Company

Global Markets Research

Deutsche Bank

29 January 2009

January 2009

Cost of Equity in Asia

Figure 1: Cost of Equity for Asian countries as at 20 January 2008

Country	Risk Free Rate	Equity Risk Premium	Cost of Equity	Chg
Singapore	2.6%	4.8%	**7.5%**	0.24%
Hong Kong	3.6%	5.1%	**8.8%**	0.00%
Taiwan	4.6%	4.8%	**9.4%**	0.03%
South Korea	5.9%	5.1%	**10.9%**	0.01%
Malaysia	6.5%	4.5%	**11.0%**	0.16%
China	5.2%	6.2%	**11.4%**	0.88%
Thailand	7.2%	5.0%	**12.1%**	0.06%
India	8.1%	5.4%	**13.5%**	0.14%
Indonesia	11.1%	5.4%	**16.5%**	0.18%
Philippines	11.4%	5.2%	**16.6%**	0.13%
Vietnam	10.4%	6.5%	**17.0%**	0.75%
Pakistan	13.3%	5.2%	**18.5%**	0.65%

Source: Deutsche Bank

This document has been compiled to explain the cost of equity methodology adopted by Deutsche Bank company research in Asia and refresh the country default numbers. To ensure consistency, all DB Asian analysts use this country Cost of Equity (COE) methodology as the default input into their company specific COE and Cost of Capital computations. This paper explains how DB derives the country COE and what the source data comprise. We do not suggest that there is or should be agreement on a single correct method of calculating COE. What we aim to achieve is that there is sufficient intellectual rigor, consistency and transparency applied to our COE assumptions across DB's Asia coverage universe.

We promote the philosophy of using longer term inputs to both our risk-free rate and equity risk premium modeling to ensure that cash, earnings and dividend flows over 10+ year forecasting horizons are incorporated into our valuation models using longer term discount rates. We recognize that market pricing dynamics factor in shorter term trends and may, for extended periods, ignore longer term drivers but we believe that a smoothing of interest rate inputs over at least three years delivers a more meaningful and less "noisy" and volatile valuation framework. We refresh our default numbers every six months.

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Risk-free rate

Risk-free rates are based on each country's average sovereign credit rating from S&P and Moody's. From a core sample pool comprising Hong Kong, India, Indonesia, Malaysia, Philippines, Singapore and South Korea (those countries with the most liquid and therefore more efficiently priced bond markets) we have attributed the highest credit rating country, Singapore (AAA rated), with the lowest yield of 2.64%, derived by averaging Deutsche Bank's 12-month forecast 10-year bond yield of 2.50% and the Singapore 2-year long-term average yield of 2.78%. Similarly, we attribute the lowest credit rating country, Indonesia (BB- rated), with a yield of 11.06% (average of 11.00% 12-month forecast and 11.12% long term average). Linear interpolation is then applied between these two data points with each country's respective credit rating then used to derive their risk-free rate, as per Figure 2.

Figure 2: Agency Credit Ratings and Country risk-free rates

Credit Rating	Risk Free Rate	Chg from July 2008
AAA	**2.6%**	-0.56%
AA+	**3.3%**	-0.55%
AA	**3.9%**	-0.54%
AA-	**4.6%**	-0.53%
A+	**5.2%**	-0.52%
A	**5.9%**	-0.51%
A-	**6.5%**	-0.50%
BBB+	**7.2%**	-0.49%
BBB	**7.8%**	-0.48%
BBB-	**8.5%**	-0.47%
BB+	**9.1%**	-0.46%
BB	**9.8%**	-0.44%
BB-	**11.1%**	-0.42%
B+	**11.7%**	-0.41%
B	**12.4%**	-0.40%

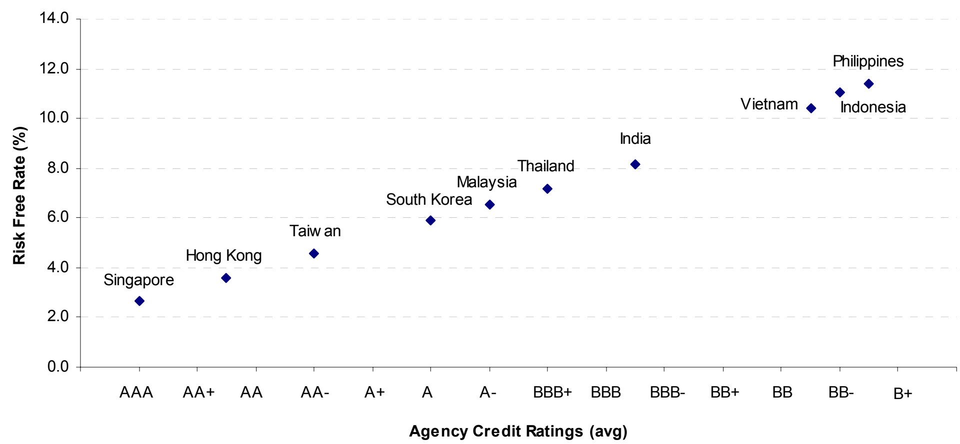
Source: Deutsche Ban

Figure 3: Risk-free rates for Asian coverage countries

Country	Risk Free Rate	Change from July 2008
Singapore	**2.6%**	-0.56%
Hong Kong	**3.6%**	-0.86%
Taiwan	**4.6%**	-0.53%
South Korea	**5.9%**	-0.51%
Malaysia	**6.5%**	-0.50%
China	**5.2%**	-0.01%
Thailand	**7.2%**	-0.49%
India	**8.1%**	-0.47%
Indonesia	**11.1%**	-0.42%
Philippines	**11.4%**	-0.42%
Vietnam	**10.4%**	-0.43%
Pakistan	**13.3%**	0.57%

Source: Deutsche Bank

Figure 4: Risk-free rates for Asian countries against Agency Credit Rating



Source: Deutsche Bank

Changes to default country risk-free rates are made on a 6-monthly basis *AND* following any formal credit rating change for a specific country.

From Figure 3 it is clear that default risk-free rates have fallen across all of our coverage countries in Asia, with the notable exception of Pakistan. With the exception of China, Hong Kong and Pakistan, these changes have been entirely driven by falling historical and forecast bond yields as evidenced by the static credit ratings for those remaining countries over the last six months. China and Hong Kong have both received rating upgrades from S&P (A to A+ and AA to AA+ respectively) whereas Pakistan was downgraded by both S&P and Moody's (from B to CCC+ and B2 to B3 respectively) in the period.

Equity Risk Premium

Historical volatility of each country's index prices has been used to calculate the equity risk premiums. Historical volatility has been derived by calculating the 2-year average annualized standard deviation of the weekly logarithmic returns of each index. These values are then re-scaled and normalized to produce an equity risk premium for the respective countries. The re-scaling formula uses the US market as a benchmark and is simply: ((Historical volatility – 12.89%) / 10) + 4.00%, where 12.89% represents the 5-year average annualized standard deviation of the weekly logarithmic returns of the S&P500 and 4.00% is the assumed long-term equity risk premium of the US market. 10 is the scaling factor used to normalise the results.

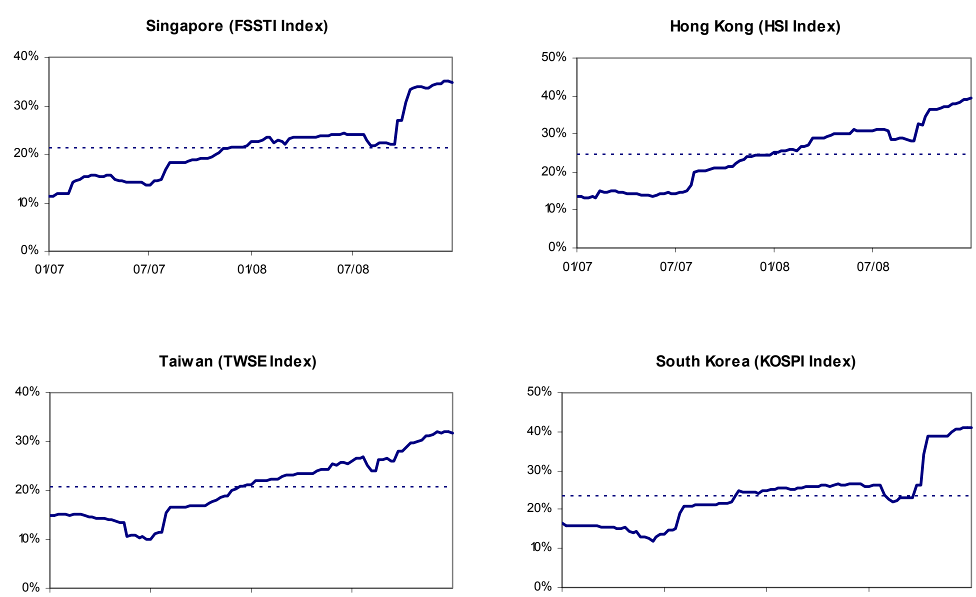
Figure 5: Equity Risk Premiums for Asian countries

Country	Equity Risk Premium	Change from July 2008
Singapore	**4.8%**	0.80%
Hong Kong	**5.1%**	0.86%
Taiwan	**4.8%**	0.56%
South Korea	**5.1%**	0.52%
Malaysia	**4.5%**	0.65%
China	**6.2%**	0.88%
Thailand	**5.0%**	0.54%
India	**5.4%**	0.61%
Indonesia	**5.4%**	0.61%
Philippines	**5.2%**	0.55%
Vietnam	**6.5%**	1.18%
Pakistan	**5.2%**	0.08%

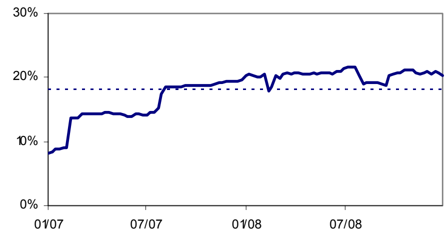
Source: Deutsche Ban

Rising volatility trends, as clearly reflected in the following graphs, explain the rising equity risk premium defaults across all countries as tabled in figure 5 above.

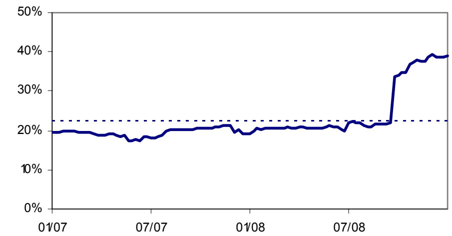
Figure 6 Historic volatility (dotted line is 2yr avg.)



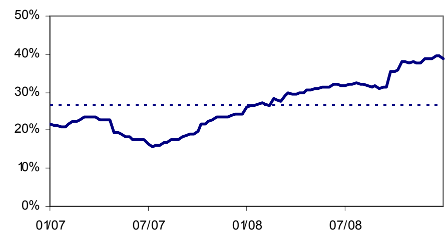
Malaysia (KLCI Index)



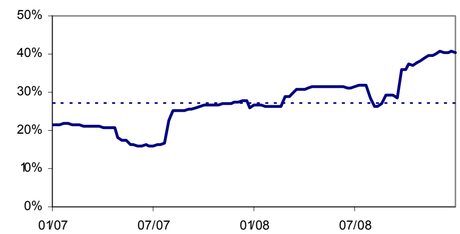
Thailand (SETS Index)



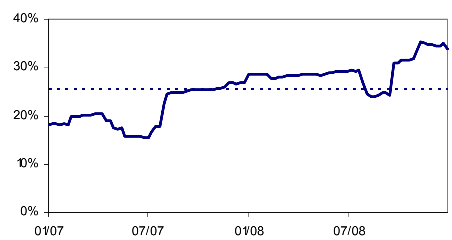
India (SENSEX Index)



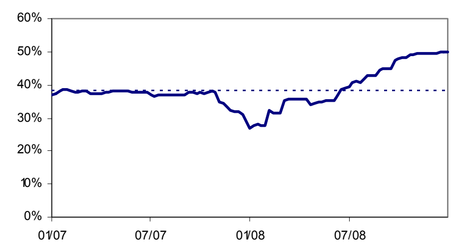
Indonesia (JCI Index)



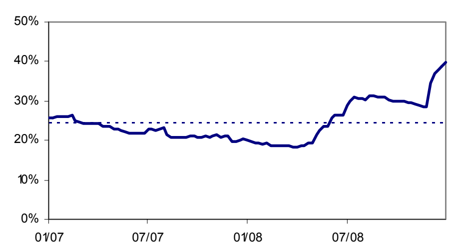
Philippines (PCOMP Index)



Vietnam (VNINDEX Index)



Pakistan (KSE100 Index)

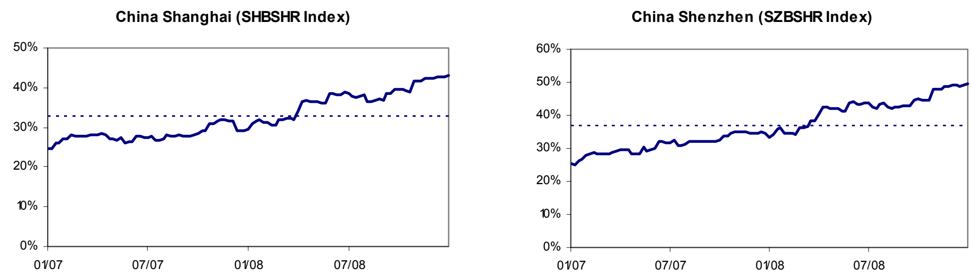


Source for all charts in Figure 6: Deutsche Bank, Bloomberg

China – a special case

We have applied a minor adjustment to the calculation of the equity risk premium for China from the standard methodology, outlined above. This is primarily due to the closed economy, restricted trading practices, illiquidity and restrictions to foreign investors. The equity risk premium calculation is based on an average between the Shanghai and Shenzhen Composite indices.

Figure 7: Historic volatility (dotted line is 2-yr avg.)



Source: Deutsche Bank, Bloomberg

Appendix 1

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Additional information available upon request

For disclosures pertaining to recommendations or estimates made on a security mentioned in this report, please see the most recently published company report or visit our global disclosure look-up page on our website at http://gm.db.com.

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Buy: Based on a current 12- month view of total share-holder return (TSR = percentage change in share price from current price to projected target price plus projected dividend yield) , we recommend that investors buy the stock.
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2. Ratings definitions prior to 27 January, 2007 were:
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   Sell: Expected total return (including dividends) of -10% or worse over a 12-month period

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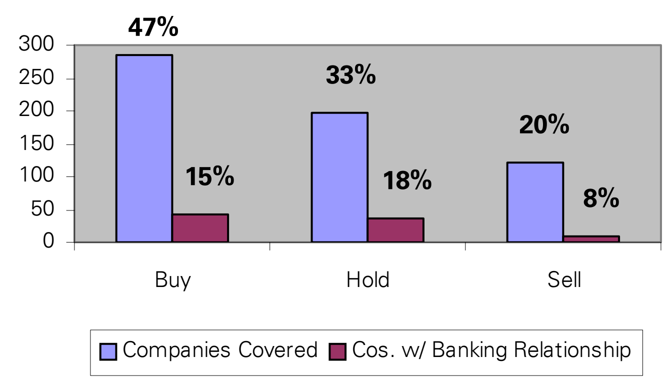

Asia-Pacific Universe

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