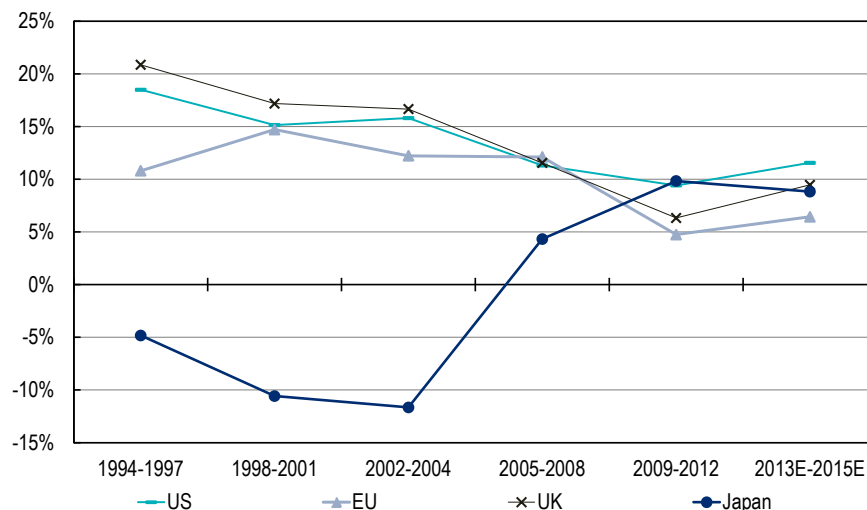
### RoE convergence

We compared the outlook for profit levels at key banks around the world from a number of perspectives. The sample groups used in Figure 45 are listed below. The numbers in that figure are averages weighted for the market cap of each group, based on share prices as of August 31, 2013.

EU	BNP Paribas, Credit Agricole, Natixis, Societe Generale, Deutsche, Commerzbank, BBVA, Santander, UBS, CS, UniCredit, Intesa Sanpaolo
UK	Barclays, HSBC, Standard Chartered, RBS, Lloyds
US	BoA, BONY Mellon, JPMorgan, PNC Financial, US Bancorp, Wells Fargo
Japan	Mizuho, MUFG, SMFG, Resona, SMTH



Figure 45. RoE by region



Source: Citi Research.

As noted in the introduction, regional disparities in bank RoE have largely disappeared over the last 10 years, and prospective RoEs are also converging. We think this trend is being driven by the impact of Japanization and regulation on western bank earnings and is leading to increased homogeneity of risk-asset-based profitability.

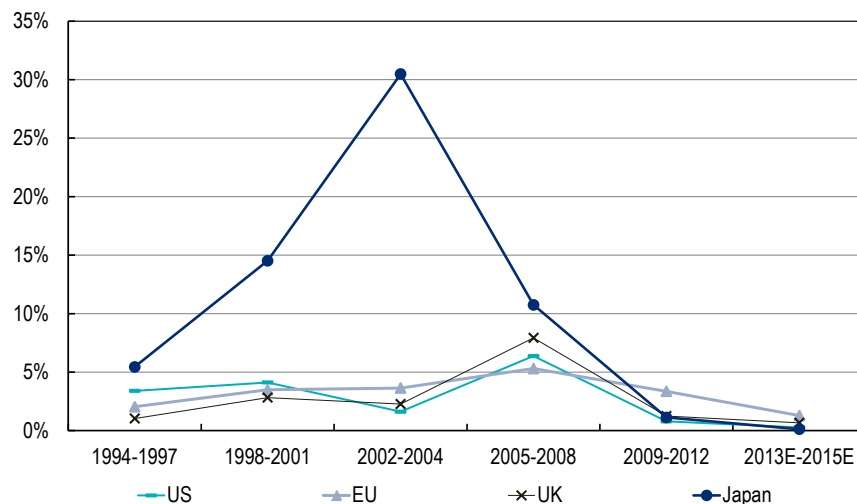
### RoE volatility

Earnings volatility has also changed over time. Figure 46 shows our calculations of the standard deviation of RoE at leading global banks over various timeframes.

The volatility of Japanese bank earnings stands out with a standard deviation of 30% from 2002 to 2004. And 1997 marked the beginning of the “lost 20 years,” a painful period characterized by large credit costs booked during the de-leveraging process along with impairment charges necessitated by a falling stock market. Japanese bank earnings experienced severe swings as financial institutions dealt with the aftereffects of the bubble’s collapse and a changing industrial structure.

However, a look at the second “lost” decade, from 2000 to 2010, reveals a substantial decrease in volatility in the second of the two five-year periods. Although volatility remains high in absolute terms, earnings have grown much more stable, particularly over the last two or three years. Contributing factors include a contraction of banks’ equity portfolios and reduced (and more stable) credit costs related to de-leveraging at both banks and non-financial companies.

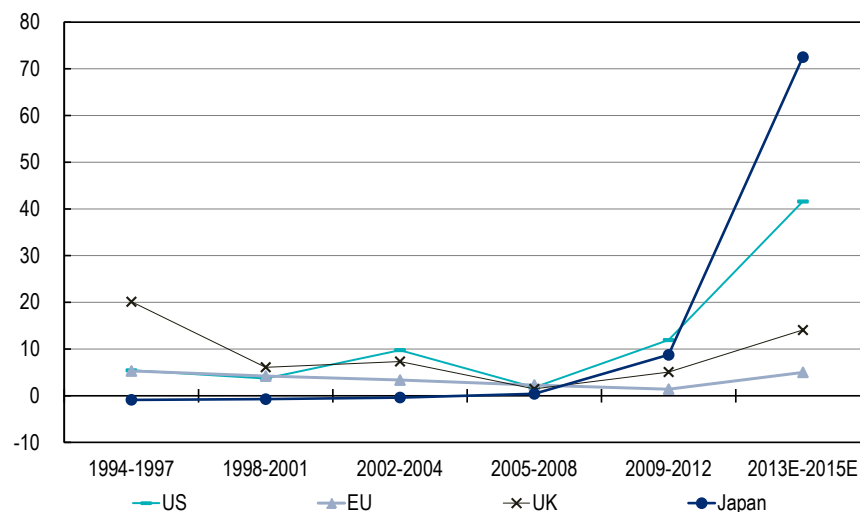
Figure 46. Standard deviation in RoE, by region



Source: Citi Research.

The Sharpe ratio is the most convenient measure of the risk-reward balance. Figure 47 shows Sharpe ratios for global banks, defined as mean RoE divided by the standard deviation of RoE. As earnings volatility has declined, we think Japanese banks now offer the most attractive risk-reward balance in the world.

Figure 47. Sharpe ratios (mean RoE / standard deviation of RoE) by region



Source: Citi Research.

**Figure 48. Bank RoE by region**

	1994-1997	1998-2001	2002-2004	2005-2008	2009-2012	2013E-2015E
US	18.5%	15.1%	15.8%	11.3%	9.4%	11.6%
EU	10.8%	14.7%	12.2%	12.1%	4.7%	6.4%
UK	20.9%	17.2%	16.7%	11.6%	6.3%	9.5%
JP	-4.8%	-10.6%	-11.7%	4.3%	9.8%	8.8%

Source: Citi Research.

**Figure 49. Standard deviation of RoE by region**

	1994-1997	1998-2001	2002-2004	2005-2008	2009-2012	2013E-2015E
US	3.4%	4.1%	1.6%	6.4%	0.8%	0.3%
EU	2.0%	3.5%	3.6%	5.3%	3.4%	1.3%
UK	1.0%	2.8%	2.3%	7.9%	1.2%	0.7%
JP	5.4%	14.5%	30.5%	10.7%	1.1%	0.1%

Source: Citi Research.

**Figure 50. Sharpe ratios (mean RoE / standard deviation of RoE) by region**

	1994-1997	1998-2001	2002-2004	2005-2008	2009-2012	2013E-2015E
US	5.4	3.7	9.8	1.8	11.9	41.6
EU	5.3	4.2	3.4	2.3	1.4	5.0
UK	20.1	6.1	7.3	1.5	5.1	14.1
JP	-0.9	-0.7	-0.4	0.4	8.7	72.5

Source: Citi Research.

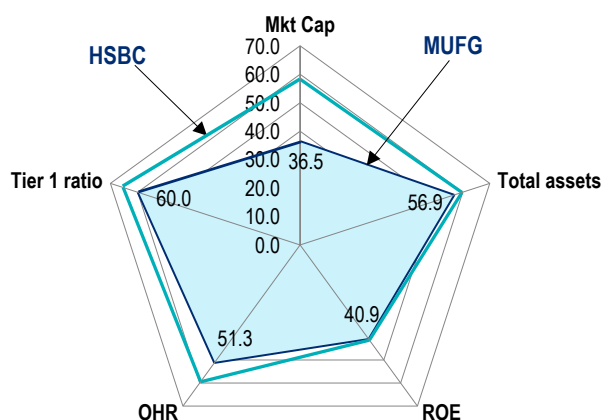
## IV. Head-to-head comparison of MUFG and HSBC

### 1. Comprehensive assessment

Figure 51 is a radar chart comparing the deviation scores for five indicators—market cap, Tier 1 ratio, overhead ratio, RoE, and total assets—at MUFG and 10 other banks selected based on market cap (Figure 52). The indicators were chosen to provide a picture of bank valuation, financial health, efficiency, profitability, and size.

Whereas the five scores for HSBC are roughly equidistant from the center of the graph, MUFG has noticeably lower scores for market cap and RoE. Although there is also a gap in RoE, the fact that the greatest disparity is for market cap suggests the market may not be giving MUFG the valuation it deserves.

Figure 51. Deviation scores for key indicators at HSBC and MUFG



Source: Citi Research.

Figure 52. Financial indicators for the top 10 in terms of market cap and MUFG (\$bn)

2012	2011	Company	Country	Mkt Cap	Total assets	RoE	OHR	Tier 1 ratio
1	1	ICBC	China	239,437.7	2,815.6	23%	36%	10.6%
2	2	Wells Fargo	USA	226,993.2	1,423.0	13%	55%	11.8%
3	4	HSBC	UK	206,607.9	2,692.5	8%	62%	13.4%
4	5	JP Morgan Chase	USA	200,594.1	2,359.1	11%	57%	12.6%
5	3	CCB	China	191,841.2	2,242.7	22%	37%	11.3%
6	9	Bank of America	USA	154,915.9	2,210.0	1%	78%	12.9%
7	6	Agricultural Bank of China	China	146,602.7	2,125.8	21%	43%	9.7%
8	7	Bank of China	China	120,959.2	2,035.3	18%	44%	10.5%
9	8	Commonwealth Bank	AUS&NZ	108,524.8	688.9	18%	45%	10.2%
10	10	Westpac Banking Corp	AUS&NZ	89,115.2	700.5	14%	41%	10.3%
11	13	MUFG	Japan	86,659.2	2,488.8	8%	51%	12.7%

Note: Market caps as of August 26. Total assets, RoE, OHR, and Tier 1 ratios are as of FY12.  
Source: Citi Research.

## 2. Efficiency and profitability

MUFG's overhead ratio of 51% indicates higher efficiency than HSBC's 62%. Whereas personnel costs represent 48% of overhead at HSBC, the corresponding figure at MUFG is only 39%. MUFG's RoE remains low compared with other banks in the top 10, but it was equal to HSBC's in FY12.

## 3. Total assets

The two banks are equally sized in terms of total assets. Deposits account for 49% of those assets at HSBC and 62% at MUFG. The latter has superior liquidity since stable deposits account for a higher percentage of its liabilities.

## 4. Market cap

HSBC has a market cap more than twice that of MUFG and a PBR of 1.15x versus a figure of 0.75x for MUFG. The disparity in market cap appears to be larger than the difference in earnings strength would warrant.

### Changes from FY11 deviation scores

Figure 53 shows the change in deviation scores since the last time we conducted this exercise. MUFG earned slightly higher scores for market cap and RoE and lower scores for total assets and Tier 1 capital. HSBC had lower scores for RoE and total assets but higher scores for market cap, Tier 1 capital, and overhead ratio.

Figure 53. Change in deviation scores

	Mkt Cap	Total assets	RoE	OHR	Tier 1 ratio
Average	161,114	1,980	14.3%	49.9%	11.5%
Class curve	55,138	733	6.8%	12.6%	1.3%
Class curve (FY12)					
MUFG	36.5	56.9	40.9	51.3	60.0
HSBC	58.3	59.7	41.3	59.4	65.3
Year to Year (FY12-FY11)					
MUFG	0.5	-4.5	3.1	0.0	-2.5
HSBC	1.1	-0.4	-4.0	5.2	9.9

Source: Citi Research.

## V. Global comparison of financial indicators

### 1. FY12 trends

#### (1) Earnings

##### RoE

Average RoE at the 96 banks we cover with a market cap of at least \$10bn was down on the year.

The decline was attributable mostly to lower RoEs at loss-making European banks such as UBS, Barclays, and Credit Agricole. UBS recorded one-time charges of CHF8bn that included asset impairments, legal costs, and restructuring expenses.

##### RoA

Average RoA rose slightly over FY11, driven mainly by improvements at banks in China, Australia, and other areas heavily exposed to Asia's emerging economies. RBS reported a 1.5ppt YoY increase in RoA on the sale of nonperforming assets.

##### Credit costs

Credit conditions were stable overall, with median credit costs largely unchanged from FY11. Credit costs were down at most banks, but Santander, Unicredit, Santander Brasil, and Fubon reported higher numbers for this indicator.

#### (2) Balance sheets

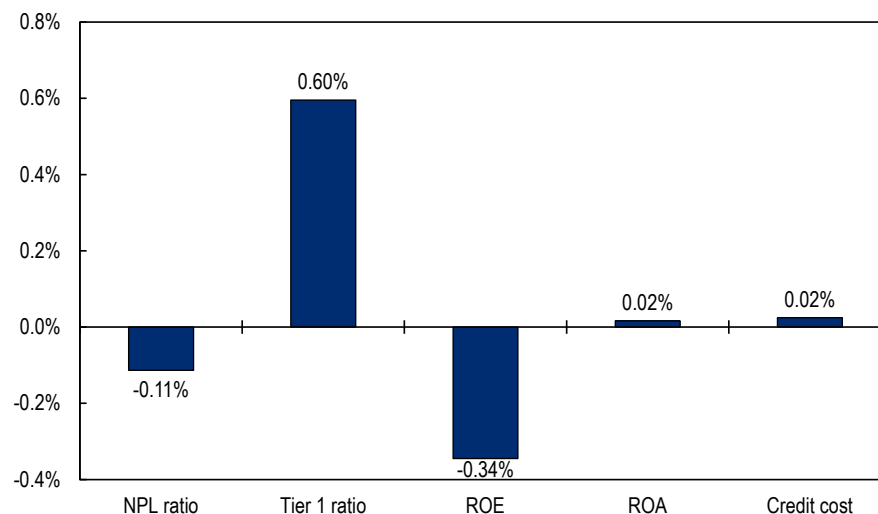
##### NPL ratios

Nonperforming loan ratios were down, with a sizeable group of western banks reporting improvements of more than 1ppt. Meanwhile, NPL ratios increased at Santander and Unicredit.

##### Tier 1 ratios

Tier 1 ratios rose sharply over the year before. Especially large gains were reported by UBS (+5.4ppt), BNP Paribas (+2.3ppt), and Credit Suisse (+3.8ppt), which reduced risk assets by selling off non-core assets and trimming market risk. On the other hand, Mizuho and SMFG reported modestly lower Tier 1 ratios as risk assets increased on lending growth and the adoption of Basel III.

Figure 54. One-year change in NPL ratios, Tier 1 ratios, RoE, RoA, and credit costs



Note: Based on FY12 results of banks covered by Citi with market caps of at least \$10bn. Negative values for NPL ratio and credit cost indicate improvements.  
Source: Citi Research.

## 2. Balance sheets

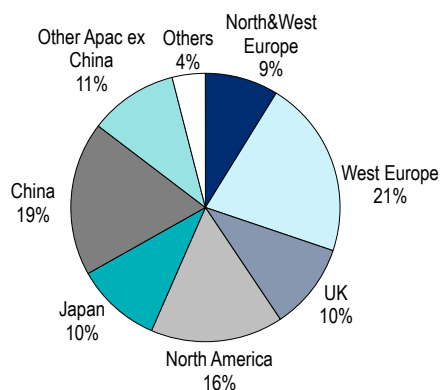
### (1) Size

#### Deposits and loans

Although Japanese banks are outdone by their global rivals in market cap and valuation, how do their commercial banking operations (loans and deposits) compare?

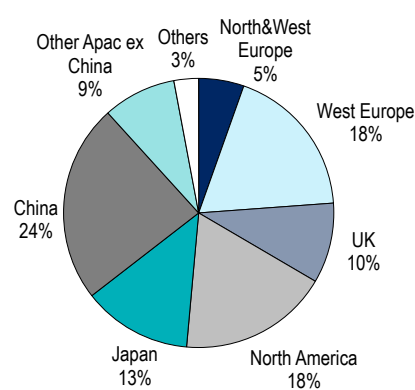
Figures 55 and 56 show Japanese institutions account for about 10% of global loans outstanding and about 13% of global deposits, a result that reflects Japan's large pool of personal financial assets and the heavy allocation of those assets to deposits and savings.

Figure 55. Global loans outstanding (end-FY12)



Note: Data for 166 banks covered by Citi Research.  
Source: Citi Research.

Figure 56. Global deposits outstanding (end-FY12)



Note: Data for 166 banks covered by Citi Research.  
Source: Citi Research.

### Individual bank rankings

Industrial and Commercial Bank of China (ICBC) and other Chinese lenders are at the top of the rankings for both loans and deposits. A number of Japanese institutions are also found near the top, including MUFG, which did not feature in the top 10 for market cap but was ranked seventh for loans and fourth for deposits.

In summary, Chinese and Japanese banks tend to have larger commercial banking operations—i.e., balance sheet-based businesses—than their western rivals.

Japanese banks also tend to be ranked higher for deposits than loans, reflecting sluggish domestic loan demand and steady growth in deposits.



Figure 57. Loan and deposit rankings (\$mn)

		Region	Loans			Region	Deposits
1	Industrial & Commercial Bank of China	China	1,413,045	1	Industrial & Commercial Bank of China	China	2,189,768
2	China Construction Bank	China	1,205,771	2	China Construction Bank	China	1,820,631
3	Bank of China	China	1,101,824	3	Agricultural Bank of China	China	1,743,565
4	Agricultural Bank of China	China	1,032,599	4	MUFG	Japan	1,555,425
5	HSBC Holdings PLC	UK	997,623	5	Bank of China	China	1,472,480
6	Banco Santander	Spain	982,524	6	HSBC Holdings PLC	UK	1,340,014
7	MUFG	Japan	969,004	7	JP Morgan Chase & Co	USA	1,193,593
8	Bank of America Corp	USA	906,814	8	SMFG	Japan	1,070,233
9	Lloyds Banking Group PLC	UK	840,646	9	Mizuho	Japan	1,056,769
10	BNP Paribas SA	France	832,066	10	Bank of America Corp	USA	978,708
11	Wells Fargo & Co	USA	799,574	11	Wells Fargo & Co	USA	940,504
12	JP Morgan Chase & Co	USA	733,796	12	Banco Santander	Spain	777,410
13	UniCredit Group	Italy	722,039	13	UniCredit Group	Italy	765,351
14	Mizuho	Japan	716,800	14	Deutsche Bank	Germany	761,715
15	Royal Bank of Scotland Group PLC	UK	699,022	15	BNP Paribas SA	France	711,968
16	SMFG	Japan	696,583	16	Royal Bank of Scotland Group PLC	UK	704,143
17	Barclays PLC	UK	688,974	17	Lloyds Banking Group PLC	UK	693,860
18	Commonwealth Bank of Australia	AUS&NZ	553,210	18	Credit Agricole SA	France	638,183
19	Westpac Banking Corp	AUS&NZ	537,456	19	Barclays PLC	UK	626,408
20	Societe Generale	France	537,230	20	Bank of Communications	China	598,432
21	Deutsche Bank	Germany	530,590	21	Royal Bank of Canada	Canada	508,550
22	National Australia Bank Ltd	AUS&NZ	517,825	22	Intesa Sanpaolo	Italy	497,980
23	Intesa Sanpaolo	Italy	497,013	23	Toronto Dominion	Canada	488,071
24	Banco Bilbao Vizcaya Argentaria SA	Spain	484,860	24	Scotiabank	Canada	463,892
25	Bank of Communications	China	473,059	25	Societe Generale	France	445,026
26	Nordea	Nordics	460,688	26	National Australia Bank Ltd	AUS&NZ	435,815
27	Credit Agricole SA	France	450,763	27	Australia and New Zealand Banking Group Ltd	AUS&NZ	412,154
28	Australia and New Zealand Banking Group Ltd	AUS&NZ	449,151	28	Banco Bilbao Vizcaya Argentaria SA	Spain	411,980
29	Toronto Dominion	Canada	411,760	29	Westpac Banking Corp	AUS&NZ	409,941
30	Royal Bank of Canada	Canada	380,488	30	UBS	Switzerland	407,862
31	Commerzbank	Germany	378,187	31	China Merchants Bank	China	406,472
32	Sberbank RF	Russia	362,081	32	Resona	Japan	389,368
33	Scotiabank	Canada	355,687	33	Commonwealth Bank of Australia	AUS&NZ	388,419
34	Danske Bank A/S	Nordics	335,134	34	Standard Chartered PLC	UK	372,874
35	UBS	Switzerland	306,425	35	China CITIC Bank	China	361,963
36	China Merchants Bank	China	305,678	36	Commerzbank	Germany	350,818
37	Resona	Japan	281,152	37	Credit Suisse	Switzerland	336,714
38	Standard Chartered PLC	UK	279,638	38	Sberbank RF	Russia	333,120
39	China CITIC Bank	China	266,905	39	Bank of Montreal	Canada	323,913
40	Credit Suisse	Switzerland	265,544	40	China Minsheng Banking	China	309,166
41	Svenska Handelsbanken AB	Nordics	258,531	41	SMTH	Japan	287,916
42	Banco do Brasil	LatAm	256,613	42	Nordea	Nordics	264,825
43	Bank of Montreal	Canada	255,707	43	Bank of New York Mellon Corp	USA	246,095
44	CIBC	Canada	242,454	44	CIBC	Canada	243,366
45	SMTH	Japan	237,653	45	Banco do Brasil	LatAm	230,454
46	DNB ASA	Nordics	235,280	46	Capital One Financial Corp.	USA	212,485
47	China Minsheng Banking	China	222,238	47	KBC	Benelux	210,658
48	US Bancorp	USA	212,021	48	State Bank of India	India	205,140
49	Itaú Unibanco	LatAm	208,247	49	US Bancorp	USA	203,636
50	Capital One Financial Corp.	USA	205,889	50	DBS Group	Singapore	198,900

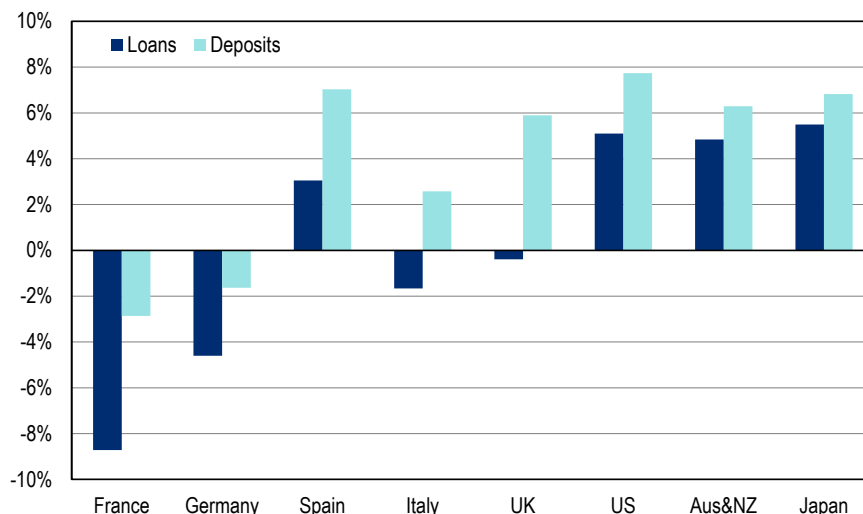
Note: Based on FY12 results for 166 banks covered by Citi Research.  
Source: Citi Research.

### Comparison of one-year performance

Figure 58 compares growth in loans and deposits at banks covered by Citi in various countries. The results are not affected by exchange rate fluctuations since data from each country are in a single currency.

Obvious trends include an increase in both loans and deposits in the US, Australia, and Japan and a decline in lending in Europe. The growth in US deposits over the last year has been especially pronounced. Also, banks in Spain and Italy reported higher deposits in FY12.

**Figure 58. Growth in deposits and loans by country (FY12 over end-FY11)**



Note: The graph does not represent trends in outstanding loans and deposits for each country, because data are for banks headquartered there and include loans and deposits at their overseas branches.

Source: Citi Research.

### Extreme variance in market cap / lending ratios

Figure 59 ranks banks by the ratio of market cap to loans outstanding. The higher this ratio, the higher the value placed on a bank's lending operations. When trust banks are disregarded, the list is dominated by institutions in emerging economies. We think this reflects 1) expectations of lending growth fueled by strong economic growth and 2) large spreads made possible by protective banking regulation.

In Japan, where sluggish growth and a prolonged low-interest-rate policy have led to low RoAs, banks have been assigned low market valuations relative to the size of their balance sheets (loans and deposits).

However, we do not think the current disparity in valuations is likely to widen any further. There are limits to the sustainability of growth in the emerging economies, and growth may be followed by interest rate liberalization and a correction of excessive moves in asset prices. We also project that liquidity will come to play a much more important role in the wake of the financial crisis, including the direction of regulation. As such, we think current views may eventually change.

Figure 59. Market cap / loans ratio

	Company	Region	Mkt cap	Mkt cap/Loans	PDR
1	State Street Corp	USA	31,071	252%	19%
2	Bank Central Asia	Indonesia	21,171	78%	55%
3	Bank of New York Mellon Corp	USA	35,492	76%	14%
4	HDFC Bank	India	22,967	59%	47%
5	Banorte	LatAm	17,716	56%	54%
6	Julius Baer Gruppe AG	Switzerland	10,243	47%	24%
7	Credicorp	LatAm	10,056	47%	42%
8	Northern Trust Corp	USA	13,695	46%	17%
9	Hang Seng Bank	Hong Kong	30,299	44%	29%
10	Bank Rakyat Indonesia (Persero )	Indonesia	15,066	40%	32%
11	Bank Mandiri (Persero)	Indonesia	15,857	39%	32%
12	Bank of China (Hong Kong)	Hong Kong	33,539	33%	21%
13	Fubon FHC	Taiwan	13,928	33%	28%
14	US Bancorp	USA	68,641	32%	34%
15	Wells Fargo & Co	USA	227,046	28%	24%
16	ICICI Bank	India	15,566	28%	31%
17	Garanti Bank	Turkey	14,241	28%	29%
18	Santander Chile	LatAm	10,710	27%	35%
19	JP Morgan Chase & Co	USA	196,943	27%	16%
20	UBS	Switzerland	78,809	26%	19%
21	CIMB	Malasia	17,511	26%	22%
22	Maybank	Malasia	26,525	26%	23%
23	FirstRand Limited	Africa	16,517	25%	22%
24	Royal Bank of Canada	Canada	89,357	23%	18%
25	M&T Bank Corp	USA	15,378	23%	23%
26	OCBC	Singapore	26,905	23%	20%
27	BB&T	USA	25,170	23%	19%
28	PNC Financial Services Group Inc	USA	39,874	23%	25%
29	Santander Brasil	LatAm	22,492	22%	36%
30	Keycorp	USA	11,119	21%	19%
31	HSBC Holdings PLC	UK	201,616	20%	15%
32	UOB	Singapore	25,741	20%	17%
33	Standard Chartered PLC	UK	56,313	20%	15%
34	Fifth Third Bancorp	USA	17,475	20%	20%
35	Public Bank	Malasia	12,732	20%	17%
36	Commonwealth Bank of Australia	AUS&NZ	105,194	19%	27%
37	Capital One Financial Corp.	USA	39,025	19%	18%
38	Toronto Dominion	Canada	77,995	19%	16%
39	Scotiabank	Canada	67,275	19%	15%
40	Standard Bank Group	Africa	18,209	19%	17%
41	Credit Suisse	Switzerland	48,953	18%	15%
42	Isbank	Turkey	10,911	18%	18%
43	DBS Group	Singapore	30,921	18%	16%
44	Bank of America Corp	USA	156,527	17%	16%
45	Westpac Banking Corp	AUS&NZ	88,529	16%	22%
46	Sberbank RF	Russia	59,558	16%	18%
47	Australia and New Zealand Banking Group Ltd	AUS&NZ	73,539	16%	18%
48	Bank of Montreal	Canada	40,127	16%	12%
49	SunTrust Banks	USA	18,405	15%	15%
50	Itaú Unibanco	LatAm	31,429	15%	26%
74	SMFG	Japan	62,452	9%	6%
75	MUFG	Japan	86,187	9%	6%
82	SMTH	Japan	17,625	7%	6%
83	Mizuho	Japan	50,444	7%	5%

Note: Based on FY12 results for 95 depository institutions with market cap of at least \$10bn covered by Citi Research. Market caps as of August 26, 2013.

Source: Citi Research.

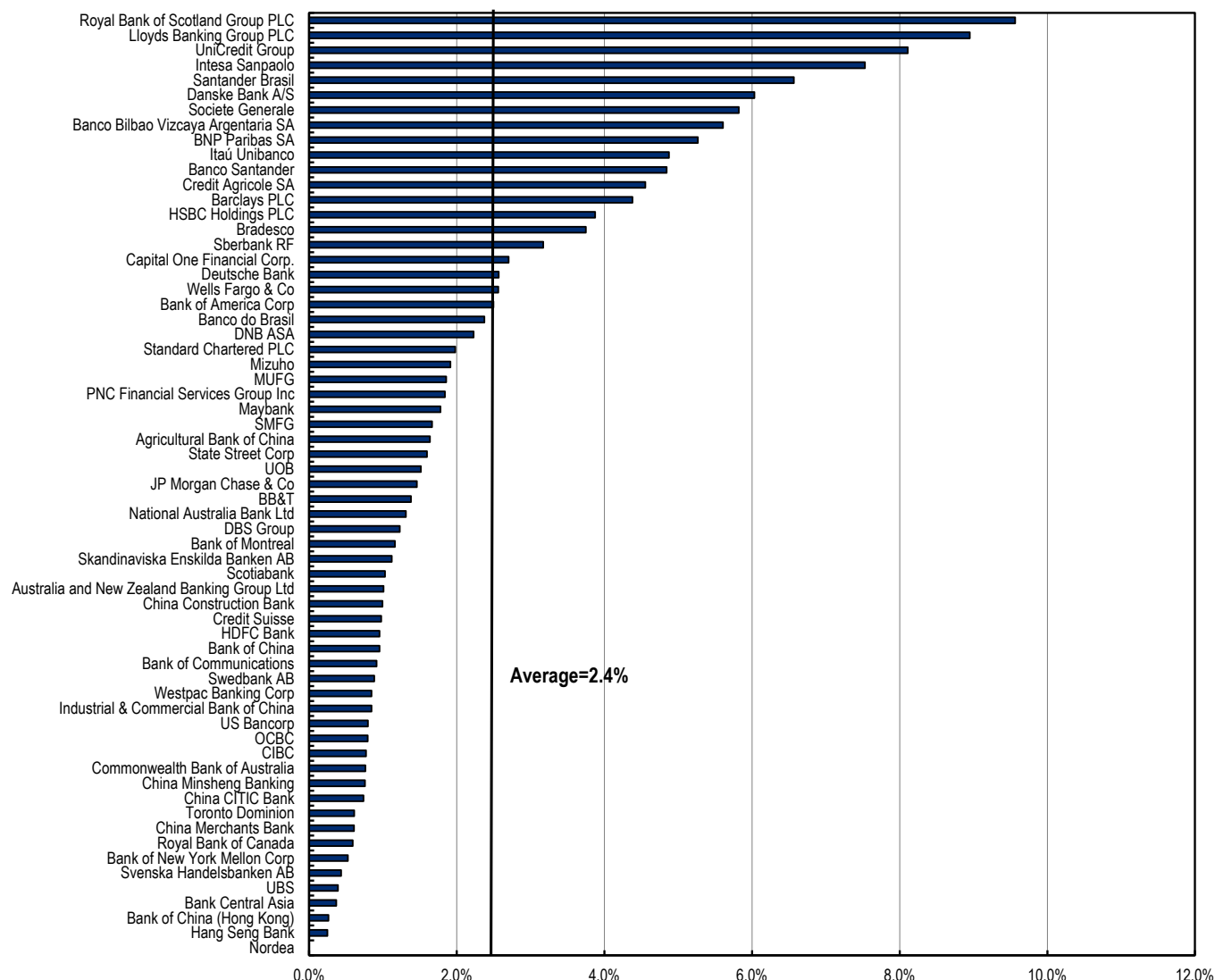
## (2) Safety

### NPL ratios vary widely

Figure 60 shows NPL ratios at the largest banks by market cap. Ratios ranged from less than 1% to nearly 10%. Japanese banks' ratios were substantially lower than the average of 2.4%, which is indicated by a vertical line in the graph.

By country, NPL ratios tended to be highest in the UK and Italy and relatively low in northern Europe, Southeast Asia, and China. The US and Japan were located between these two extremes

Figure 60. NPL ratios



Note: Based on FY12 results for banks covered by Citi with a market cap of at least \$20bn.

Source: Citi Research.

### Capital ratios also vary widely

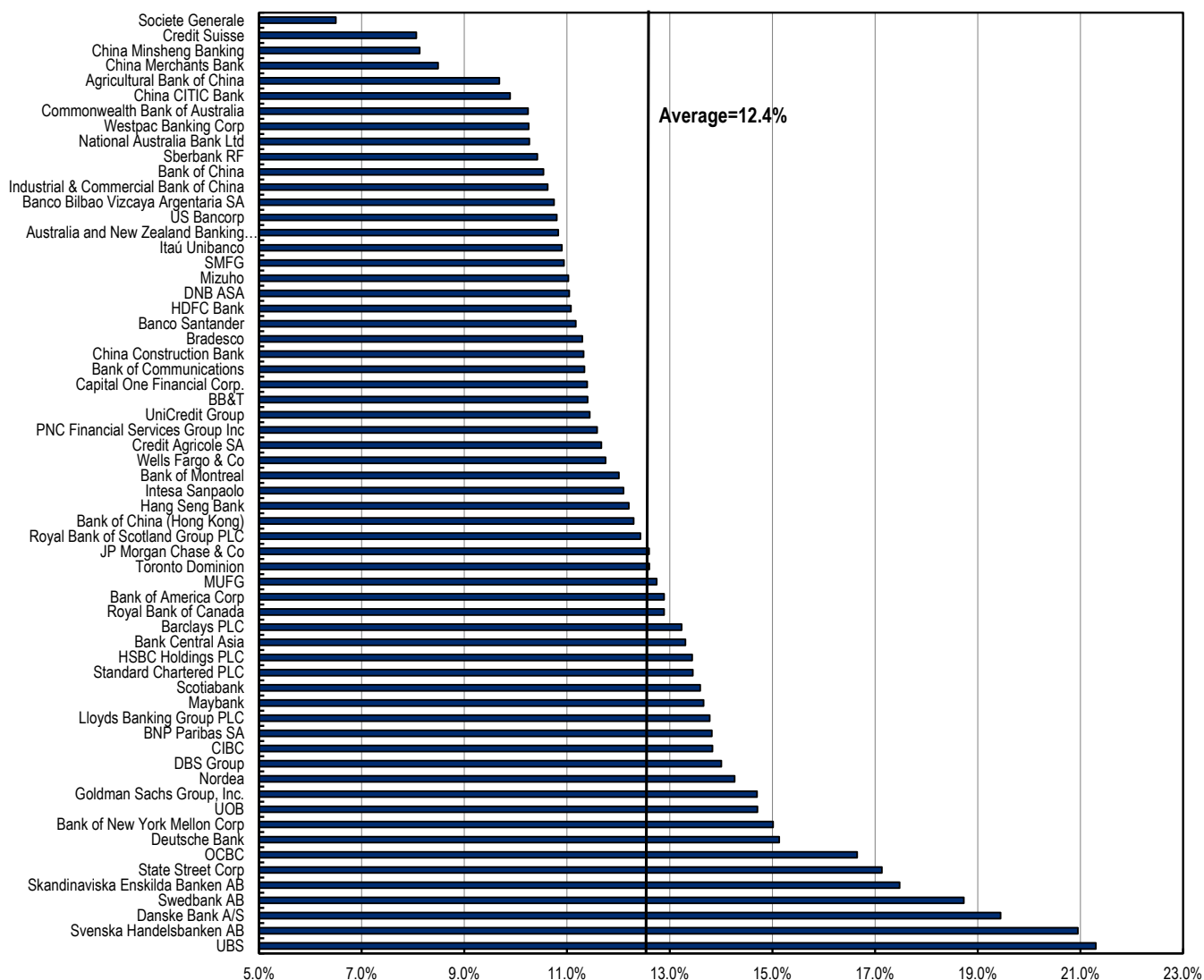
Tier 1 ratios, perhaps the clearest statement of a bank's financial soundness, also varied widely. Figure 61 compares Tier 1 ratios for various global institutions. Banks

in Singapore and Switzerland had the highest ratios, and the average was 12.4% (indicated by a vertical line in the graph). Among Japanese institutions, MUFG was higher than average and SMFG and Mizuho, slightly below average.

However, we think the situation is likely to change greatly at the end of FY12. US banks are expected to finally adopt Basel III, which we expect will produce a substantial increase in the reported risk assets of western banks holding large derivatives positions.

We therefore anticipate an improvement in the relative position of Japanese banks.

Figure 61. Tier 1 ratios



Note: Based on FY12 results for banks covered by Citi with a market cap of at least \$20bn.  
Source: Citi Research.

### **(3) Liquidity**

#### **Large disparities in loan-to-deposit ratios persist**

The ECB's two LTROs helped calm funding-related turmoil in European financial markets. However, this kind of liquidity support from the central bank cannot support stable bank funding.

A simple indicator of liquidity is the loan-to-deposit ratio. Overall levels have not changed substantially from last year, and the disparities between countries and regions remain large.

Figure 62 shows that banks in Europe—and particularly northern Europe—and emerging economies tend to have the highest loan-to-deposit ratios. Japan's three megabanks are all found near the bottom of the rankings. This is not a particularly desirable result in that it reflects sluggish lending, the main source of bank earnings. But it does confirm the financial soundness of Japanese banks in a world of increasingly restrictive liquidity rules and mounting global funding concerns.

Figure 62. Loan-to-deposit ratios

		Regions	Loan-deposit ratio	PDR
1	Svenska Handelsbanken AB	Nordics	246%	27%
2	Swedbank AB	Nordics	214%	31%
3	Danske Bank A/S	Nordics	204%	13%
4	Natixis	France	182%	20%
5	Bradesco	LatAm	182%	24%
6	Itaú Unibanco	LatAm	175%	26%
7	Nordea	Nordics	174%	19%
8	Santander Brasil	LatAm	167%	36%
9	DNB ASA	Nordics	161%	18%
10	Skandinaviska Enskilda Banken AB	Nordics	143%	18%
11	Commonwealth Bank of Australia	AUS&NZ	142%	27%
12	Bank VTB	Russia	138%	15%
13	Westpac Banking Corp	AUS&NZ	131%	22%
14	Santander Chile	LatAm	131%	35%
15	Banco Santander	Spain	126%	11%
16	Lloyds Banking Group PLC	UK	121%	12%
17	Societe Generale	France	121%	8%
18	National Australia Bank Ltd	AUS&NZ	119%	16%
19	Banco Bilbao Vizcaya Argentaria SA	Spain	118%	14%
20	BNP Paribas SA	France	117%	12%
21	Shinhan Financial Group	Korea	116%	10%
22	PNC Financial Services Group Inc	USA	111%	25%
23	Banco do Brasil	LatAm	111%	12%
24	ICICI Bank	India	111%	31%
25	Barclays PLC	UK	110%	9%
26	KB Financial Group	Korea	109%	7%
27	Australia and New Zealand Banking Group Ltd	AUS&NZ	109%	18%
28	Sberbank RF	Russia	109%	18%
29	Commerzbank	Germany	108%	4%
30	Erste Bank	CEE&Austria	108%	9%
31	Garanti Bank	Turkey	105%	29%
32	US Bancorp	USA	104%	34%
33	Fifth Third Bancorp	USA	104%	20%
34	Isbank	Turkey	101%	18%
35	SunTrust Banks	USA	101%	15%
36	Intesa Sanpaolo	Italy	100%	7%
37	CIBC	Canada	100%	13%
38	Royal Bank of Scotland Group PLC	UK	99%	5%
39	M&T Bank Corp	USA	98%	23%
40	Capital One Financial Corp.	USA	97%	18%
41	Banorte	LatAm	97%	54%
42	UniCredit Group	Italy	94%	5%
43	Bank of America Corp	USA	93%	16%
44	Maybank	Malaysia	92%	23%
45	Standard Bank Group	Africa	91%	17%
46	Keycorp	USA	89%	19%
47	Credicorp	LatAm	89%	42%
48	FirstRand Limited	Africa	88%	22%
49	DBS Group	Singapore	88%	16%
50	Public Bank	Malaysia	88%	17%
60	SMTH	Japan	83%	6%
80	Mizuho	Japan	68%	5%
83	SMFG	Japan	65%	6%
86	MUFG	Japan	62%	6%

Note: Based on FY12 results for banks covered by Citi with a market cap of at least \$10bn.  
Source: Citi Research.

### Changes in loan-to-deposit ratios

Loan-to-deposit ratios by country and region have changed substantially over the past five years. The ratios at banks in Japan and China were largely unchanged

apart from a modest increase at Chinese lenders, with both holding steady around 70%.

Banks in the US and Europe had roughly similar ratios on average in 2005, but since then ratios at US lenders have fallen and are now approaching the levels observed in Japan and China. Loan-to-deposit ratios in the EU climbed to 120% around the time that Lehman Brothers collapsed. The subsequent decline has been gradual, and the ratio remains substantially higher than 100%.

### 3. Profit analysis

#### (1) Profitability

##### **Emerging economy banks still enjoy superior RoEs**

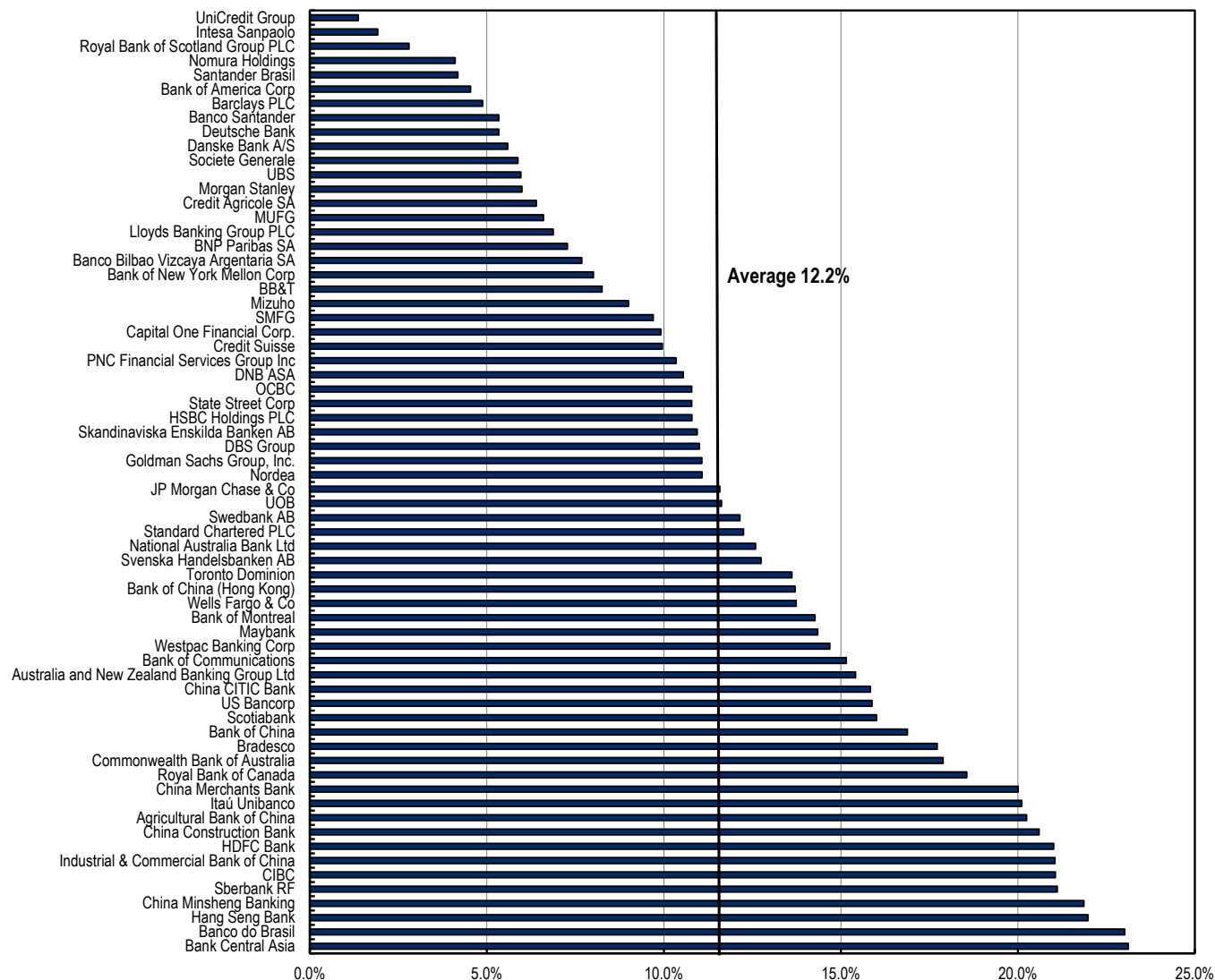
Japanese banks continue to fall below other lenders in terms of RoE. Figure 63 provides an international comparison of bank RoE in FY13 (forecasts by Citi).

Projected RoE averages a high 12.2%, indicated by the vertical line in the graph, and is up from 11.9% in FY12. The increase is being driven mainly by banks in the emerging economies, with especially high RoEs forecast for lenders in Indonesia, China, South America, and Russia. Sixteen lenders are expected to report RoEs in excess of 20%.

Meanwhile, 30 institutions are expected to report RoEs of less than 10%, up from 18 in FY12. Japan's megabanks also fell into this group in FY12. Although many western banks are confident RoEs will remain above 10% in spite of financial instability and an uncertain earnings outlook, we are less certain and think earnings volatility may intensify.



Figure 63. Projected FY13 RoE

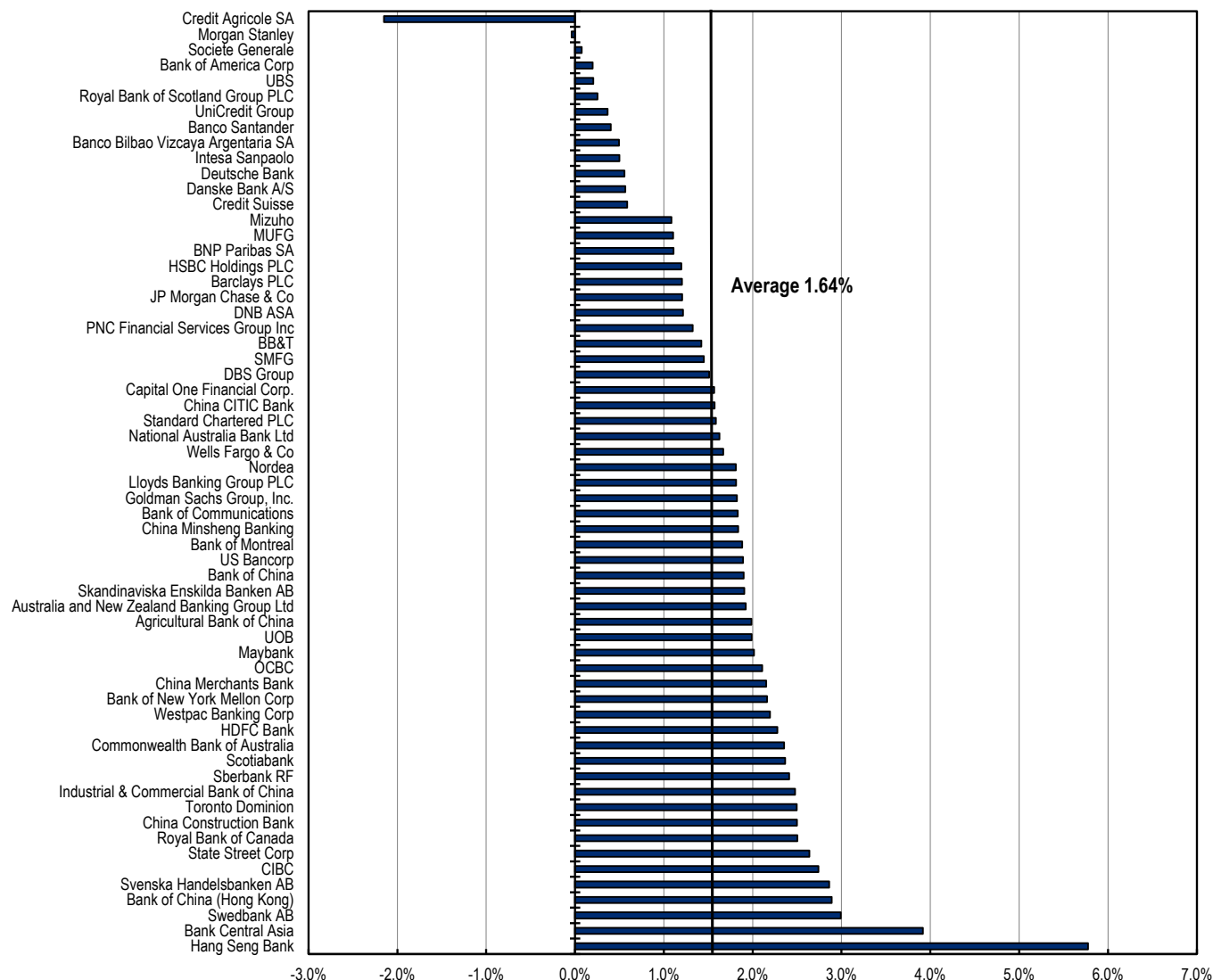


Note: Banks covered by Citi with a market cap of at least \$20bn  
Source: Citi Research estimates.

### Japanese banks have competitive RoRAs

The gap between major global banks in RoRA (Return on Risk Assets) is relatively small, with Japanese banks remaining competitive with global rivals despite their low RoAs. The disparity between the two indicators is due to Japan's deep pool of deposits and sluggish loan demand, which has forced banks to load up their balance sheets with government bonds. Because these securities carry a low risk weighting, risk assets are low as a percentage of total assets.

Figure 64. RoRA



Note: Based on FY12 results at banks covered by Citi with a market cap of at least \$20bn.  
Source: Citi Research.

## (2) Efficiency

### Japanese banks report average efficiency-related indicators

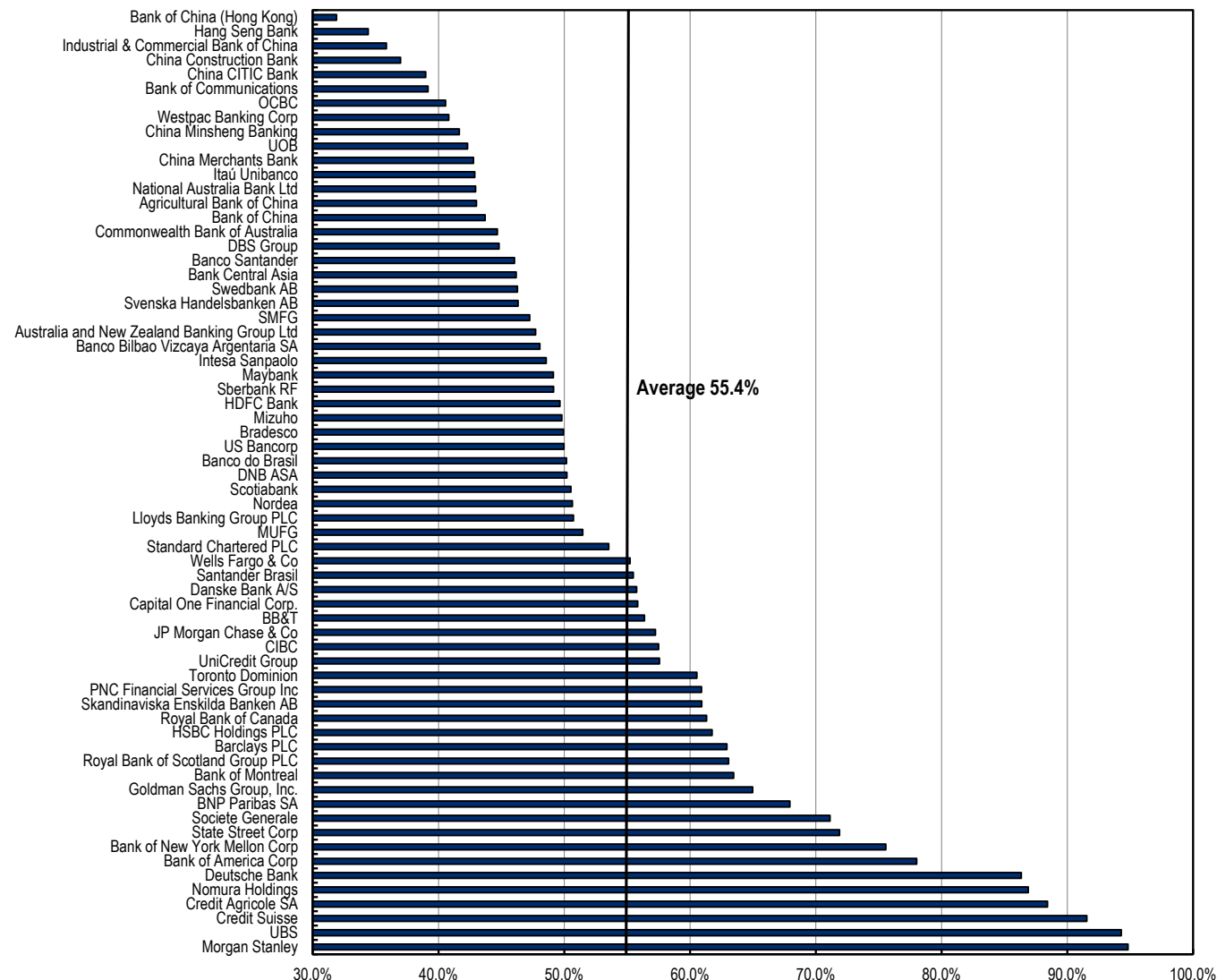
Overhead ratios (Figure 65) also vary significantly around the world.

Banks with low overhead ratios and high efficiency tend to be found in emerging and commodity-driven economies such as China, India, Australia, and Brazil. We think this is attributable not so much to a low cost base as to high gross margins, which lead to favorable overhead ratios, defined as overhead costs / gross operating profit.

Japanese banks' overhead ratio is lower than the global average of 55.4%, indicating they remain efficient compared with global rivals. SMFG, which had the lowest overhead ratio among Japanese lenders, was on a par with banks in Australia and the emerging economies. We think SMFG achieved this by

compensating for its comparatively low gross profit with cost-cutting measures and other efforts to boost efficiency.

Figure 65. Overhead ratios



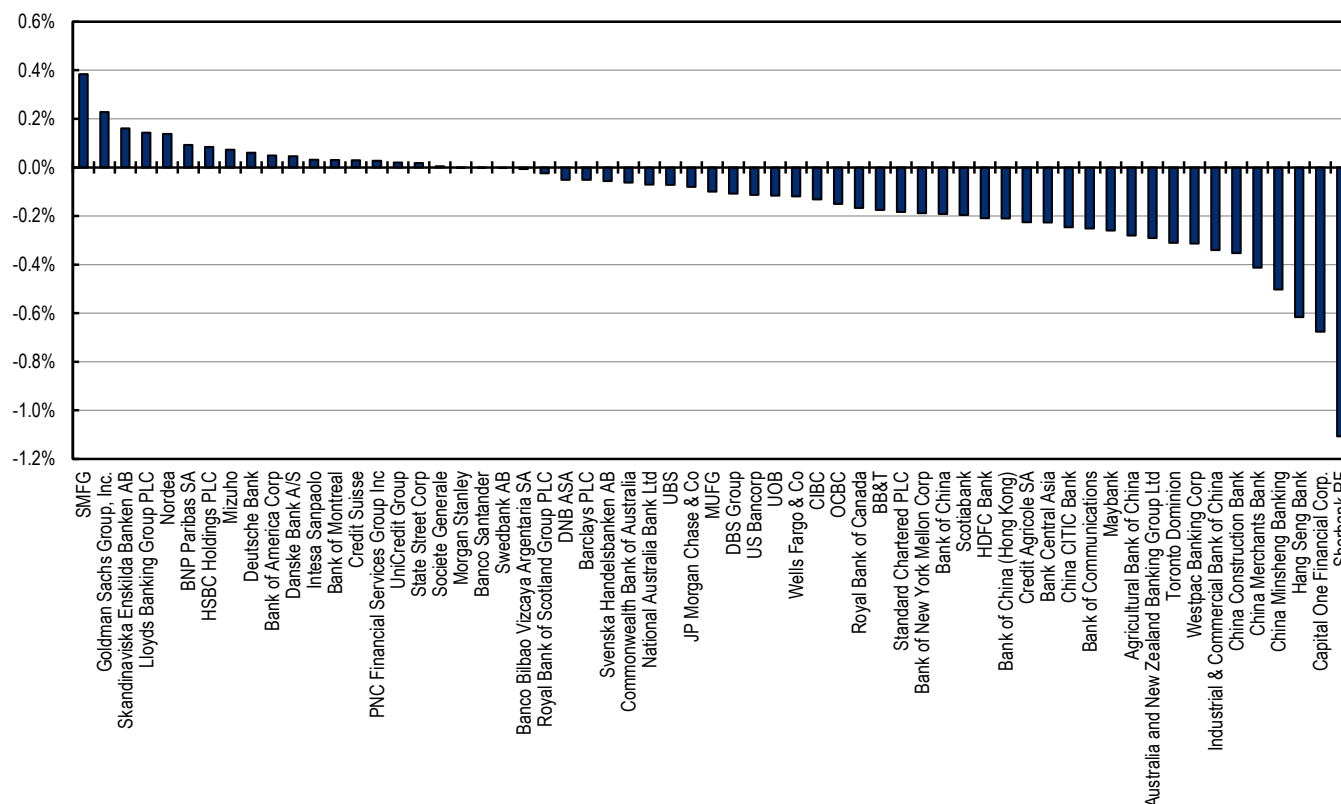
Note: Based on FY12 results for banks covered by Citi with a market cap of at least \$20bn.  
Source: Citi Research.

### (3) Changes in profitability

A look at changes in RoRA over the last year (Figure 66) shows declining RoRAs at European banks contrasting sharply with improving returns at Russian, Australian, Japanese, and some US banks.

Profitability vis-à-vis risk assets will give banks more freedom to allocate capital as they see fit (dividends, share buybacks, acquisitions, asset purchases, etc.) under Basel III. A higher RoRA therefore increases the likelihood of future improvements in RoE.

Figure 66. Change in RoRA from FY11 to FY12



Note: Based on FY12 results for banks covered by Citi with a market cap of at least \$20bn.  
Source: Citi Research.

## 4. DuPont analysis

A horizontal comparison of global banks by RoE reveals a sharp contrast between Chinese banks, which remain highly profitable, and European banks, where rising credit costs have weighed heavily on profitability. In all other regions, RoE appears to be converging in a narrow range between 6% and 8%.

Japanese banks are often criticized for their low margins. Figure 67—which shows the results of a DuPont analysis of leading global banks—confirms that this is the result of a low ratio of net operating profit to total assets.

In short, Japanese banks' core businesses are not performing well. One reason is that the BoJ's extended low-interest-rate policy has squeezed spreads and brought interest income as a percentage of total assets down to less than 0.7% at Japanese banks versus corresponding figures in the 1.2–2.3% range for leading banks in other countries.

Non-interest income as a percentage of total assets is less than 0.5% at Japanese banks but ranges from 1.0% to 2.5% at investment banks and other institutions with large fee-based businesses.

The ratio of overhead costs to total assets at Japanese banks was less than half that in other countries, mainly because of lower personnel costs. Credit costs as a percentage of total assets were less than 0.1% at Japanese banks in FY12, although banks in other countries (except Europe) also reported declines in this

ratio. We think Japanese banks will need to boost their top line if they hope to improve RoE.

Figure 67. DuPont analysis

Japan	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12
Net Interest Income as % of Total Assets	0.83%	0.79%	0.77%	0.78%	0.79%	0.71%	0.66%	0.61%
Non-Interest Income as % of Total Assets	0.53%	0.53%	0.49%	0.35%	0.35%	0.43%	0.43%	0.43%
Total Income as % of Total Assets	1.36%	1.32%	1.26%	1.13%	1.13%	1.13%	1.09%	1.04%
Cost/ Total Assets	0.62%	0.64%	0.64%	0.64%	0.61%	0.58%	-0.56%	-0.53%
Pre-Provision Profits as % of Total Assets	0.75%	0.68%	0.62%	0.49%	0.53%	0.56%	0.53%	0.51%
NPL provisions as % of Total Assets	0.21%	0.10%	0.09%	0.51%	0.19%	0.10%	0.03%	0.01%
Other provision( and other) as % of Total Assets	0.3%	0.06%	-0.11%	-0.11%	-0.06%	-0.06%	-0.10%	-0.08%
pre-Tax Profit as % of Total Assets	0.83%	0.64%	0.42%	-0.13%	0.28%	0.40%	0.40%	0.42%
RoA	0.62%	0.50%	0.28%	-0.27%	0.21%	0.32%	0.29%	0.35%
Leverage	24.05	19.78	25.09	28.45	21.22	19.77	21.25	18.50
RoE	14.88%	9.88%	6.93%	-7.80%	4.43%	6.33%	6.20%	7.64%
China	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12
Net Interest Income as % of Total Assets	2.32%	2.28%	2.57%	2.63%	2.04%	2.10%	2.20%	2.30%
Non-Interest Income as % of Total Assets	0.34%	0.30%	0.47%	0.64%	0.65%	0.66%	0.75%	0.74%
Total Income as % of Total Assets	2.66%	2.58%	3.04%	3.27%	2.69%	2.76%	2.95%	3.04%
Cost/ Total Assets	1.25%	1.14%	1.27%	1.25%	1.10%	1.07%	-1.12%	-1.16%
Pre-Provision Profits as % of Total Assets	1.41%	1.44%	1.76%	2.03%	1.59%	1.68%	1.83%	1.87%
NPL provisions as % of Total Assets	0.33%	0.36%	0.42%	0.67%	0.24%	0.22%	0.23%	0.22%
Other provision( and other) as % of Total Assets	0.0%	0.02%	0.04%	0.07%	0.04%	0.03%	0.03%	0.02%
pre-Tax Profit as % of Total Assets	1.07%	1.10%	1.39%	1.43%	1.38%	1.49%	1.62%	1.67%
RoA	0.73%	0.77%	0.96%	1.09%	1.07%	1.15%	1.25%	1.29%
Leverage	19.65	15.06	15.02	15.51	16.91	15.82	15.66	15.05
RoE	14.31%	11.65%	14.47%	16.94%	18.04%	18.22%	19.58%	19.43%
EU	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12
Net Interest Income as % of Total Assets	0.81%	2.28%	0.78%	0.93%	1.17%	1.18%	1.16%	1.18%
Non-Interest Income as % of Total Assets	1.34%	0.30%	1.22%	0.39%	1.08%	1.08%	0.96%	0.93%
Total Income as % of Total Assets	2.15%	2.58%	2.00%	1.32%	2.25%	2.26%	2.12%	2.10%
Cost/ Total Assets	1.39%	1.14%	1.33%	1.19%	1.40%	1.42%	-1.39%	-1.43%
Pre-Provision Profits as % of Total Assets	0.76%	1.44%	0.67%	0.13%	0.85%	0.84%	0.74%	0.67%
NPL provisions as % of Total Assets	0.07%	0.36%	0.12%	0.24%	0.40%	0.28%	0.29%	0.33%
Other provision( and other) as % of Total Assets	0.0%	0.02%	0.01%	-0.04%	-0.08%	-0.07%	-0.27%	-0.19%
pre-Tax Profit as % of Total Assets	0.70%	1.10%	0.56%	-0.15%	0.36%	0.50%	0.18%	0.15%
RoA	0.54%	0.77%	0.41%	-0.08%	0.28%	0.38%	0.11%	0.08%
Leverage	26.95	15.06	26.41	29.14	22.86	22.28	22.88	21.79
RoE	14.68%	11.65%	10.83%	-2.37%	6.29%	8.55%	2.42%	1.82%
UK	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12
Net Interest Income as % of Total Assets	2.16%	1.87%	1.89%	1.59%	1.60%	1.56%	1.53%	1.39%
Non-Interest Income as % of Total Assets	1.64%	1.65%	1.91%	1.29%	1.18%	1.22%	1.26%	1.14%
Total Income as % of Total Assets	3.79%	3.52%	3.80%	2.88%	2.78%	2.78%	2.79%	2.52%
Cost/ Total Assets	1.91%	1.77%	1.82%	1.41%	1.39%	1.44%	-1.48%	-1.47%
Pre-Provision Profits as % of Total Assets	1.89%	1.75%	1.98%	1.47%	1.39%	1.34%	1.31%	1.05%
NPL provisions as % of Total Assets	0.37%	0.43%	0.59%	0.83%	1.15%	0.61%	0.47%	0.32%
Other provision( and other) as % of Total Assets	-0.1%	-0.13%	-0.15%	-0.54%	-0.05%	-0.17%	-0.22%	-0.10%
pre-Tax Profit as % of Total Assets	1.38%	1.19%	1.24%	0.09%	0.19%	0.56%	0.61%	0.63%
RoA	1.04%	0.90%	1.02%	0.08%	0.18%	0.38%	0.49%	0.45%
Leverage	13.10	13.62	15.31	23.04	18.75	17.54	16.71	15.96
RoE	13.62%	12.31%	15.59%	1.82%	3.44%	6.74%	8.24%	7.12%
US	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12
Net Interest Income as % of Total Assets	2.49%	2.66%	2.42%	2.28%	2.84%	2.51%	2.28%	2.01%
Non-Interest Income as % of Total Assets	2.47%	2.71%	2.39%	1.51%	2.96%	2.81%	2.50%	2.51%
Total Income as % of Total Assets	4.96%	5.36%	4.81%	3.79%	5.80%	5.33%	4.78%	4.52%
Cost/ Total Assets	2.79%	2.76%	2.53%	1.95%	2.86%	3.02%	-3.07%	-2.87%
Pre-Provision Profits as % of Total Assets	2.17%	2.60%	2.27%	1.84%	2.94%	2.31%	1.71%	1.66%
NPL provisions as % of Total Assets	0.50%	0.53%	0.77%	1.88%	2.03%	1.04%	0.50%	0.31%
Other provision( and other) as % of Total Assets	-0.1%	-0.07%	-0.04%	0.27%	-0.21%	-0.51%	-0.33%	-0.33%
pre-Tax Profit as % of Total Assets	1.56%	2.00%	1.46%	0.23%	0.70%	0.75%	0.88%	1.01%
RoA	1.01%	1.32%	0.99%	0.20%	0.56%	0.49%	0.64%	0.75%
Leverage	8.24	8.68	12.13	11.97	10.81	10.63	10.31	9.99
RoE	8.29%	11.48%	12.01%	2.35%	6.02%	5.24%	6.61%	7.47%

Note: Based on stocks listed in Figure 87.  
Source: Citi Research.

## VI. Comparison of global operations

### 1. Commercial banking

#### (1) Project finance

##### Japanese banks firmly established in top echelon

After the subprime shock in 2007, western banks pulled in their horns on the global loan market while Japan's megabanks steadily expanded. This advance paused briefly when Lehman collapsed, and tougher regulation forced Japanese institutions to raise additional capital, but now they have resumed the active expansion of their overseas operations. Figure 68 ranks arrangers of project finance over the last three and a half years.

Figure 68. Global project finance rankings (\$mn)

	1H CY2013	CY2012	CY2011	CY2010	Proceeds (1H 2013)	Deals (1H 2013)
State Bank of India	1	2	1	1	9,210	10
China Development Bank	2	28	-	-	7,700	3
MUFG	3	1	2	7	5,585	41
SMFG	4	3	3	10	4,411	42
Mizuho	5	5	7	20	3,878	28
Barclays	6	68	-	-	2,665	16
Credit Agricole	7	7	4	6	2,494	32
Deutsche Bank	8	46	-	-	2,110	19
ING	9	13	10	12	1,993	21
Standard Chartered	10	15	-	-	1,794	16
Bank of America Merrill Lynch	11	148	-	-	1,746	6
HSBC	12	6	15	19	1,705	13
Societe Generale	13	8	5	9	1,495	14
Goldman Sachs	14	-	-	-	1,486	8
BNP Paribas	15	9	8	5	1,338	17
Cassa Depositi e Prestiti	16	81	-	-	1,249	1
DBS	17	34	-	-	1,237	7
National Australia Bank	18	14	21	28	1,229	12
Natixis	19	31	-	-	1,209	16
Lloyds Bank	20	11	25	-	1,199	10
Credit Suisse	21	50	-	-	1,183	6
CIBC	22	58	-	-	1,158	10
JP Morgan	23	61	-	-	1,156	3
RBC	24	22	-	-	1,140	8
Unicredit	25	17	-	-	1,098	16

Source: Thomson Reuters, Citi Research.

China Development Bank surged to second place on three large deals in Europe over the last six months, but MUFG and the other two Japanese megabanks stayed near the top of the list, having risen from 7th–20th place just three years ago. Among European banks, Barclays and Deutsche Bank staged a rapid recovery while BBVA and CBA, perennial denizens of the top 10, dropped out of the rankings this year.

Figures 69–71 rank arrangers of project finance by region. In the US, Japanese banks held the top three places in 2012 but have since been replaced by US and European institutions. However, the number of deals suggests that many of the banks that moved up the list did so on the back of a small number of large deals. In Asia, Japan's three megabanks were ranked second through fourth and continue to

report both strong deal traffic and high value. The megabanks also moved up the list in Europe, the Middle East, and Africa (EMEA).

**Figure 69. Project finance rankings (US, \$mn)**

	1H CY2013	CY2012	CY2011	CY2010	Proceeds (1H 2013)	Deals (1H 2013)
Barclays	1	60	-	-	1,882	8
MUFG	2	1	1	1	1,698	16
Goldman Sachs	3	-	-	-	1,413	7
Bank of America Merrill Lynch	4	-	-	-	1,409	3
Deutsche Bank	5	14	-	-	1,326	12
Credit Suisse	6	10	-	-	1,183	6
SMFG	7	2	5	9	1,102	12
Morgan Stanley	8	5	-	-	906	5
JP Morgan	9	-	-	-	825	2
RBC	10	12	13	24	721	5
Credit Agricole	11	11	7	2	676	8
Mizuho	12	3	4	7	666	5
HSBC	13	7	16	-	593	4
BBVA	14	4	14	21	539	8
ING	15	15	3	4	534	6
Standard Chartered	16	-	-	-	523	4
Societe Generale	17	19	-	-	439	4
Grupo Financiero Inbursa	18	-	-	-	417	1
Industrial Bank of Korea	19	-	-	-	415	1
Korea Exchange Bank	20	-	-	-	415	1
Scotiabank	21	17	31	-	329	2
CIBC	22	16	-	-	312	4
Korea Development Bank	23	-	-	-	303	2
Banca IMI	24	-	-	-	275	1
Lloyds Bank	25	19	19	-	275	1

Source: Thomson Reuters, Citi Research.



Figure 70. Project finance rankings (Asia, \$mn)

	1H CY2013	CY2012	CY2011	CY2010	Proceeds (1H 2013)	Deals (1H 2013)
State Bank of India	1	1	1	1	10,373	31
MUFG	2	2	10	11	4,934	29
Mizuho	3	4	16	23	4,788	22
SMFG	4	5	12	-	3,595	22
DBS	5	14	9	14	3,355	23
ANZ	6	10	8	9	2,827	23
National Australia Bank	7	9	15	-	2,736	11
ICBC	8	23	-	-	2,645	9
CBA	9	11	19	-	2,494	17
Credit Agricole	10	21	-	-	2,457	19
Ovesea-Chinese Banking	11	12	22	24	2,406	16
Korea Development Bank	12	3	7	7	1,998	11
Westpac	13	13	14	-	1,782	14
Woori Financial	14	-	-	-	1,756	7
IDFC	15	6	-	-	1,653	11
CIBC	16	-	-	-	1,316	5
Bank of China	17	20	29	-	1,286	12
Axis Bank	18	8	2	4	1,219	3
Malayan Banking	19	18	23	-	1,055	5
DBJ	20	25	-	-	1,045	2
IDBI Bank	21	16	3	3	985	6
United Overseas Bank	22	24	35	-	936	3
Yes Bank	23	-	-	-	900	3
ING	24	-	-	-	845	3
NongHyup Financial	25	20	29	-	776	4

Source: Thomson Reuters, Citi Research.

Figure 71. Project finance rankings (EMEA, \$mn)

	1H CY2013	CY2012	CY2011	CY2010	Proceeds (1H 2013)	Deals (1H 2013)
China Development Bank	1	-	-	-	7,700	3
SMFG	2	4	5	9	1,904	20
MUFG	3	6	9	20	1,507	15
Cassa Depositi e Prestiti	4	-	-	-	1,249	1
BNP Paribas	5	2	2	1	1,239	15
ING	6	11	10	10	1,210	13
Standard Chartered	7	21	28	-	1,196	11
Credit Agricole	8	3	1	2	1,156	20
Unicredit	9	5	4	6	1,098	16
Mizuho	10	-	23	25	1,064	7
Natixis	11	12	11	7	947	11
Standard Bank	12	18	26	37	917	6
KfW	13	15	44	16	906	9
Societe Generale	14	1	3	3	887	8
HSBC	15	9	12	18	881	7
Barclays	16	24	25	-	783	8
RBS	17	13	6	12	720	6
Lloyds Bank	18	8	18	17	693	7
Deutsche Bank	19	-	-	-	628	6
SEB	20	-	-	-	495	5
Saudi British Bank	21	23	58	-	492	3
Nord	22	20	35	-	455	10
Banca IMI	23	-	-	-	444	6
Citi	24	-	-	-	441	6
Bayerische Landesbank	25	-	-	23	434	5

Source: Thomson Reuters, Citi Research.

Japanese banks' active involvement in overseas deals is part of efforts to diversify revenue sources, with most of the megabanks having adopted strategies aimed at generating at least 30% of revenues outside Japan. However, there are limits to the volume of deals banks can finance on their own given the long durations of project financing and the difficulty of securing stable funding.

## (2) Syndication

Although there were some minor changes in the global syndicated loan rankings, Japan's megabanks remained in the top 10. US banks also made steady gains, underscoring the increasingly competitive environment.

Success for Japanese banks in this area was traditionally determined largely by whether or not they were invited to participate in the loan syndication. Today there are far more opportunities to serve as lead arrangers.

Figure 72. Global syndicated loan rankings (\$mn)

	1H CY2013	CY2012	CY2011	CY2010	Proceeds (1H 2013)	Deals (1H 2013)
JP Morgan	1	1	1	2	154,048	713
BoA	2	2	2	1	151,238	821
Citi	3	3	3	4	96,331	405
Wells Fargo	4	6	4	7	84,741	570
MUFG	5	4	5	3	76,965	592
Deutsche Bank	6	9	9	10	75,816	359
Barclays	7	8	8	11	70,871	335
Mizuho	8	5	6	5	70,586	407
Credit Suisse	9	15	13	16	58,756	252
SMFG	10	7	10	9	58,348	439
RBC	11	12	15	17	46,425	241
RBS	12	10	7	-	44,539	303
Goldman Sachs	13	16	21	25	44,099	211
BNP Paribas	14	13	18	6	43,276	250
HSBC	15	16	16	13	42,687	308
Morgan Stanley	16	14	17	21	42,537	199
US Bancorp	17	18	20	24	27,416	256
BMO	18	18	18	28	27,212	202
Scotiabank	19	19	19	19	26,838	142
UBS	20	-	-	-	26,118	129
Credit Agricole	21	20	14	12	24,696	152
Societe Generale	22	25	16	14	18,627	162
TD	23	21	31	-	17,760	137
PNC Financial	24	23	27	-	17,335	110
CIBC	25	-	-	-	16,547	79

Source: Thomson Reuters, Citi Research.

Syndicated loans have long been used by medium-sized and smaller companies in Japan's domestic market, and as will be noted below the arranger rankings for domestic syndicated loans now feature regional banks as well as larger institutions.

Figure 73. Domestic syndicated loan arrangers in Japan (¥bn)

	1H CY2013	CY2012	CY2011	CY2010	Proceeds (1H 2013)	Deals (1H 2013)
Mizuho	1	1	1	1	4,892	267
SMFG	2	2	2	3	3,632	288
MUFG	3	3	3	2	3,180	305
DBJ	4	4	12	7	228	18
SMTH	5	5	4	4	209	36
Citi	6	7	8	5	177	3
Resona	7	8	5	6	122	35
Yokohama	8	9	9	9	93	48
Aozora	9	11	8	8	53	13
Credit Agricole	10	10	7	11	45	4

Source: Thomson Reuters, Citi Research.

## 2. Transactional banking

### (1) Global CMS

#### Megabanks fall in rankings

Japanese banks have made steady progress in building a global presence in syndicated loans and project finance deals. Unfortunately, they continue to lag behind in funds settlement and other aspects of transactional banking.

Particularly on the global stage, there is a strong need for cash management services (CMS) to support client firms' worldwide business activities. With CMS, banks provide a platform that enables operating companies engaged in cross-border business to efficiently settle and manage funds in various currencies.

Unfortunately, it is difficult to compare banks' global CMS operations by tracking deals as with the league tables for financing. The only sources of information available are the surveys conducted by media organizations.

Based on votes cast by the operating companies using these services, Japanese banks clearly lag behind global rivals (Figure 74). They did not even make it into the top 10 in Asia, where many Japanese companies have a presence.

**Figure 74. CMS survey rankings (global)**

	2012	2011	2010	Score
HSBC	1	1	2	16,917
Deutsche Bank	2	3	3	12,786
Citi	3	2	1	10,471
Bank of America Merrill Lynch	4	10	10	4,984
JP Morgan	5	5	5	3,788
Standard Chartered	6	4	4	3,211
Commerzbank	7	8	6	3,057
RBS	8	7	8	2,739
MUFG	9	9	7	2,060
Barclays	10	6	9	1,980
Wells Fargo	11	11	11	1,864
BNY Mellon	12	12	12	1,373
Bank of China	13	20	22	1,331
SMFG	14	13	13	1,127
Mizuho	15	15	15	810
BNP Paribas	16	14	14	795
ADCB	17	19	28	769
UniCredit	18	16	16	689
Societe Generale	19	17	17	660
ING	20	18	19	628

Source: Euromoney, Citi Research.

**Figure 75. CMS survey rankings (Asia)**

	2012	2011	2010	Score
HSBC	1	1	1	13,050
Citi	2	2	2	6,177
Deutsche Bank	3	7	3	2,410
Bank of America Merrill Lynch	4	5	7	2,080
BNP Paribas	5	4	10	1,779
Standard Chartered	6	3	5	1,751
Bank of China	7	6	-	1,622
ICBC	8	-	-	756
RBS	9	8	9	727
HD Bank	10	-	-	615

Source: Euromoney, Citi Research.

## CMS key to overseas strategies

CMS is central to banks' overseas strategies in at least three regards.

First, it offers advantages in terms of funding. Corporate deposits provide a stable, low-cost source of foreign currency funding at a time when banks have limited ability to attract retail foreign currency deposits. CMS is designed to allow businesses with overseas operations to adjust their financial surplus or deficit, and any surplus funds remain with the bank in the form of deposits.

Second, transactional banking typically generates fees without any increase in risk assets, resulting in extremely high capital efficiency.

Third, it provides opportunities to broaden the pipeline of transactions with operating companies in Japan and elsewhere.

We think Japanese banks have a chance to make a comeback in this field.

As a product, CMS is heavily dependent on a bank's creditworthiness. Clients do not want to risk entrusting substantial surplus funds to a bank with questionable financial strength. Hence we think Japanese banks could retake lost ground if their relative credit ratings improved.

MUFG and the other megabanks are moving to expand their transactional banking operations. One of the pillars of MUFG's medium-term strategy involves boosting its presence in this sector while increasing related systems investment.

## (2) Trade finance

There are a variety of risk factors related to exports, imports, and other trade transactions. These include counterparty credit risk, currency risk, and geopolitical risk in the trade partner's country. In addition, the partner must settle the transaction and finance it until settlement is made. Trade finance typically refers to the full range of services designed to provide financial support for these transactions.

Figure 76 shows data provided by Euromoney-affiliated Dealogic, which monitors relatively large trade finance deals. MUFG came in second to JPMorgan in H1 2013 after topping the chart in 2012. Mizuho and SMFG both moved up one place.

**Figure 76. Global trade finance arrangers (\$mn)**

	1H CY2013	CY2012	CY2011	CY2010	Proceeds (1H 2013)	Deals (1H 2013)
JP Morgan	1	3	1	1	5,428	29
MUFG	2	1	2	3	3,678	38
Citi	3	4	3	2	3,627	30
HSBC	4	2	12	7	3,513	33
SMFG	5	6	4	4	3,025	29
Mizuho	6	7	8	5	2,715	26
BNP Paribas	7	8	5	6	1,944	25
Societe Generale	8	-	9	9	1,369	18
ING	9	5	8	8	1,275	17
DNB	10	-	7	11	1,181	8

Source: Citi Research.

As trades become increasingly computerized, the business of trade finance has become intertwined with CMS and other settlement functions, underscoring again the importance for banks of enhancing their transactional banking offerings.

## 3. Investment banking

### (1) Fees

#### Western banks remain dominant

Although Japanese institutions have steadily expanded their presence in overseas lending, including project finance and syndicated loans, they continue to lag behind large western rivals in the field of investment banking.

Figure 77 ranks banks in terms of fees earned from investment banking relating to global M&A and equity and bond issuance. The highest-ranked Japanese institution in 2013 H1 was Nomura Securities, in 14th place, with the megabanks ranked 17th to 19th.

Figure 77. Global investment banking fees (\$mn)

	1H CY2013	CY2012	CY2011	Total fees (1H 2013)
JP Morgan	1	1	1	3,016
Bank of America Merrill Lynch	2	2	2	2,806
Goldman Sachs	3	3	4	2,508
Morgan Stanley	4	4	3	2,278
Citi	5	5	6	2,142
Deutsche Bank	6	7	7	1,763
Barclays	7	8	8	1,745
Credit Suisse	8	6	5	1,663
Wells Fargo	9	10	10	1,152
UBS	10	9	9	1,124
RBC	11	11	12	996
HSBC	12	12	13	713
BNP Paribas	13	14	11	641
Nomura	14	16	17	640
Jefferies	15	17	16	501
RBS	16	13	12	498
Mizuho	17	15	15	474
SMFG	18	19	19	436
MUFG	19	20	23	403
BMO	20	18	24	342
Lazard	21	21	18	310
Scotiabank	22	24	26	299
Societe Generale	23	25	20	297
Credit Agricole	24	-	-	293
Evercore	25	-	-	271

Source: Thomson Reuters, Citi Research.

## (2) Product breakdown

### M&A

Figures 78–80 rank financial institutions by fees from specific products. Figure 78 looks at M&A fees. Japan's megabanks were entirely absent from the top 20, and Nomura Securities was the only Japanese firm to make the list.

On the whole, full-service US investment banks like Goldman Sachs and Morgan Stanley stood conspicuously above the rest, although Lazard and other boutique houses were also present. The European contingent, including Credit Suisse and UBS, was notable for its lackluster performance.

Figure 78. Investment banking fees (M&A, \$mn)

	1H CY2013	CY2012	CY2011	Total fees (1H 2013)
Goldman Sachs	1	1	1	718
Morgan Stanley	2	3	2	537
JP Morgan	3	2	3	478
Bank of America Merrill Lynch	4	5	5	459
Citi	5	9	9	419
Barclays	6	6	8	322
Lazard	7	8	10	294
Credit Suisse	8	4	4	282
Rothschild	9	11	11	258
Evercore	10	14	16	255
RBC	11	12	13	222
UBS	12	10	6	198
Deutsche Bank	13	7	7	194
Jefferies	14	13	12	154
Nomura	15	15	14	116
Greenhill	16	-	-	113
Centerview	17	-	-	101
CIBC	18	-	-	101
Houlihan	19	18	18	98
BNP Paribas	20	-	-	97

Source: Thomson Reuters, Citi Research.

## Equities

There were no major changes to the top 10 for equities. Nomura Securities, Daiwa Securities, and SMFG were the only Japanese institutions to make the top 20. SMFG's large advance was attributable to the consolidation of SMBC Nikko Securities.

Figure 79. Investment banking fees (equity issuance, \$mn)

	1H CY2013	CY2012	CY2011	Total fees (1H 2013)
Morgan Stanley	1	1	6	816
JP Morgan	2	3	1	731
Goldman Sachs	3	4	8	730
Bank of America Merrill Lynch	4	2	2	654
Citi	5	5	4	588
Credit Suisse	6	6	7	463
UBS	7	8	10	459
Deutsche Bank	8	7	3	418
Barclays	9	9	6	367
Wells Fargo	10	11	14	266
Nomura	11	12	17	261
RBC	12	10	13	201
Jefferies	13	16	20	122
HSBC	14	14	11	104
Daiwa	15	-	-	95
SMFG	16	20	23	92
BMO	17	14	29	87
Stifel/KBW	18	-	-	87
Raymond James	19	17	45	86
Macquarie	20	19	56	78

Source: Thomson Reuters, Citi Research.

## Fixed income

Nomura Securities, Mizuho, and MUFG all made the top 20 for fixed income. However, US investment banks have long dominated this market, with Fannie Mae and Freddie Mac the main source of their fees.

Figure 80. Investment banking fees (bond issuance, \$mn)

	1H CY2013	CY2012	CY2011	Total fees (1H 2013)
JP Morgan	1	1	1	1,018
Bank of America Merrill Lynch	2	2	2	908
Citi	3	3	4	755
Goldman Sachs	4	7	8	730
Deutsche Bank	5	4	3	728
Morgan Stanley	6	5	6	666
Barclays	7	6	5	603
Credit Suisse	8	8	7	506
Wells Fargo	9	9	14	433
HSBC	10	10	11	413
RBC	11	13	13	317
RBS	12	12	9	313
BNP Paribas	13	14	12	306
UBS	14	11	10	301
Nomura	15	17	17	203
Mizuho	16	15	15	149
Credit Agricole	17	16	18	139
Societe Generale	18	20	19	131
Jefferies	19	-	-	130
MUFG	20	-	-	121

Source: Thomson Reuters, Citi Research.

## 4. Japanese bank competitiveness

In light of the comparisons above, how competitive are Japanese banks relative to their global rivals? While a precise analysis is difficult because there are few areas offering easy comparisons, a number of trends can be discerned.

First, Japanese banks tend to have greater liquidity and capital and have been relatively successful in areas that may require balance sheet growth. They have become leading global players in project finance and loan syndication.

Second, Japanese institutions lag behind in transactional banking and investment banking. Although Japanese institutions are starting to focus more on CMS and other settlement services for clients with worldwide operations, we do not think it will be easy for them to catch up with the leading global players.

The need for foreign currency funding means the limits to cross-border asset growth will eventually become evident. Issues that Japanese banks need to address in this regard include securing foreign currency liquidity with stronger CMS operations and boosting non-interest income via greater involvement in primary deals.



## VII. Global comparison by region

### 1. SWOT analysis

#### (1) Quantitative analysis

To compare the attractiveness of banks around the world, we began with a broad overview of their financial position and operating environment. Figure 81 compares banks in Japan, China, the EU (ex UK), the UK, and the US<sup>1</sup> on the basis of market cap and other indicators. Specifically, we used four quantitative indicators—profitability, growth, soundness, and country strength—along with the qualitative SWOT (Strengths, Weaknesses, Opportunities, and Threats) approach.

#### Emerging economy banks retain advantage in terms of growth

Of the five regions, only China falls into the emerging economy category; the rest are mature economies. China retains a clear advantage in terms of growth and profitability. Loans and deposits outstanding continue to increase at a double-digit pace, with loans growing slightly faster than deposits. Chinese banks also have a substantial advantage in terms of profitability and financial soundness.

Outside of China, FY12 lending in local currency terms rose 6% in Japan, 1% in the US, and 1% in the UK and fell 3% in Europe. While lending at some European institutions decreased following the sale of non-core asset operations, other banks, such as HSBC and Standard Chartered, reported higher lending in the Asian region. An expected normalization of profits at banks in the US and Europe might result in high rates of net profit growth, but it would not reflect expansion of the underlying earnings base.

#### Convergence of banks in mature economies

The data confirm that—outside China—disparities in profitability between regions are narrowing. There is little variance in RoRA, an indicator that deserves greater emphasis as we enter an era of more stringent regulation. We expect RoRA at US banks will improve by 0.5ppt from FY12 over the next three years, but risk assets are likely to increase as the current Basel I regime gives way to Basel III, bringing typical RoRA in the developed economies down into the 1.0%–1.4% range. We think this trend is likely to accelerate as regulators get tougher and the financial and economic climates grow increasingly homogeneous.

We think Japanese banks have an advantage in financial soundness when liquidity, nonperforming assets, and credit costs are taken into account.

#### Comparison of national (regional) strength

We defined “national strength” as the macro environment in which banks are operating. In addition to GDP growth, we looked at government debt (including sovereign ratings) and interest rate levels.

Japan and Europe ranked lowest on this indicator because of low sovereign ratings and large public debt. The spread between short- and long-term interest rates, which positively affects bank earnings, improved over the previous fiscal year in all regions but Japan.

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<sup>1</sup> The banks used in the regional SWOT analysis are the same as those listed in Figure 87.

Figure 81.SWOT analysis by region

		Japan	China	EU	UK	US
Size						
Assets	FY2012, USD bn	6,956.8	7,093.7	15,470.2	4,826.4	5,992.1
-YoY	-	-6.9%	12.8%	0.0%	3.7%	5.0%
Deposits	FY2012, USD bn	4,449.9	5,482.9	5,660.0	2,406.7	3,112.8
-YoY	-	-5.7%	11.1%	2.7%	7.3%	5.5%
Loans	FY2012, USD bn	2,975.6	3,720.6	5,450.0	2,117.9	2,440.2
-YoY	-	-6.7%	13.5%	-1.6%	1.5%	0.9%
Profitability						
RoA	FY2012	0.4%	1.4%	0.1%	0.5%	0.8%
	FY2013E-2015E Average	0.4%	1.3%	0.3%	0.7%	1.0%
RoRA	FY2012	1.1%	2.3%	0.3%	1.4%	1.0%
	FY2013E-2015E Average	0.9%	2.1%	1.1%	1.7%	1.5%
RoE	FY2012	10.2%	21.0%	0.3%	8.4%	8.3%
	FY2013E-2015E Average	7.8%	18.7%	6.7%	10.4%	10.5%
OHR	FY2012	53.8%	38.8%	69.9%	55.3%	63.5%
	FY2013E-2015E Average	52.7%	39.3%	63.0%	52.3%	58.5%
Growth						
Loans	FY2013E	-0.6%	15.4%	-0.4%	-0.3%	2.3%
Net profits	FY2013E-2015E Average	0.8%	9.6%	79.7%	11.4%	18.2%
GDP	FY2013E	2.0%	7.4%	-0.5%	1.1%	1.6%
Soundness						
NPL ratio	FY2012	2.6%	0.9%	4.6%	4.9%	2.2%
Credit cost	FY2012	0.03%	0.42%	0.95%	0.77%	0.77%
Loan to deposit ratio	FY2012	74.0%	68.5%	95.7%	90.2%	79.7%
Core Tier 1 ratio	FY2013 E	9.3%	10.8%	9.7%	10.1%	9.3%
Tier 1	FY2012	11.7%	10.8%	12.3%	13.6%	12.4%
National power						
GDP (YoY)	FY13 E	2.0%	7.4%	-0.5%	1.1%	1.6%
Short term rate	FY13 E	0.07%	3.00%	0.56%	0.50%	0.25%
10yr Govt. bond yield	FY13 E	0.76%	3.32%	1.60%	2.15%	2.30%
Long-short term yield gap	FY13 E	0.69%	0.32%	1.04%	1.65%	2.05%
Govt. Debt (vs. GDP)	FY13 E	246	45	96	93	106
Credit rating						
Long term rating		Aa3	Aa3	Aaa~Baa3	Aa1	Aaa
Outlook		Stable	Stable	Stable~Negative	Stable	Stable
Strength		1). Financial soundness 2). Stable top line	1). High profitability 2). High growth	1). Diversified revenue 2). High capital ratio	1). Diversified revenue 2). High CET1 ratio	1). Diversified revenue 2). Depth margin
Weakness		1). Slower loan growth in Japan 2). Low profitability	1). Dependence on Loan-Deposit business 2). Low fee income	1). Low in operational efficiency 2). Vulnerable financial such as loan to deposit ratio	1). High loan to deposit ratio 2). High NPL ratio	1). Low in operational efficiency 2). High credit cost
Opportunity		1). Overseas' profit and its contribution 2). Build up new business (transaction banking)	1). Domestic strong loan growth 2). Loan growth on emerging countries	1). Rebound in profit after restructuring 2). Retrieval in Italy and Spanish banks	1). Non-core business sell-off by deleverage 2). Retrieval in bad banks such as RBS	1). Profit beef up by acquisition of EU's subsidiary sell-off 2). Settlement on Mortgage litigations
Threaten		1). Dependence on JGB in asset management and the rate impact when interest rate hikes 2). credit deterioration	1). Political and financial risks caused by shadow banking 2). credit deterioration	1). Sovereign risks 2). credit deterioration	1). Profit decline in Asia 2). credit deterioration	1). Uncertainty on regulation such as Volcker rules 2). credit deterioration

Note: Global economic outlook is from [Global Economic Outlook and Strategy - August 2013](#) dated August 21, 2013 Credit ratings are from Moody's Investor Service and are as of August 27, 2013.

Source: Citi Research.

## **(2) Qualitative analysis**

### **Contrasting strengths and weaknesses**

The qualitative strengths of Japanese banks stand in sharp contrast to those of their western rivals. Although Japanese lenders tend to have poor profitability and growth potential, they enjoy solid rating outlooks and overall financial stability.

### **Substantial opportunities for Japanese banks**

Turning to opportunities and threats, banks in many regions face a limited range of opportunities. Japanese institutions, meanwhile, enjoy opportunities in fields where they were traditionally weaker, such as overseas business and transactional banking.

Banks in the US and Europe face a number of threats, including 1) increased credit costs due to sovereign risk and economic weakness and 2) pressure on trading-related earnings from national regulatory efforts as well as Basel III and other global regulatory initiatives. In China, too, lending growth appears to have peaked, and there are fears that NPL ratios will rise as small business loans sour.

In the next section we will perform a quantitative analysis of these threats before proceeding to assess the attractiveness (comprehensive scores) of each region.

## **(3) Credit risk**

### **Banks' ability to withstand rise in credit costs**

Credit costs are one of the indicators with the greatest impact on bank earnings. We think they may rise for banks in Europe and the UK, which are already reporting high NPL ratios, and for banks in China, which may face bad loan problems going forward. We estimated the break-even point for credit costs and compared that with costs for FY12 to obtain an estimated "buffer" for credit costs.

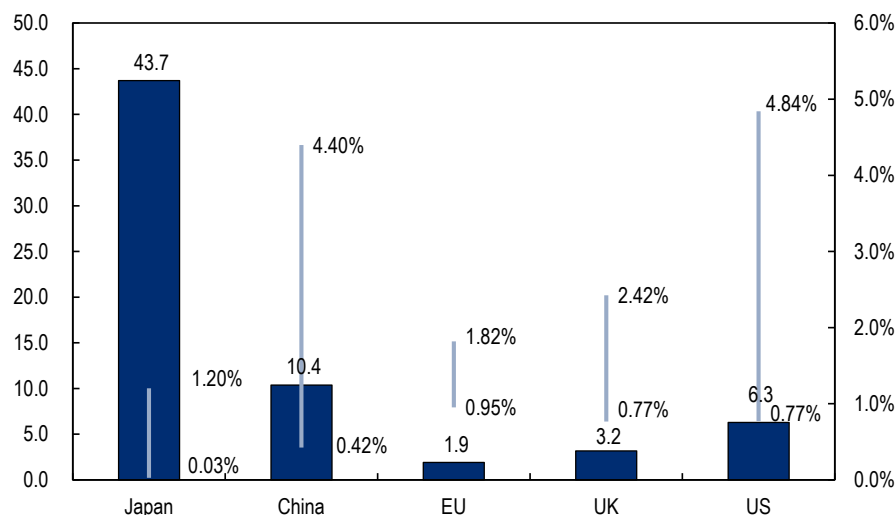
Formula for calculating break-even credit costs

$$(\text{Real net operating profit} - \text{break-even credit costs}) * (1 - \text{tax rate}) = 0$$

We calculated the break-even level and analyzed banks' ability to withstand a future increase in credit costs. For real net operating profit we used the projected average value over the three-year period from 2013 to 2015.

Figure 82 shows the ratio of break-even credit costs to current credit costs, which we used as an indicator of banks' resistance to shocks. The taller the bars in the graph, the greater banks' ability to withstand stresses.

Figure 82. Credit cost “buffer”



Note: Bars (LHS) indicate break-even credit costs as a multiple of FY12 credit costs. Lines in or above each bar (RHS) show FY12 credit costs at bottom and break-even credit costs at top.  
Source: Citi Research.

Based on this analysis, we concluded that Japanese banks have the largest credit cost buffers, followed by Chinese lenders.

Banks in regions characterized by a focus on deposits and lending have large buffers because lending—the denominator in the credit cost ratio—is relatively large, which results in a relatively low break-even credit cost ratio. In contrast, western banks tend to rely more heavily on fees and commissions income, which means lending is larger relative to real net operating profit.

#### (4) Comprehensive scores

We took the four quantitative characteristics noted above (profitability, growth, financial soundness, and national strength), added “risk resilience” in place of “threats,” and ranked regions for each characteristic on a scale of 1 to 5.

For those indicators (such as credit costs) where a lower reading is better, we reversed the sign so that a lower value corresponded to a higher ranking. We then calculated average scores for each of the five characteristics, with the sum of those averages representing the region’s comprehensive score.

Figure 83. Comprehensive scores (on scale of 1 to 5, where 5 is best)

		Japan	China	EU	UK	US
<b>Profitability</b>	-	<b>3</b>	<b>5</b>	<b>1</b>	<b>3</b>	<b>3</b>
RoA	FY12	2	5	1	3	4
-	FY13E-15E average	2	5	1	3	4
RoRA	FY12	3	5	1	4	2
-	FY13E-15E average	1	5	2	4	3
RoE	FY12	4	5	1	3	2
-	FY13E-15E average	2	5	1	3	4
OHR	FY12	4	5	1	3	2
-	FY13E-15E average	3	5	1	4	2
<b>Growth</b>	-	<b>2</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>4</b>
Loans	FY13E	1	5	2	3	4
Net profit	FY13E-15E average	1	2	5	3	4
GDP	FY13E	4	5	1	2	3
<b>Soundness</b>	-	<b>3</b>	<b>4</b>	<b>2</b>	<b>3</b>	<b>3</b>
NPL ratio	FY12	3	5	2	1	4
Credit cost	FY12	5	4	1	3	2
Loan to deposit ratio	FY12	4	5	1	2	3
Core Tier1 ratio	FY13 E	1	5	3	4	2
Tier 1	FY12	2	1	3	5	4
<b>National power</b>	-	<b>2</b>	<b>3</b>	<b>2</b>	<b>4</b>	<b>4</b>
GDP (YoY)	FY13 E	4	5	1	2	3
Long-short term yield gap	FY13 E	2	1	3	4	5
Govt. Debt (vs. GDP)	FY13 E	1	5	3	4	2
Credit rating	-	2	2	1	4	5
<b>Risk tolerability</b>	-	<b>5</b>	<b>4</b>	<b>1</b>	<b>2</b>	<b>3</b>
Breakeven credit cost	-	5	4	1	2	3
<b>Total = comprehensive score-</b>		<b>15</b>	<b>20</b>	<b>9</b>	<b>15</b>	<b>16</b>

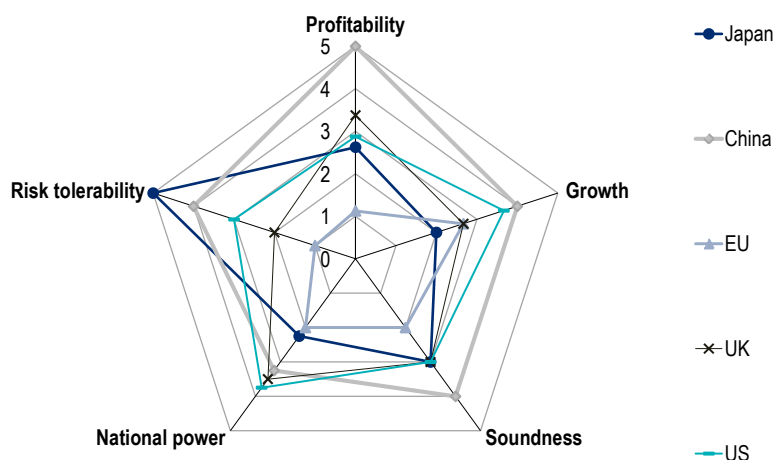
Source: Citi Research.

Chinese banks ranked highest in this exercise, followed by Japan, the US, the UK and Europe, in that order.

China received high scores for all indicators, and its radar chart came close to being a regular pentagon (Figure 84). While Japan lagged behind on profitability and national strength, it received high scores for risk resilience and financial soundness. Given the potential for earnings growth in transactional banking and other areas Japanese banks are currently focusing on, we think the current chart could develop into a more regular pentagon over time.

We next compared implied risk premia and expected growth rates and sought to determine the attractiveness of current share prices in light of the comprehensive scores.

Figure 84. Comprehensive scores radar chart



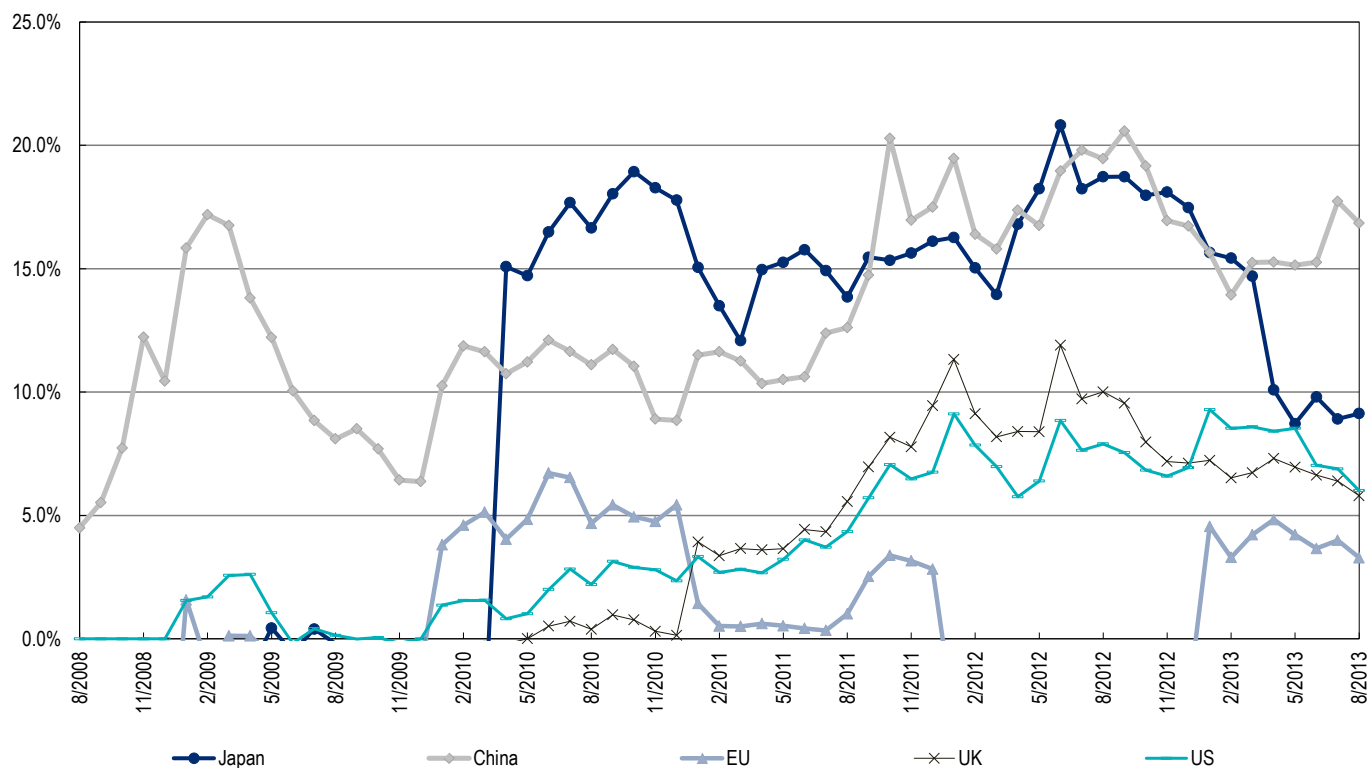
Source: Citi Research.

## 2. Implied risk premia and expected growth rates

Financial sector shares fell sharply following the global financial crisis as investors priced in high risk premia.<sup>2</sup> Figure 85 shows trends in the implied risk premia<sup>2</sup> for leading global banks as back-calculated from share prices. Risk premia for financial institutions have gradually declined in 2013 and have recently settled in the 6–9% range in Japan, the UK, and the US.

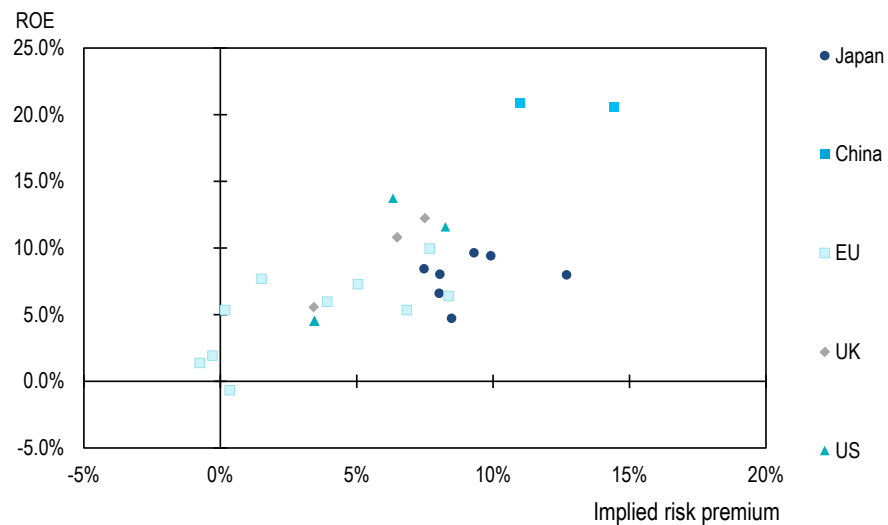
<sup>2</sup> The implied risk premium was defined as the reciprocal of the PER (market cap / net profit) less the 10-year government bond yield in each country or region.

Figure 85. Implied risk premia



Source: Citi Research.

Figure 86. RoE and implied risk premia



Source: Citi Research.

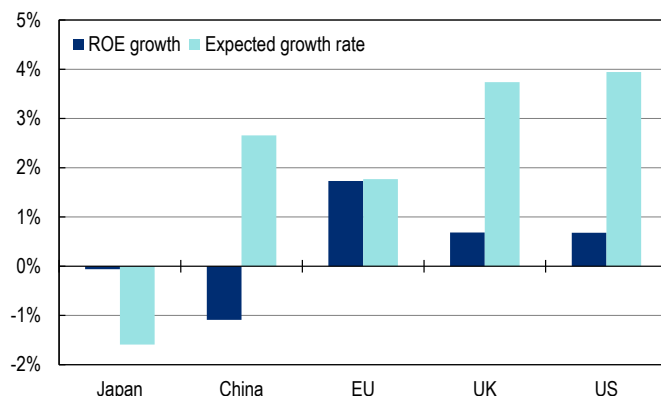
Figure 87. Implied risk premia vs. expected growth rates, RoE growth rates, and normalization upside

	1/PE=(r-g) a	IRP=a- Gov.bond yield b	RoE (FY2013E) c	RoE (FY2014E) d	RoE growth e=d-c	Expected growth rate f=c-b	Difference g=e-f	Theoretical risk premium h=b-g	Upside i=a/h-1
<b>Japan</b>									
Mizuho	10.7%	9.9%	9.4%	9.5%	0.1%	-0.5%	0.6%	9.3%	15.5%
MUFG	8.8%	8.0%	6.6%	7.0%	0.4%	-1.4%	1.8%	6.2%	42.8%
SMFG	10.1%	9.7%	9.6%	9.9%	0.2%	-0.1%	0.3%	9.4%	7.5%
Resona	13.5%	12.7%	8.0%	7.9%	-0.1%	-4.7%	4.6%	8.1%	67.1%
SMTH	8.3%	7.5%	8.4%	9.0%	0.6%	1.0%	-0.4%	7.8%	5.6%
Shinsei	8.9%	8.1%	8.0%	8.9%	0.9%	0.0%	0.9%	7.1%	23.9%
Aozora	9.3%	8.5%	4.7%	4.4%	-0.3%	-3.8%	3.5%	5.0%	85.1%
<b>Average</b>	<b>9.9%</b>	<b>9.2%</b>	<b>7.8%</b>	<b>8.1%</b>	<b>0.3%</b>	<b>-1.4%</b>	<b>1.6%</b>	<b>7.6%</b>	<b>31.4%</b>
<b>China</b>									
CCB	18.2%	14.4%	20.6%	19.7%	-0.9%	6.2%	-7.1%	21.5%	-15.5%
ICBC	14.7%	11.0%	20.9%	19.5%	-1.3%	9.9%	-11.2%	22.2%	-33.8%
BoC	28.9%	25.1%	17.0%	16.0%	-1.0%	-8.1%	7.1%	18.1%	59.7%
<b>Average</b>	<b>20.6%</b>	<b>16.8%</b>	<b>19.5%</b>	<b>18.4%</b>	<b>-1.1%</b>	<b>2.7%</b>	<b>-3.7%</b>	<b>20.6%</b>	<b>-0.1%</b>
<b>EU</b>									
BNP Paribas	7.1%	5.0%	7.3%	8.1%	0.8%	2.2%	-1.4%	6.4%	10.4%
Credit Agricole	10.4%	8.4%	6.4%	6.9%	0.5%	-2.0%	2.5%	5.9%	76.2%
Commerzbank	2.0%	0.3%	-0.7%	3.5%	4.2%	-1.0%	5.2%	-4.8%	-141.7%
Deutsche Bank	8.5%	6.8%	5.3%	7.6%	2.3%	-1.5%	3.8%	3.0%	180.8%
Intesa Sanpaolo	4.1%	-0.3%	1.9%	3.4%	1.4%	2.2%	-0.8%	0.5%	776.8%
UniCredit	3.7%	-0.7%	1.4%	2.6%	1.2%	2.1%	-0.9%	0.1%	2494.7%
BBVA	6.2%	1.5%	7.7%	6.7%	-1.0%	6.2%	-7.1%	8.7%	-28.8%
Santander	4.8%	0.2%	5.3%	7.1%	1.7%	5.2%	-3.4%	3.6%	34.3%
Credit Suisse	8.7%	7.7%	10.0%	11.9%	2.0%	2.3%	-0.3%	8.0%	8.9%
UBS	5.3%	3.9%	6.0%	10.1%	4.1%	2.0%	2.1%	1.9%	188.0%
<b>Average</b>	<b>6.1%</b>	<b>3.3%</b>	<b>5.1%</b>	<b>6.8%</b>	<b>1.7%</b>	<b>1.8%</b>	<b>0.0%</b>	<b>3.3%</b>	<b>83.0%</b>
<b>UK</b>									
HSBC	8.8%	6.5%	10.8%	10.1%	-0.7%	4.3%	-5.0%	11.5%	-22.9%
Lloyds BG	5.8%	3.4%	5.6%	8.2%	2.7%	2.2%	0.5%	2.9%	97.7%
Standard C	9.8%	7.5%	12.2%	12.3%	0.1%	4.8%	-4.7%	12.2%	-19.1%
<b>Average</b>	<b>8.2%</b>	<b>5.8%</b>	<b>9.5%</b>	<b>10.2%</b>	<b>0.7%</b>	<b>3.7%</b>	<b>-3.1%</b>	<b>8.9%</b>	<b>-7.9%</b>
<b>US</b>									
Bank of America	6.0%	3.4%	4.5%	7.2%	2.7%	1.1%	1.6%	1.8%	226.8%
JP Morgan Chase	10.8%	8.3%	11.6%	10.9%	-0.6%	3.3%	-4.0%	12.2%	-11.4%
Wells Fargo	8.9%	6.3%	13.7%	13.7%	0.0%	7.4%	-7.4%	13.7%	-35.2%
<b>Average</b>	<b>8.6%</b>	<b>6.0%</b>	<b>10.0%</b>	<b>10.6%</b>	<b>0.7%</b>	<b>3.9%</b>	<b>-3.3%</b>	<b>9.3%</b>	<b>-7.4%</b>

Note: IRP = implied risk premium  
Source: Citi Research.

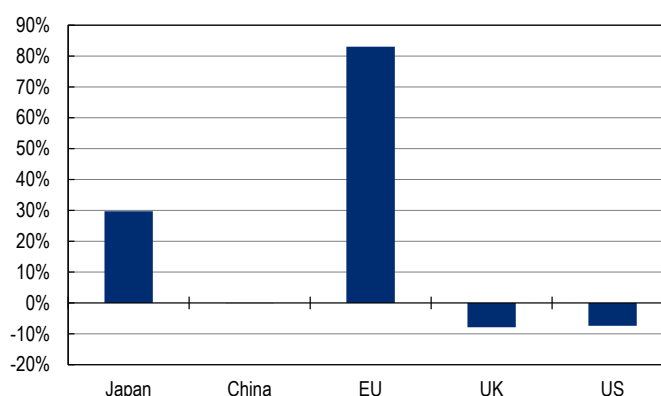


Figure 88. Projected RoE growth versus growth being priced into shares (FY13–FY14)



Source: Citi Research.

Figure 89. Upside of risk premium normalization



Source: Citi Research.

### Market should reconsider Japanese bank shares

In Figure 87 we calculated the zero-growth risk premium based on global average implied risk premia and average RoE growth forecasts, and based on that we estimated the rate of growth being factored into share prices. Figure 88 shows the gap between actual growth forecasts and the expected growth rates being priced into shares.

Figure 89 illustrates the estimated upside for share prices in the event this gap were eliminated. The upside was highest for banks in Japan and Europe. The European banking sector still faces a number of major issues, including banking union, capital injections, and full or partial waivers of government debt. We think Japan has lower investment risk since market conditions have already begun to turn around. Although Japanese banks' poor profitability has tended to attract lower valuations than those afforded western institutions, we think it is time for the market to take another look at Japanese bank shares given their excessively large risk premia.

## VIII. Global outlook for Japanese banks

### 1. Regulation and Japanese banks

#### (1) Regulatory framework largely in place

##### Basel III

The Basel Committee on Banking Supervision (BCBS) reached basic agreement on the implementation of Basel III in September 2009 followed by a final agreement in December 2010, with the new regulatory framework set to be adopted in January 2013. But only a handful of countries—of which Japan was one—actually introduced Basel III on schedule. The EU is expected to do so in 2014, a year behind schedule, and the US in 2015, two years late.

Nevertheless, we think the central components of the new framework—the rules for capital adequacy, liquidity, and leverage—are unlikely to change, although the liquidity coverage ratio (LCR) rule will be watered down. For more on the Basel III framework, see our February 25, 2011 report [Basel primer \(fourth edition\) - The final edition](#).

Figure 90. Basel III framework

	Capital ratio	Leverage	Liquidity
Scope of regulation	Common Equity Tier 1 ratio (X) Tier I ratio (Y) Total capital adequacy ratio (Z)	Leverage ratio	Short term funding measure=LCR (Liquidity Coverage Ratio) Long term funding measure=NSFR (Net Stable Funding Ratio)
Required capital	$X \geq 4.5\%$ , $Y \geq 6.0\%$ , $Z \geq 8.0\%$ (Res. 7%, 8.5%, 10.5% including capital conservation buffer)	More than 3%	More than 100% for each measure
Implementation	Jan 2013	Full implementation from Jan 2018	LCR: Full implementation from Jan 2015 NSFR: Full implementation from Jan 2018
Transition period	Transition period till Jan 2019	Test period from Jan 2013	Test period from Jan 2013
Buffer for pro-cyclicality	Capital conservation buffer, counter cyclical buffer		

Source: Citi Research.

The new capital rules are set to be adopted in stages between now and 2019 (with transition measures in place until 2023 for non-compliant capital instruments). The LCR rules are scheduled to be adopted gradually starting in 2015, while the rules governing the net stable funding ratio (NSFR) and leverage are set to be introduced in 2018.

#### Conditions at Japanese banks

Although the main Japanese banks do not currently provide any disclosure regarding leverage or liquidity ratios, they appear to have already satisfied the requirements for 2015.

Of the Japanese banks that have already adopted Basel III, institutions applying the international capital standards and a few applying the domestic rules are already providing detailed breakdowns of their capital ratios. While most banks are officially disclosing ratios only on a phased-in basis, it is possible to produce accurate estimates for the situation after Basel III is fully implemented—which is what the market is interested in—based on currently available data.

Figure 91 compares common equity Tier 1 (CET1) ratios for leading global banks after full adoption of Basel III. (The figures for Chinese banks are on a phased-in basis.)

Based on these data, we conclude that Japanese banks—and the megabanks in particular—have been quicker than global rivals to comply with the tough new capital rules.

**Figure 91. Global comparison of common equity Tier 1 ratios (after full adoption of Basel III)**

		FY12	FY13E	FY14E	FY15E
Mizuho	Japan	8.74%	8.93%	9.67%	10.42%
MUFG	Japan	11.13%	11.98%	12.71%	13.44%
SMFG	Japan	8.66%	9.39%	10.23%	11.06%
Resona	Japan	5.73%	6.35%	7.03%	7.71%
SMTH	Japan	6.49%	7.12%	7.83%	8.53%
Shinsei	Japan	7.70%	9.08%	9.77%	10.45%
Aozora	Japan	11.97%	12.34%	12.80%	13.26%
CCB	China	11.3%	11.3%	11.6%	11.9%
ICBC	China	10.6%	10.5%	10.8%	11.2%
BoC	China	10.5%	10.5%	10.6%	10.8%
BNP Paribas	EU	9.85%	10.64%	11.11%	11.63%
Credit Agricole SA	EU	6.12%	8.88%	9.69%	10.79%
Commerzbank	EU	7.59%	8.90%	9.61%	10.40%
Deutsche Bank	EU	8.01%	10.05%	10.93%	12.24%
Intesa Sanpaolo	EU	9.9%	9.9%	10.0%	10.2%
UniCredit	EU	9.2%	9.6%	9.8%	10.5%
BBVA	EU	7.35%	9.00%	9.24%	9.64%
Santander	EU	6.65%	8.00%	8.56%	8.44%
Credit Suisse	EU	8.06%	10.17%	11.47%	11.49%
UBS	EU	9.76%	11.62%	13.50%	13.83%
HSBC	UK	9.79%	10.45%	10.84%	11.24%
Lloyds BG	UK	8.05%	9.27%	10.60%	11.78%
Standard C	UK	10.70%	10.60%	10.60%	10.60%
Bank of America	US	9.25%	9.56%	10.05%	10.05%
JP Morgan Chase	US	8.70%	9.59%	10.45%	10.45%
Wells Fargo	US	8.18%	8.83%	9.52%	9.52%

Note: Figures for Chinese banks are on phased-in basis. Preferred shares issued to governments have been stripped out.

Source: Citi Research estimates.

## (2) Remaining uncertainties

### Simplification of capital ratios

We think there is still room for a revamping of the current capital rules in at least two regards. One is simplification. In July the BCBS released the following two papers:

- “Report on the regulatory consistency of risk-weighted assets in the banking book”: <http://www.bis.org/press/p130705.htm>
- “The regulatory framework: balancing risk sensitivity, simplicity and comparability”: <http://www.bis.org/publ/bcbs258.htm>

The papers note that risk weightings based on Basel II’s IRB approach vary significantly between countries and even between individual banks, and that one reason for this is the complex method of calculating risk weightings.

In the US as well there is a growing focus on leverage ratios based on simple balance sheet numbers rather than risk-weighted capital adequacy ratios (see below).

## Interest rate risk in banking book

Another issue involves the review of the trading and banking book classifications. A key question is whether interest rate risk in the banking book should be reflected in capital ratios.

The liability side of bank balance sheets typically has a short duration, since most funding comes from deposits. A duration mismatch occurs when banks acquire assets such as bonds and fixed-rate mortgages. Under the current system, the risk stemming from this mismatch is not reflected in capital ratios—which are intended to measure a bank's financial soundness—as long as those assets are held in the banking book. The so-called outlier level of Basel II was created as a framework for supervising banks carrying excessive interest rate risk in their banking books.

However, some argue that such monitoring alone is insufficient and that this mismatch should also be reflected in the capital ratios.

If Japanese banks were forced to reflect the risk of holding JGBs in their capital ratios, we think the impact would be greater than that of Basel III—and could perhaps be described as Basel 3.5.

We carried out two related estimates.

If all bonds were included in trading book...

Past papers released by the BCBS and the Financial Stability Board (FSB) posit that the arbitrary classification of securities with a market value into the banking book or trading book is not a healthy practice.

We estimated the impact of including all bonds in the trading book. Figure 92 shows our estimates based on the duration method, a primitive method of assigning risk weights that can be used when all bonds are classified as part of the trading book.

**Figure 92. Estimated impact on capital ratios of including all bonds in trading book (end-March 2013, ¥bn)**

	Bond holdings	Duration (yr)	Risk weight	Increase of RWA	RWA	Capital adequacy ratio impact
Mizuho	34,043.3	2.5	1.75%	659.4	58,823.6	-0.10%
MUFG	51,473.0	3.2	1.75%	913.2	87,968.6	-0.12%
SMFG	24,525.3	1.8	1.25%	550.7	62,426.1	-0.08%
Resona	6,990.7	2.7	1.75%	244.2	17,405.0	-0.08%
SMTH	2,965.6	2.3	1.75%	70.7	19,421.6	-0.02%
Shinsei	936.6	3.0	2.25%	5.5	6,320.6	-0.01%
Aozora	540.5	2.7	1.75%	19.1	2,975.0	-0.08%
Total	121,475.0	2.8	-	2,462.7	255,340.5	-0.09%

Note: Based on FSA notification on market risk standards. Duration includes estimates.

Source: Company data, Citi Research estimates.

The estimated impact on capital ratios is not particularly large. However, that only means banks will not have problems managing their capital ratios if all bonds are considered part of the trading book for regulatory purposes. If banks were also forced to include bonds in the trading book for accounting purposes, the unrealized gains or losses would constantly be reflected in net profit, threatening banks' ability to continue buying bonds.

If capital charges were assessed on interest rate risk in banking book...

Another method involves focusing not just on bonds but on all interest rate risk in the banking book. Figure 93 provides a conservative analysis of the impact of such a move.

First, we used the outlier level to estimate the economic impact of such a change. There are two ways to calculate the outlier level: either 1) calculate the 99% confidence interval for interest rate risk, or 2) calculate the maximum interest rate risk resulting from a 2% parallel shift in the yield curve. In the table below, “VaR” indicates the first method and “2% shift” the second. Since VaR generally tends to produce a smaller estimated impact, we assumed that all banks used VaR and reduced by 50% the estimated impact for banks using the 2% method (“Translated to VaR” in the table).

Second, the outlier level tends to be smaller when the “core deposits model,” which models deposit yields, is used. As such, we assumed the estimated impact would be reduced by half at banks newly adopting the core deposits model (“Core deposits model” in the table).

The estimated economic losses were then converted to risk asset equivalents. The fundamental approach underlying capital adequacy rules is that total shareholders’ equity should be able to absorb the maximum loss at a 99.9% confidence level and that “core equity” should be able to absorb the maximum loss at a 99% confidence level.

Based on this approach, we used a multiplier of 12.5 (the reciprocal of the 8% minimum required capital ratio) to convert the estimated loss into risk assets.

**Figure 93. Estimated capital ratio impact of converting interest rate risk in banking book into risk assets (end-March 2013, ¥bn)**

	Total capital	Outlier stat	Method	Core deposit model (CDM)	Losses at stress	Translated to VaR	If use CDM	RWA translation	Capital adequacy ratio impact
Mizuho	8,344.5	5.9%	VaR	X	492.3	492.3	246.2	3,077.0	0.46%
MUFG	14,673.9	9.0%	VaR	X	1,316.2	1,316.2	658.1	8,226.6	1.04%
SMFG	9,186.0	1.0%	VaR	X	91.9	91.9	45.9	574.1	0.08%
Resona	2,554.1	2.5%	VaR	O	63.9	63.9	63.9	798.2	0.26%
SMTH	2,738.5	0.5%	VaR	O	13.7	13.7	13.7	171.2	0.06%
Shinsei	734.4	9.8%	2% shift	X	71.9	35.9	18.0	224.7	0.27%
Aozora	466.2	7.3%	VaR	X	34.0	34.0	17.0	212.7	0.86%

Source: Company data, Citi Research estimates.

Here the impact is significant. While our estimates do not suggest any banks would find themselves facing a capital shortage, we think some would at least be forced to modify their JGB investment strategies.

Future developments in “Basel 3.5” will need to be closely monitored.

## US regulation

In the US there has been a great deal of discussion about tightening regulation even though Basel II has yet to be properly implemented. Work on establishing specific rules under the Dodd-Frank act, which became law in July 2010, has fallen far behind, with some 60% of the necessary changes still unfinished. Meanwhile, the Fed has jointly issued a new regulatory proposal with the FDIC and OCC despite continuing uncertainty over its feasibility.

Basically, the proposal calls for requiring bank holding companies with assets of at least ¥70trn to meet a 5% minimum leverage ratio (6% at affiliated banks participating in the deposit insurance system). While the US proposal calls for implementing this requirement in stages beginning in 2018, we think it is quite restrictive, given that Basel III sets a minimum leverage ratio of 3% and then only provisionally. We will be watching developments in this area closely since there is no guarantee the BCBS will not adopt the US proposal. Some supervisors in Europe are already arguing that the leverage ratio for eurozone banks should be set at about 4%.

There was also a call for public comments through last December on tightening regulation of key foreign financial institutions active in the US. Under the proposal, foreign financial institutions having assets above a certain level in the US (excluding branches) will become subject to the same rules as domestic financial institutions.

Among Japanese financial institutions, we think MUFG would probably fall under the new rule. In addition to forming an intermediary holding company to bundle its US businesses, MUFG would need to fulfill a variety of reporting, capital, and liquidity requirements. Capital requirements could be met by modifying the bank's internal capital allocation, but the liquidity rules would probably require a carefully thought-out response, taking into account the possibility of stress tests.

### **(3) Regulatory constraints on Japanese banks**

As Japanese banks were among the first to comply with Basel III, we do not think global financial regulation will hinder their growth.

However, the ongoing reviews of certain areas, such as interest rate risk in the banking book, will need to be monitored, including the practical details of any new regulations.

And as we anticipate a tougher approach to liquidity supervision by national authorities, we think Japanese banks will need to carefully manage their foreign currency funding for the purchase of overseas assets.

## **2. Banks and the Japanese economy**

### **(1) Abenomics and reflation**

#### **Impact of Abenomics**

Since the LDP returned to power in last year's Lower House election, its presentation of clearly defined economic and monetary policies has not only lifted market expectations but has produced signs of improving business confidence. Many market participants remain skeptical about the impact and ultimate feasibility of Abenomics—and particularly about whether a 2% inflation rate and a 1% real GDP growth rate (for a nominal growth rate of 3%) can be achieved.

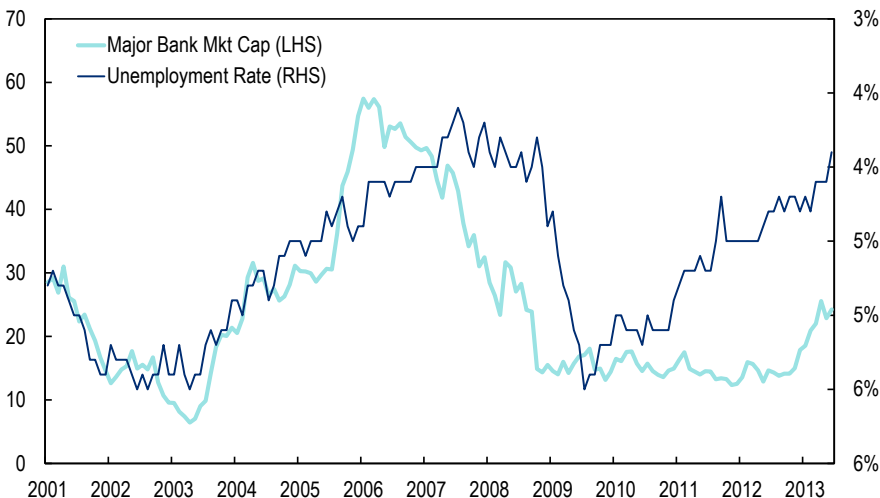
Nevertheless, given the BoJ's solid commitment to monetary accommodation and the Abe administration's strong stance on the growth strategy, we think the landslide win in the Upper House election in July has given the government the political capital it needs to carry out concrete measures.

#### **Bank shares have lagged behind economic indicators**

The banking sector is a reflection of the macroeconomy, and in the past bank shares have often served as leading indicators of the broader economy. Figure 94

plots the market cap of large banks against the official unemployment rate since 2001.

**Figure 94. Seasonally adjusted unemployment rate vs. large bank market cap (¥trn)**



Source: MIC, Citi Research.

The two followed each other very closely until 2006, but from then until around 2010 the increase in unemployment lagged behind the decline in bank market cap. Although the unemployment rate has been improving steadily for the most part since the second half of 2012, bank market cap has yet to close the gap that opened up between 2010 and 2012.

Consumer confidence on the whole is already improving, something we think will have a positive effect on bank earnings via a variety of channels. We think the market will eventually reconsider its view of bank shares.

### Reflation and bank earnings

We analyzed a variety of scenarios in our June 19 report [Financial sector outlook—Summer 2013 - Market too fixated on yield curve risk?](#) Readers should refer to that report for detailed results of our analysis, but here we will try to estimate the impact on bank earnings of the reflationary effect from Abenomics based on assumptions thought to be highly likely.

### Assumptions

**Short-term interest rates:** We assume short-term rates will remain at current levels. We think this is a realistic assumption because the Bo has explicitly indicated its intention to keep short-term rates at current levels until it achieves its inflation target.

**Long-term interest rates:** We assume the 5-year JGB yield will rise to 0.43%, up 30bps from 0.13% at end-March 2013, and that the 10-year yield will rise to 1.06%, up 50bps from 0.56% at end-March. As of end-August the 5- and 10-year yields stood, respectively, at 0.31% and 0.78%, and we think a rise in long-term rates to the assumed levels will follow naturally as inflation expectations pick up.

Lending growth: We assume domestic lending will grow at an annual rate of 2% and that overseas lending will grow by 10% a year. These assumptions are based on the continuation of recent rates of growth and are probably conservative if we take into account future growth in economic activity.

Exchange rates: We assumed a rate of ¥100/\$ which we think is reasonable given the BoJ's increasingly accommodative stance.

Investment trust sales: We assumed sales would grow about 30% a year. Sales have increased by 100% to 200% YoY in some months this year, but we think the assumption of 30% growth is reasonable.

### Impact on earnings

Figure 95 shows our estimates of the boost to bank earnings (relative to company forecasts for FY13) after taking these assumptions into account. Readers should consult the report cited above for the sensitivity of these estimates to each of the assumptions above.

Figure 95. Impact on bank earnings of Abe's monetary and economic policies (¥bn)

	Change in yield	Domestic loan growth (1%)	Overseas loan growth (1%)	FX rate (10¥/\$)	Investment trust sales +10%	Total impact	(after tax)	FY13 NP (CoE)	Impact upon NP	(Ref) FY13 Q1 NP/FY13 NP (CoE)
Mizuho	78.6	12.8	11.9	30.0	13.8	147.1	92.7	500.0	18.5%	49.6%
MUFG	185.8	16.0	27.0	45.0	25.5	299.3	188.6	760.0	24.8%	33.6%
SMFG	129.1	14.2	19.8	35.0	24.0	222.2	140.0	580.0	24.1%	49.7%
Resona	14.3	8.3	0.0	0.0	12.3	34.9	22.0	145.0	15.2%	42.9%
SMTH	25.2	3.2	2.0	6.0	16.9	53.3	33.6	130.0	25.8%	30.1%
Shinsei	6.0	1.0	0.1	0.0	3.5	10.6	6.6	48.0	13.9%	26.6%
Aozora	6.2	0.6	0.2	0.0	0.9	8.0	5.0	41.0	12.3%	32.5%
Total	445.2	56.2	61.0	116.0	96.9	775.3	488.4	2,204.0	22.2%	41.7%

Source: Citi Research.

This analysis does not reflect the expansion of business opportunities in growth sectors such as agriculture, energy, medicine, and nursing from deregulation or the adoption of frameworks such as public-private partnerships (PPPs) for the construction of social infrastructure. As such, we think the reality could substantially outperform these projections depending on the reforms instituted by the Abe administration.

## 3. Overseas strategies and trajectory

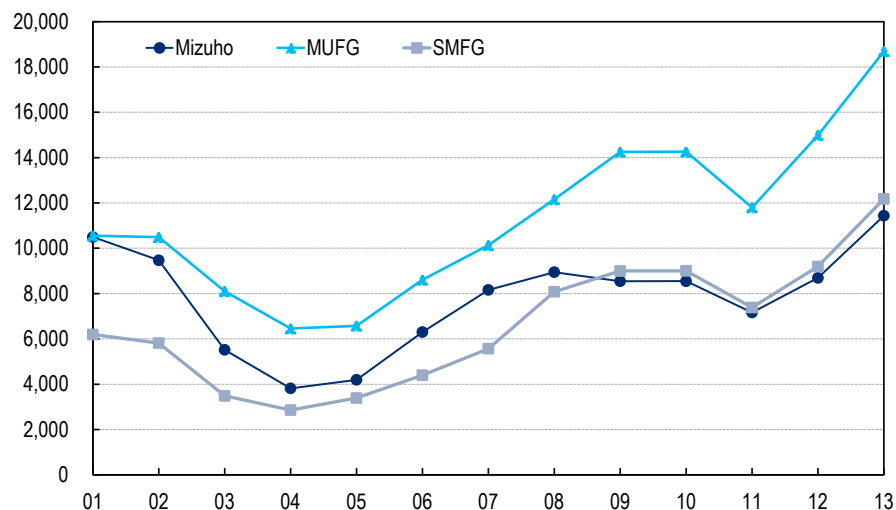
### (1) Japanese banks' overseas activity

#### Overseas business expanding steadily

Megabanks' overseas lending is growing rapidly, and M&A activity is also starting to pick up. Dollar-based growth over the last few years has been 10% to 20% annualized, and the weaker yen has generated annualized growth of about 27% in yen terms over the last two years.



Figure 96. Megabanks' overseas loans outstanding (¥bn)



Source: Company data, Citi Research.

M&A activity in Asian markets has also picked up in the last year, with Japanese banks taking capital stakes in a number of leading local banks in Thailand, Vietnam, and Indonesia.

Figure 97. Recent investments in Asia by Japan's megabanks

Announce Date	Closing Date	Target	Country	Amount (Currency)	Yen value (¥bn)	Stake	Valuation	Seller	Expected NP contribution (¥bn)	Description
Mizuho* 9/30/2011	3/31/2012	Vietcombank	Vietnam	23,463 VND bn	43.4	15%	PBR 3x	New shares	1.2	One of the big four banks, state ownership 77.1%
MUFG** 7/2/2013	11/30/2013	Bank of Ayudhya	Thailand	118.4-177.6 THB bn	358-537	50%-75%	PBR 1.9x	GE and open market	25.0 (50% stake)	#1 bank in credit card, consumer finance in Thailand
SMFG 5/8/2013	5/10/2013	BTPN	Indonesia	15,184 INR bn	135	40%	PBR 3x	TPG	8.0	Traditionally public retirement based financing businesses but microfinance now becomes growth driver.

Note: \*Mizuho's investment estimated based on financial statements of Vietcombank; assumed contribution to consolidated net profit from MUFG's investment in Bank of Ayudhya includes amortization of ¥200bn in goodwill over 20 years.

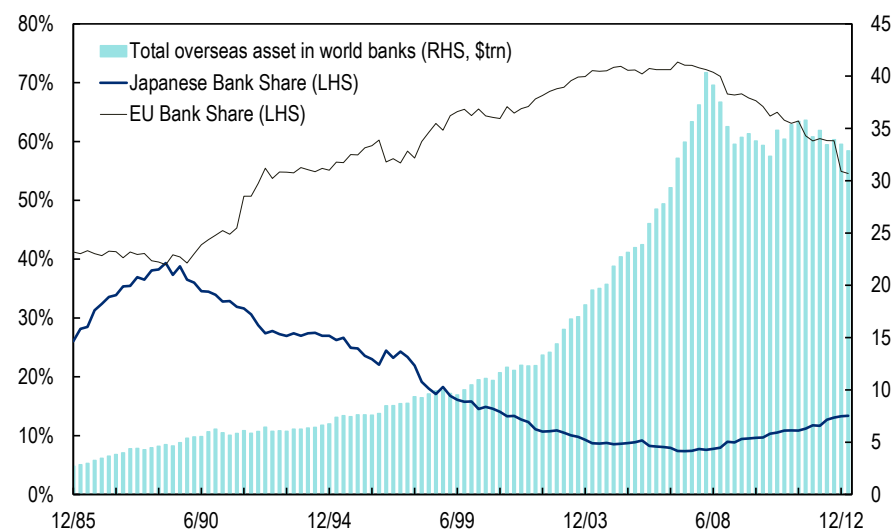
Source: Company data, Citi Research.

## Global cyclicalities

Japanese and European banks have tread contrasting paths in their international operations, underlining cyclical changes in leadership. Figure 98 shows the share of total assets held by global banks outside their home countries. Effectively it shows the presence of Japanese and European banks relative to total cross-border investment and lending activity around the world.

The chart makes it clear that Japanese and European banks have moved in opposite directions. Japanese banks' share of global lending peaked at around 40% in 1989, while European banks' market share hit bottom in that year and steadily increased afterwards.

**Figure 98. Overseas lending by global banks; market shares of Japanese and European institutions**



Source: BIS, Citi Research.

European banks' global market share peaked, however, in the aftermath of the global financial crisis, and the share of Japan's banks bottomed at the same time. The history of finance sometimes displays long-term cyclicalities, and in this case the overseas activity of Japanese and European banks has exhibited almost perfect symmetry.

As banks in Europe—and particularly those outside the UK—de-leverage, Japanese banks, whose ample liquidity, capital, and stable domestic market enables them to expand overseas—are *re-leveraging*.

## (2) Overseas strategies and efficiency

### Capital efficiency and profitability

The megabanks' overseas investments are more profitable than their domestic operations. Figure 99 compares the attributes of corporate loans to overseas and domestic customers. Although all of the megabanks disclose information about risk weightings and expected loss rates under the third pillar of Basel II, only SMFG breaks down these data into domestic and overseas segments. For Mizuho and MUFG, we have made our own estimates using overall lending data and domestic/overseas exposure ratios based on the assumption they have the same domestic-to-overseas risk profile as SMFG in 2013.

**Figure 99. Comparison of domestic and overseas corporate loan profitability**

	Mizuho	MUFG	SMFG
Feature of Overseas Corp Loans			
(Loan Share)	21.88%	27.37%	26.84%
Average Risk Weight	26.85%	28.82%	20.45%
Average Spread	1.04%	1.08%	1.15%
Expected Loss Ratio	0.24%	0.26%	0.10%
Net margin	0.80%	0.82%	1.05%
RoRA (pretax)	2.99%	2.84%	5.13%
Feature of Domestic Corp Loans			
(Loan Share)	78.12%	72.63%	73.16%
Average Risk Weight	47.56%	51.07%	36.22%
Average Spread	0.81%	0.73%	0.90%
Expected Loss Ratio	0.36%	0.39%	0.15%
Net margin	0.46%	0.34%	0.75%
RoRA (pretax)	0.96%	0.67%	2.07%
Average Risk Weight in Total Corp Loans	43.03%	44.98%	31.99%
Overseas/Domestic RoRA (x)	3.10 x	4.27 x	2.48 x

Source: Company data as of end-March 2013, Citi Research estimates.

This comparison makes it clear that foreign loans carry a lower risk weighting than domestic loans and therefore attract a smaller regulatory capital charge, so lending growth has less of an impact on capital ratios. Although a low risk weighting implies low margins, loan spreads and the net margins on overseas lending are actually much higher than those on domestic loans after stripping out expected loss rates.

RoRA (Return on Risk Assets), which provides a combined picture of risk and margins, is anywhere from 2.5 times to 4.0 times higher for overseas loans than for domestic loans.

One reason is the intense competition for borrowers in Japan's domestic market. The imbalance created by a deep pool of deposits and limited demand for loans has resulted in low loan-to-deposit ratios for Japanese banks. We think this is an important reason why domestic lending margins remain depressed.

### **(3) Asia's consumer finance market**

#### **Developing retail credit markets**

Indonesia's BTPN, which SMFG now accounts for using the equity method, has maintained strong profit growth fueled by microfinance. Thailand's Bank of Ayudhya, which MUFG plans to obtain a 50% stake in by the end of 2013, is the market leader in consumer loans and credit cards and is also one of the nation's top providers of auto loans.

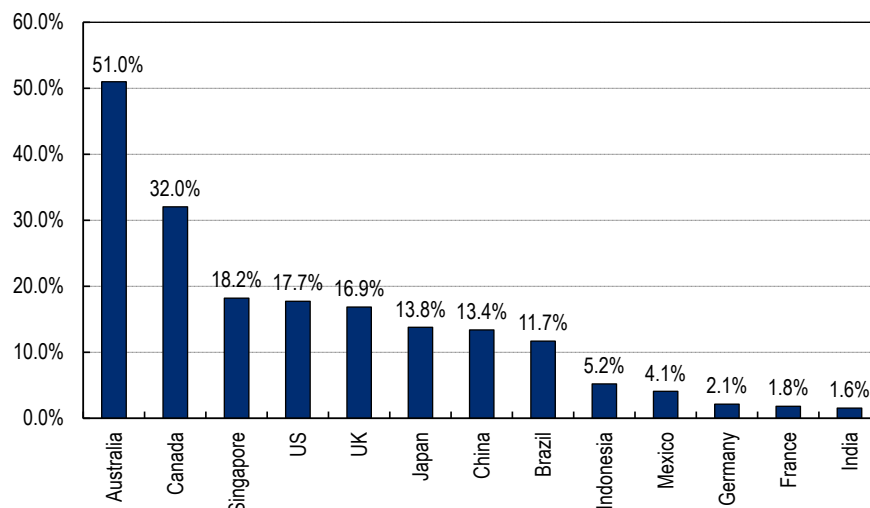
Japanese banks have traditionally focused on supporting Japanese and western companies in Asian markets, but in the future we think they will increasingly target the retail segment as well in a bid to develop new markets.

#### **Asian retail credit market from a global perspective**

Figure 100 provides a global comparison of credit card use as a percentage of household disposable income in 2011. As this ratio is influenced by the propensity to save, a small ratio is not necessarily solid evidence of infrequent use of credit cards, but it should give us some indication of the trend.

Within Asian, credit card use is high in Singapore and low in Indonesia and India. The low reading for France is attributable to the relative popularity of debit cards there.

Figure 100. Credit card use as % of disposable income (2011)



Source: Lafferty World Cards Intelligence, Haver Analytics, Citi Research.

Figures 101 and 102 compare the number of credit cards and debit cards issued per 100 adults in various countries. Although there is no obvious trend over time, the ASEAN countries do seem to exhibit potential.

Figure 101. Credit cards issued per 100 adults

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Japan	232	240	249	262	265	279	271	267	271	274	NA
South Korea	271	240	216	215	228	215	229	252	260	263	265
China	2	2	3	4	5	8	13	17	21	24	28
India	NA	1	2	2	3	3	3	3	2	2	2
Indonesia	3	3	3	4	5	5	6	7	8	9	11
Malaysia	26	30	38	44	49	54	57	63	46	48	51
Thailand	12	14	18	20	22	24	25	26	27	27	28
Vietnam	0	0	0	0	0	0	1	1	1	1	NA
Australia	66	69	71	76	79	82	82	81	81	79	NA
US	580	570	560	540	580	590	550	490	470	450	NA
UK	131	146	152	151	149	145	144	143	142	142	NA
Russia	0	0	1	2	4	6	7	7	8	10	NA
Germany	25	25	25	26	26	27	30	31	32	33	34
Italy	45	52	54	58	62	67	71	76	80	NA	NA
Spain	60	67	80	90	103	114	116	114	114	114	NA
France	5	5	5	61	53	59	62	63	65	69	NA
Brazil	79	90	107	124	149	184	214	237	282	337	401
Mexico	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Source: Lafferty World Cards Intelligence, Haver Analytics, Citi Research.

Figure 102. Debit cards issued per 100 adults

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Japan	329	355	355	358	369	381	370	362	363	363	NA
South Korea	173	172	194	210	230	254	280	309	345	379	438
China	47	61	72	88	102	132	154	173	197	223	251
India	NA	2	4	7	10	14	16	21	26	34	41
Indonesia	8	10	12	14	16	18	22	22	23	24	25
Malaysia	38	45	59	89	105	119	130	169	125	133	139
Thailand	10	13	17	22	28	46	51	59	69	79	92
Vietnam	0	0	1	4	7	15	23	28	31	33	NA
Australia	152	152	155	154	157	162	167	174	183	193	NA
US	110	110	120	110	120	120	130	140	160	160	NA
UK	123	129	134	136	137	143	151	156	160	162	NA
Russia	13	19	28	36	48	66	77	82	85	87	NA
Germany	134	128	125	125	127	134	141	149	156	163	170
Italy	50	50	52	63	68	67	68	70	71	NA	NA
Spain	93	93	91	87	84	83	82	80	79	78	NA
France	85	89	96	94	98	101	103	109	115	120	NA
Brazil	91	98	115	129	139	147	156	165	183	199	216
Mexico	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Source: Lafferty World Cards Intelligence, Haver Analytics, Citi Research.

### Japan's nonbank financial institutions

Japan's nonbank financial institutions have been expanding into Asia since the early 1990s. Aeon Credit, for example, established local subsidiaries in Hong Kong in 1990, Thailand in 1992, and Malaysia in 1996.

Acom moved into Thailand in 1996 and is currently offering unsecured loans and credit shopping via the Easy Buy brand. It also jointly acquired Indonesia's Bank BNP with MUFG in 2007 (55.4% stake for Acom, 20% for MUFG) and is engaged in the consumer loan business.

SMBC Consumer Finance set up shop in Hong Kong in 1992, launched a consumer loan business in Thailand in 2005, and intends to make profits from overseas lending operations a pillar of its business strategy going forward.

All the megabanks are aware of these markets' high margins and future potential. MUFG and SMFG in particular not only provide support for group firms but also expect to use the local banks they have acquired in Indonesia and Thailand as vehicles to expand their presence in these markets.

Figure 103. Asian operations of Japan's main nonbanks (FY12)

	Aeon Credit	YoY	Acom	YoY	SMBC Consumer	YoY
<b>Hong Kong</b>						
Loans/volume (HKD mn)	7,724	9.4%	NA	NA	2,018	24.0%
Accounts ('000)	1,160	8.6%	NA	NA	NA	NA
OP (HKD mn)	376	10.0%	NA	NA	330	NIM
<b>Thailand</b>						
Loans/volume (THB mn)	77,646	19.0%	31	6.1%	21	14 x
Accounts ('000)	6,690	7.7%	942	6.9%	NA	NA
OP (THB mn)	2,414	44.0%	9	8.5%	NA	NA
<b>Indonesia</b>						
Loans/volume (IDR bn)	NA	NA	5,834	22.2%	NA	NA
Accounts ('000)	NA	NA	31	95.7%	NA	NA
OP (IDR bn)	NA	NA	914	36.8%	NA	NA
<b>Malaysia</b>						
Loans/volume (MYR mn)	2,467	49.0%	NA	NA	NA	NA
Accounts ('000)	1,130	15.3%	NA	NA	NA	NA
OP (MYR mn)	181	42.0%	NA	NA	NA	NA

Note: Based on results of nonbanks' local subsidiaries. Acom's Indonesia results are for Bank BNP.

Source: Company data, Citi Research.

Figure 104. Banks mentioned in this report

Company	Code	Currency	Rating	Price (Sep. 18, 2013)
Mizuho Financial Group	8411.T	JPY	1	219.0
Mitsubishi UFJ Financial Group	8306.T	JPY	1	642.0
Sumitomo Mitsui Financial Group	8316.T	JPY	1	4,820.0
Resona Holdings	8308.T	JPY	1	493.0
Sumitomo Mitsui Trust Holdings	8309.T	JPY	1	484.0
Shinsei Bank	8303.T	JPY	1	219.0
Aozora Bank	8304.T	JPY	1	297.0
Agricultural Bank of China	1288.HK	HKD	1	3.6
Australia and New Zealand Banking Group Ltd	ANZ.AX	AUD	1	30.7
Banco Bilbao Vizcaya Argentaria SA	BBVA.MC	EUR	2H	8.2
Banco do Brasil	BBAS3.SA	BRL	1	25.4
Banco Santander	SAN.MC	EUR	2H	5.9
Bank of America Corp	BAC.N	USD	2	14.7
Bank of China	3988.HK	HKD	1	3.6
Bank of Communications	3328.HK	HKD	2	5.9
Bank of New York Mellon Corp	BK.N	USD	1	31.4
Bank Pekao SA	PEO.WA	PLN	2	174.0
Bank VTB	VTBRq.L	USD	1	2.7
Barclays PLC	BARC.L	GBP	1	2.8
BNP Paribas SA	BNPP.PA	EUR	1	50.5
China CITIC Bank	0998.HK	HKD	2	4.2
China Construction Bank	0939.HK	HKD	1	6.1
China Merchants Bank	3968.HK	HKD	2	14.9
China Minsheng Banking	1988.HK	HKD	3	9.5
Commerzbank	CBKG.DE	EUR	2H	9.4
Commonwealth Bank of Australia	CBA.AX	AUD	1	74.0
Credit Agricole SA	CAGR.PA	EUR	1	8.4
Credit Suisse	CSGN.VX	CHF	1	28.6
Danske Bank A/S	DANSKE.CO	DKK	1	123.7
Deutsche Bank	DBKGn.DE	EUR	1	35.6
Erste Bank	ERST.VI	EUR	2H	24.0
Garanti Bank	GARAN.IS	TRY	1	8.2
HSBC Holdings PLC	HSBA.L	GBP	1	7.0
Industrial & Commercial Bank of China	1398.HK	HKD	1	5.5
Intesa Sanpaolo	ISP.MI	EUR	3H	1.6
Isbank	ISCTR.IS	TRY	1	5.3
Itaú Unibanco	ITUB4.SA	BRL	1	32.5
JP Morgan Chase & Co	JPM.N	USD	1	53.4
KB Financial Group	105560.KS	KRW	1	38,050.0
KBC	KBC.BR	EUR	1	36.6
Lloyds Banking Group PLC	LLOY.L	GBP	2	0.8
National Australia Bank Ltd	NAB.AX	AUD	2	34.6
Natixis	CNAT.PA	EUR	2	3.7
Nordea	NDA1V.HE	EUR	1	9.1
PNC Financial Services Group Inc	PNC.N	USD	2	74.4
Royal Bank of Scotland Group PLC	RBS.L	GBP	3H	3.7
Santander Brasil	SANB11.SA	BRL	3	14.7
Shinhan Financial Group	055550.KS	KRW	1	44,350.0
Societe Generale	SOGN.PA	EUR	1	38.0
Standard Chartered PLC	STAN.L	GBP	1	15.1
State Bank of India	SBI.BO	INR	1	1,673.8
Swedbank AB	SWEDa.ST	SEK	2	154.3
UBS	UBSN.VX	CHF	1	19.3
UniCredit Group	CRDI.MI	EUR	2H	4.8
US Bancorp	USB.N	USD	2	37.8
Wells Fargo & Co	WFC.N	USD	2	43.3
Westpac Banking Corp	WBC.AX	AUD	1	32.5
Yapi Kredi Bank	YKBNK.IS	TRY	1	4.6

Source: Citi Research.







## Appendix A-1

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Data current as of 30 Jun 2013

	12 Month Rating			Relative Rating		
	Buy	Hold	Sell	Buy	Hold	Sell
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% of companies in each rating category that are investment banking clients	53%	50%	45%	58%	51%	49%

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