



Ranking the vulnerability metrics of Asian economies

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Passion to Perform

Vulnerability metrics in EM-Asia



In our latest iteration of the Asia Vulnerability Monitor, we find two economies with already heightened vulnerability rank higher in terms of their risk exposure.

□ **China** and **Malaysia** have seen their risk scores worsen. China's key pressure points are its slowing economy, weaker currency, substantial leverage, and expensive asset markets. Malaysia faces heightened vulnerability due to its heavily weaker FX, heavy household debt burden, and thin reserves buffer. Also, highly-valued asset markets and rapid credit growth relative to the pace of its economic expansion have pushed up the **Philippines'** modest external risk exposure.

□ **Hong Kong** continues to rank high due to high leverage and credit growth. And while these same factors continue to feature in **Singapore**, the city-state has moved from high to medium-risk category owing to higher real rates and a mild correction in its asset markets.

□ **Thailand's** risk score has fallen relative to our last run in July, as the recent rout in financial markets has brought its FX and equity markets to fair valuation. Meanwhile, **India, Indonesia,** and **South Korea** have maintained the same risk scores as they continue to be in our medium-risk category. Asset market froth remains a key risk in India, while low reserves cover and the rupiah's sizeable depreciation make Indonesia vulnerable to additional external shocks. Likewise, South Korea faces a slowing economy with relatively low rates which could further encourage debt build-up when borrowing costs are about to rise.

□ **Taiwan** remains the least vulnerable economy within EM-Asia, according to our exercise.

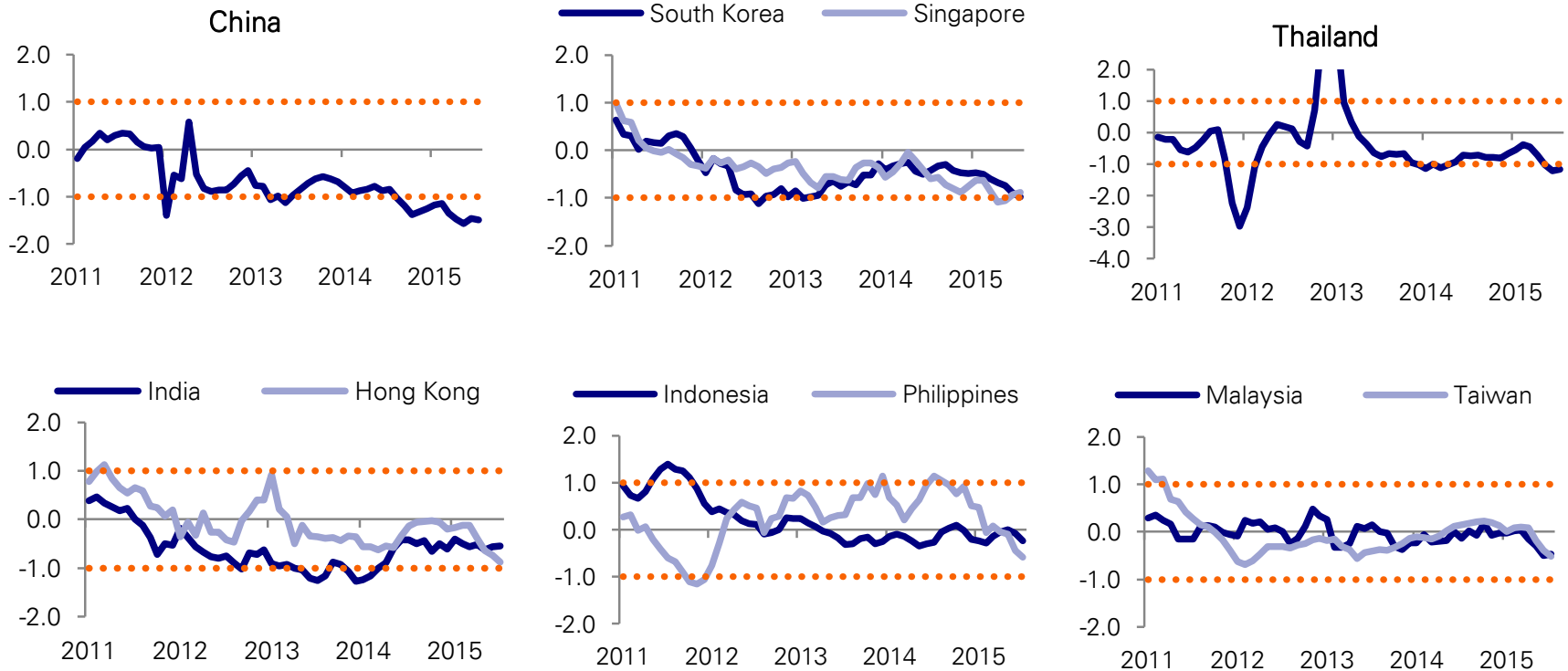
Asia vulnerability monitor



The assessment is done on a relative basis, both with respect to an economy's own history and its Asian peers. Indicators span growth (output gap and z-score of high frequency indicators), credit, external sector (FX valuation, external funding needs, reserves cover), interest rates, debt (household, corporate, and public), and asset markets (property and equity). A heat map provides a useful snapshot of various risks. Arrows pertain to a change in score and not necessarily a change in risk category (or color).

Source: Deutsche Bank.

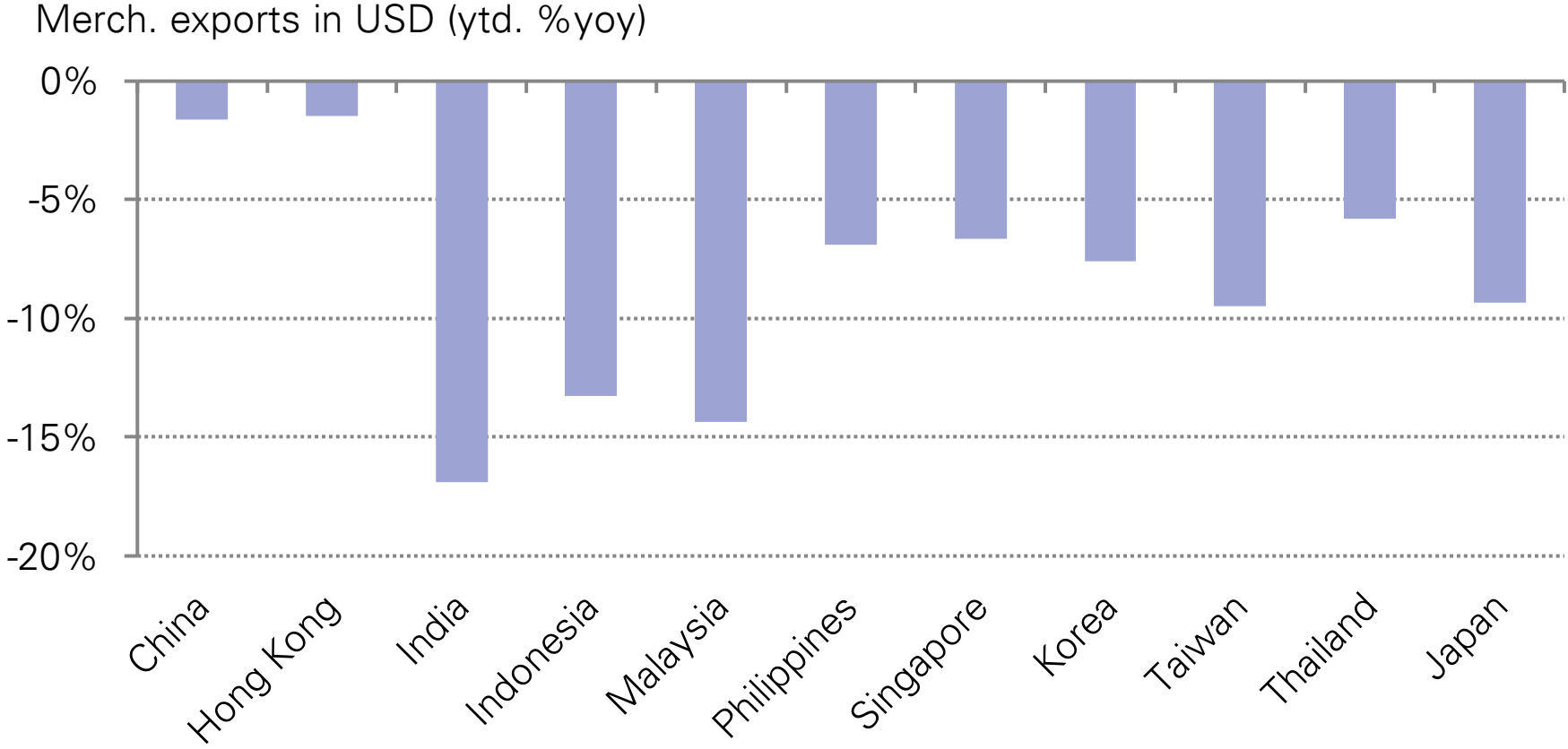
Growth momentum is weak



Note: Macro momentum is a z-statistics based composite measure of a number of monthly variables that proxy for underlying domestic demand. The variables used include industrial production, retail sales, auto sales, credit growth, and non-oil imports. In order to arrive at an “optimized” composite score, each variable is weighted by its coefficient estimate obtained in a regression where GDP is the dependent variable. Analysis is done over the period 2000-JAugust 2015.

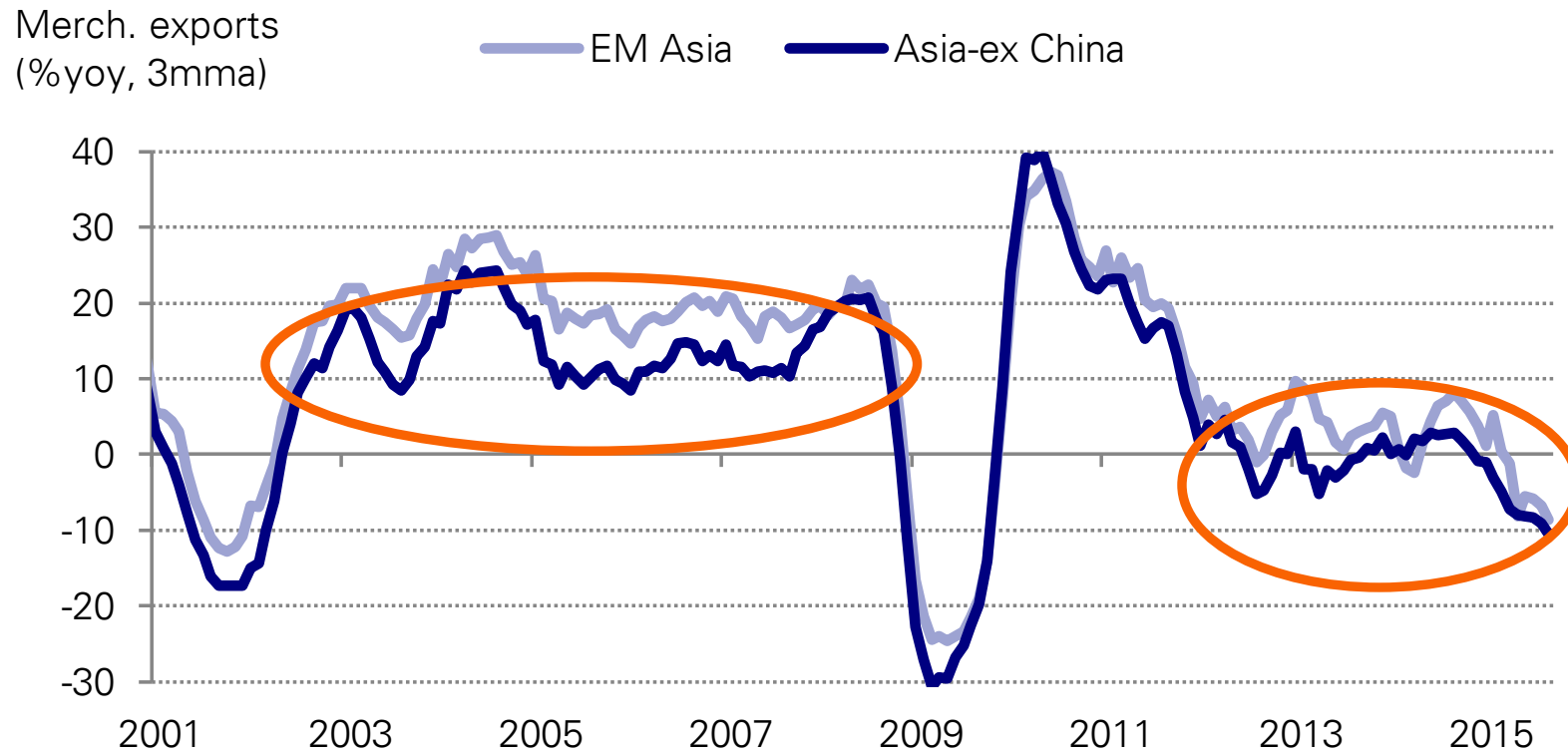
Source: CEIC, Deutsche Bank.

Exports have declined



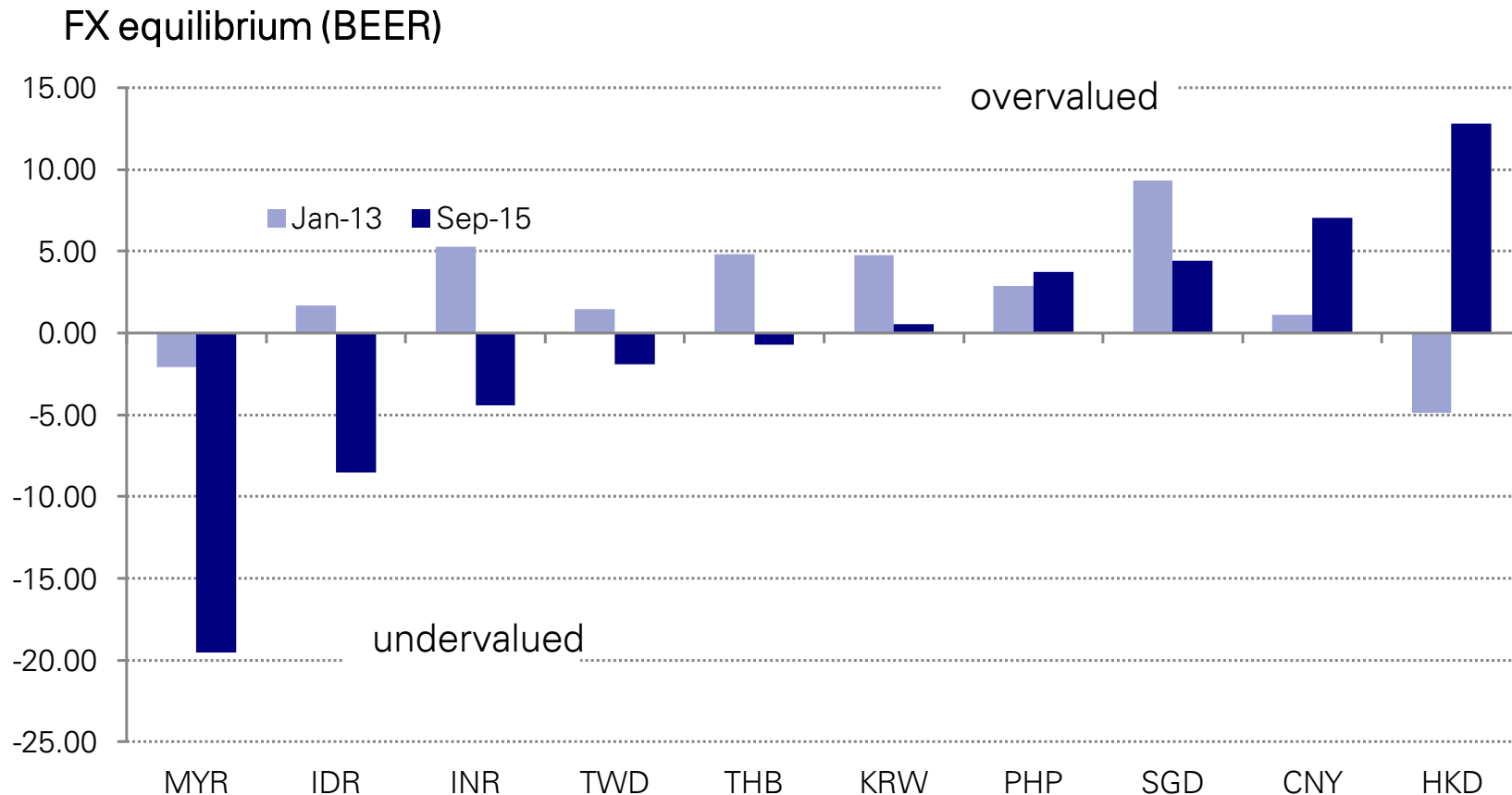
Source: CEIC, Deutsche Bank. Data through September 2015.

A new normal for exports?



Source: CEIC, Deutsche Bank. Data through September 2015

Exchange rate valuation



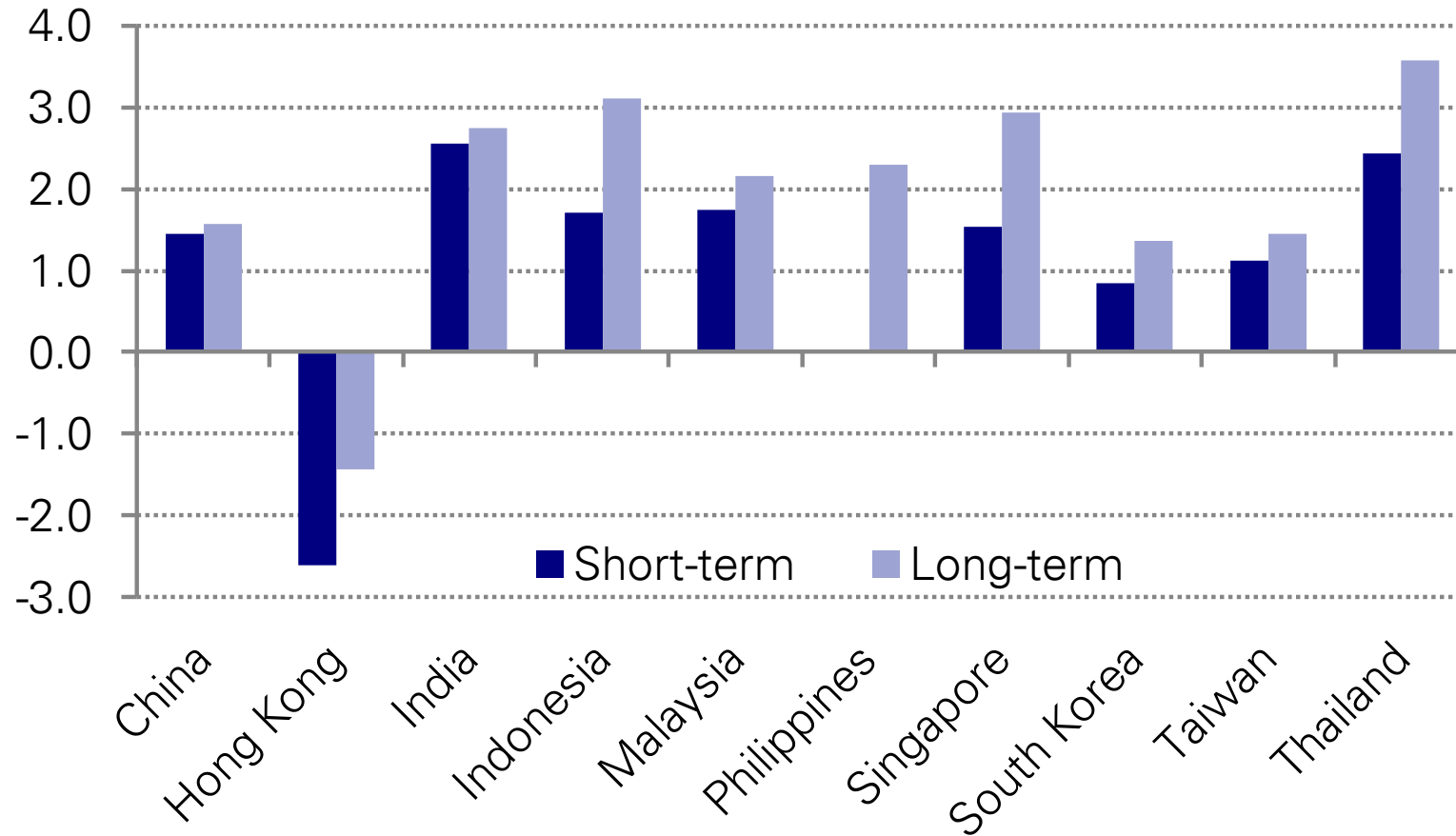
Note: We estimate the relationship between real effective exchange rates (REERs) and a small set of macroeconomic variables as follows: (i) the productivity differential between a country and its trading partners to capture the well-documented Balassa-Samuelson effect, according to which, higher productivity growth leads to currency appreciation; (ii) net foreign assets, where a higher net foreign asset position enables a country to finance a weaker current account balance and therefore sustain a more appreciated exchange rate; (iii) the terms of trade, which captures the income, wealth, and substitution effects resulting from changes in the relative prices of imports and exports; and (iv) openness, with more open (less restrictive) trade regimes typically associated with lower prices of tradable goods and hence more depreciated real exchange rates. Our model is estimated as a panel, though we allow the coefficient on openness to vary by country to capture various idiosyncratic factors.

Source: CEIC and Deutsche Bank

Credit metrics: I



Real interest rates



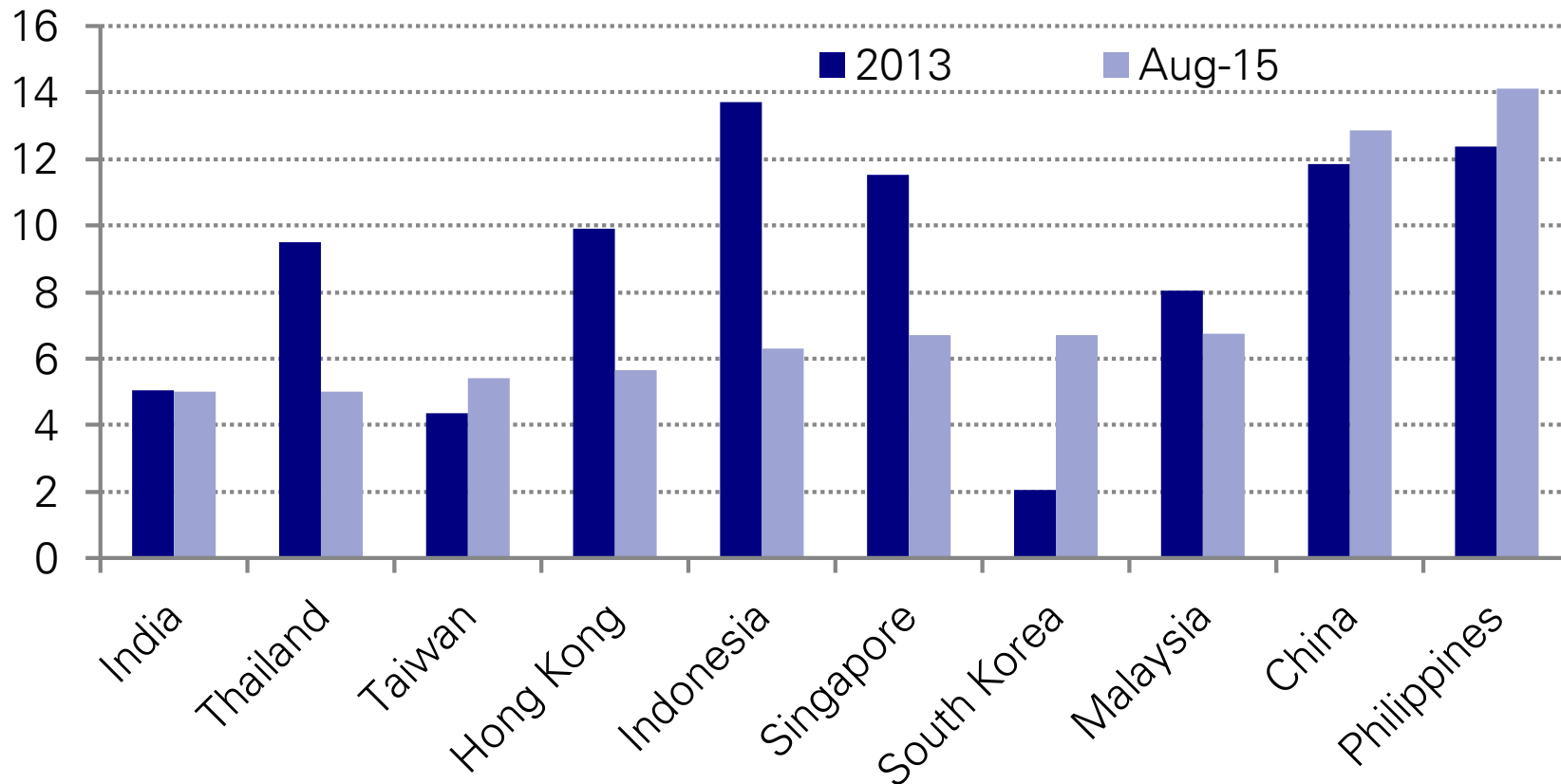
Note: Short-term real rates are computed as the difference between 3-month T-bill rates and the 2015 inflation forecast. Long-term real rates are the difference between 10-year bonds yields and 2015 inflation forecast.

Source: CEIC and Deutsche Bank.

Credit metrics: II



Real credit growth (% yoy, 12 month average)

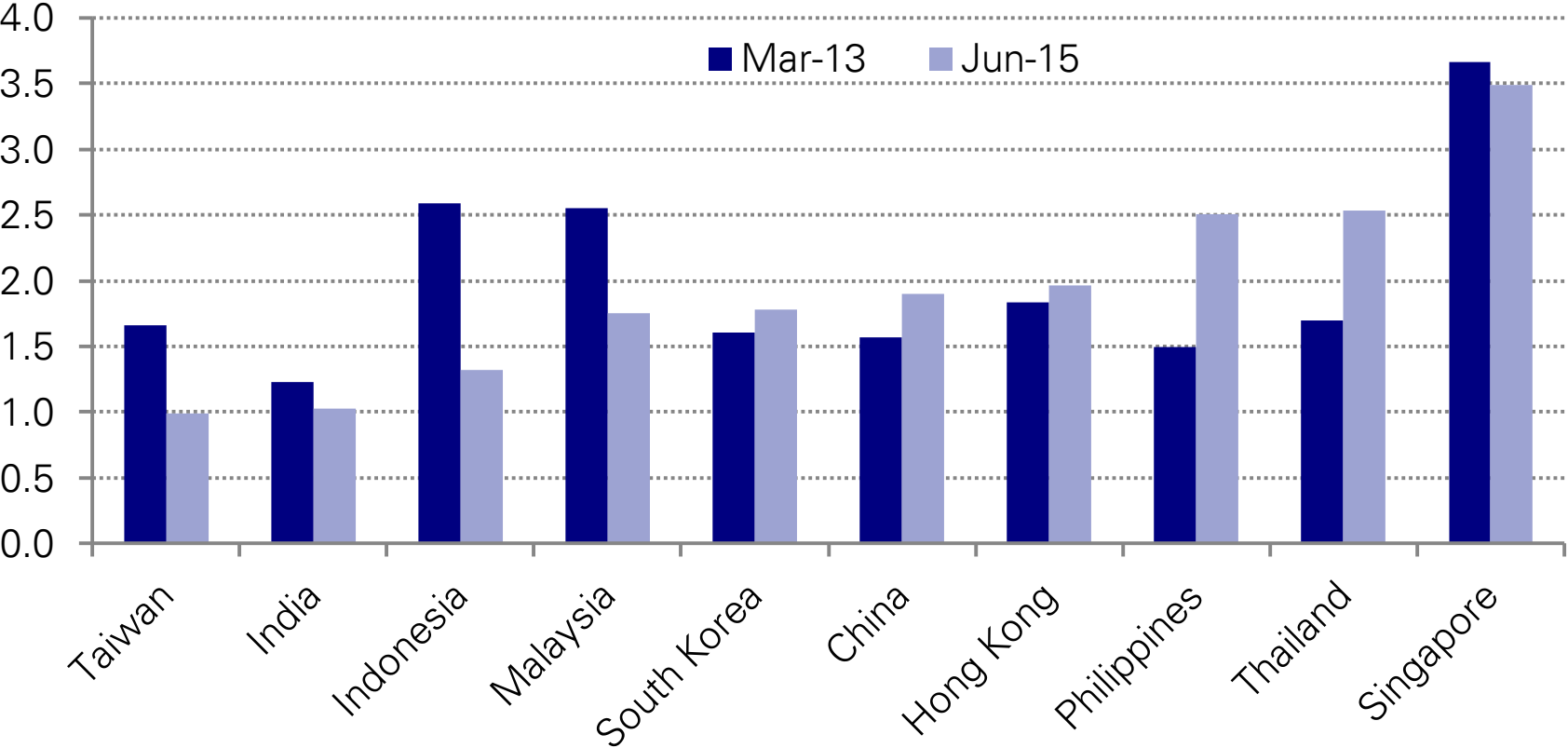


Note: Real credit growth is the difference between the growth of private sector claims and inflation. Data as of July 2015 for Indonesia.
Source: CEIC and Deutsche Bank.

Credit metrics: III

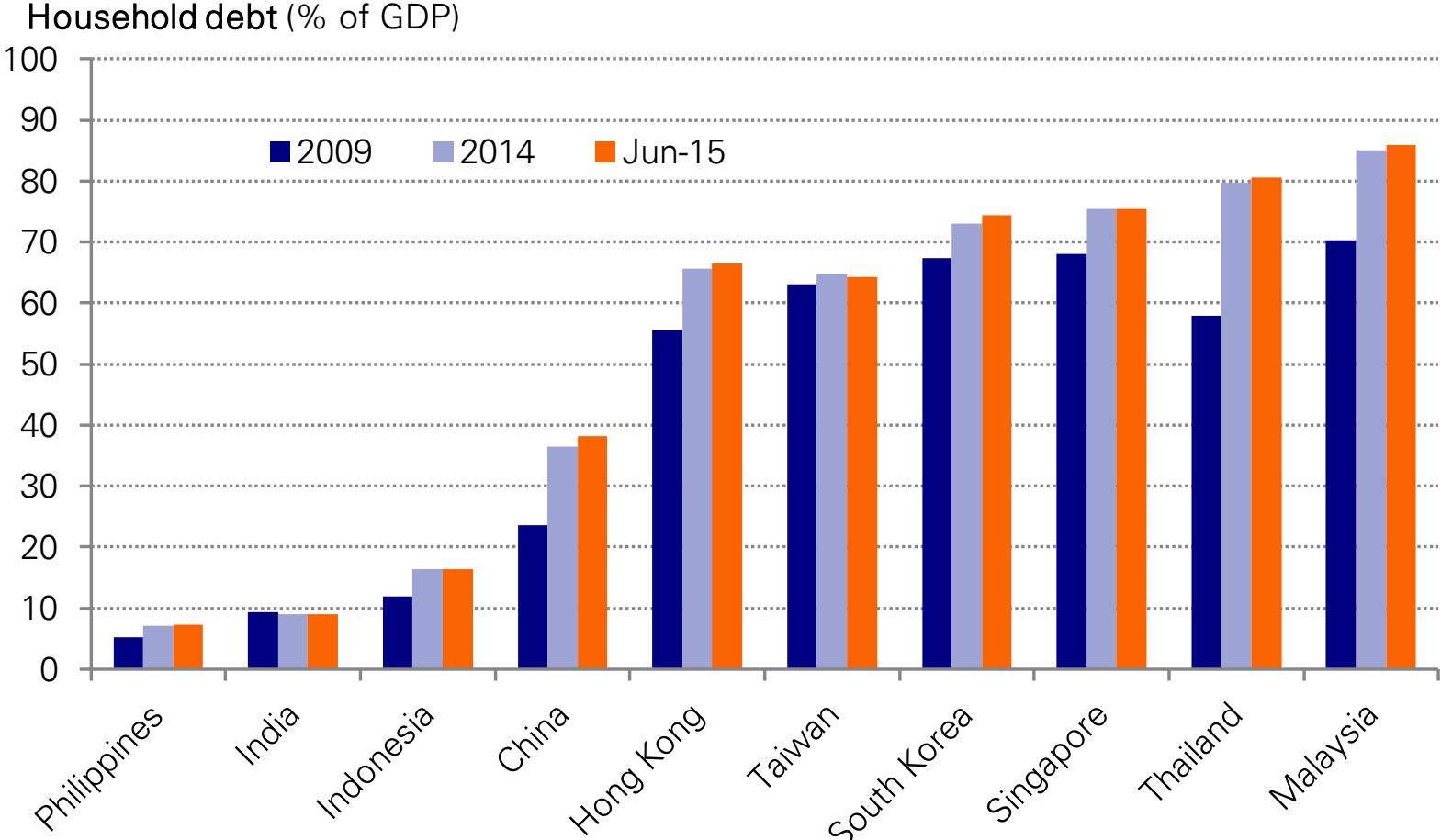


Ratio of nominal credit growth to nominal GDP growth (4-quarter moving average)



Source: CEIC and Deutsche Bank.

Household debt

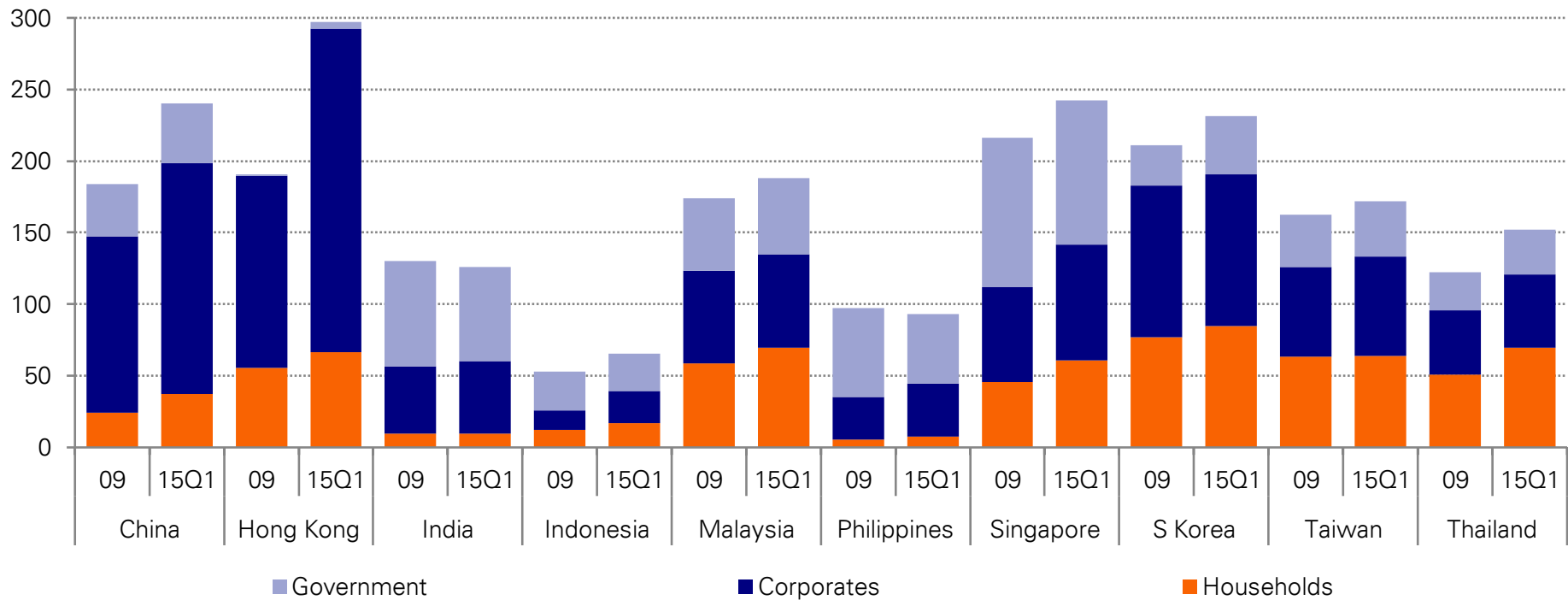


Source: CEIC and Deutsche Bank.

Total debt



Total debt (% of GDP)

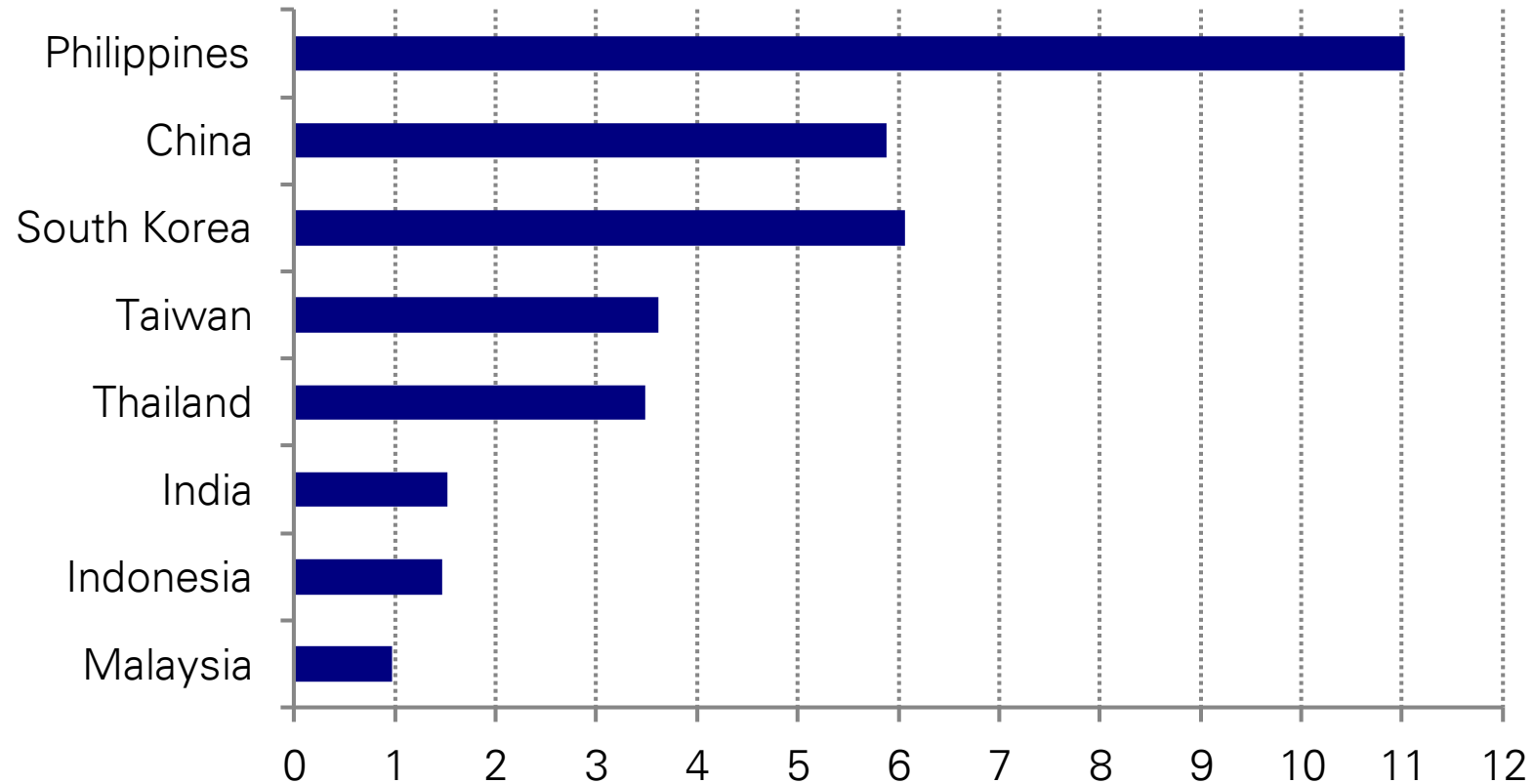


Source: Asianbondsonline, CEIC, Haver Analytics, and Deutsche Bank.

Funding needs



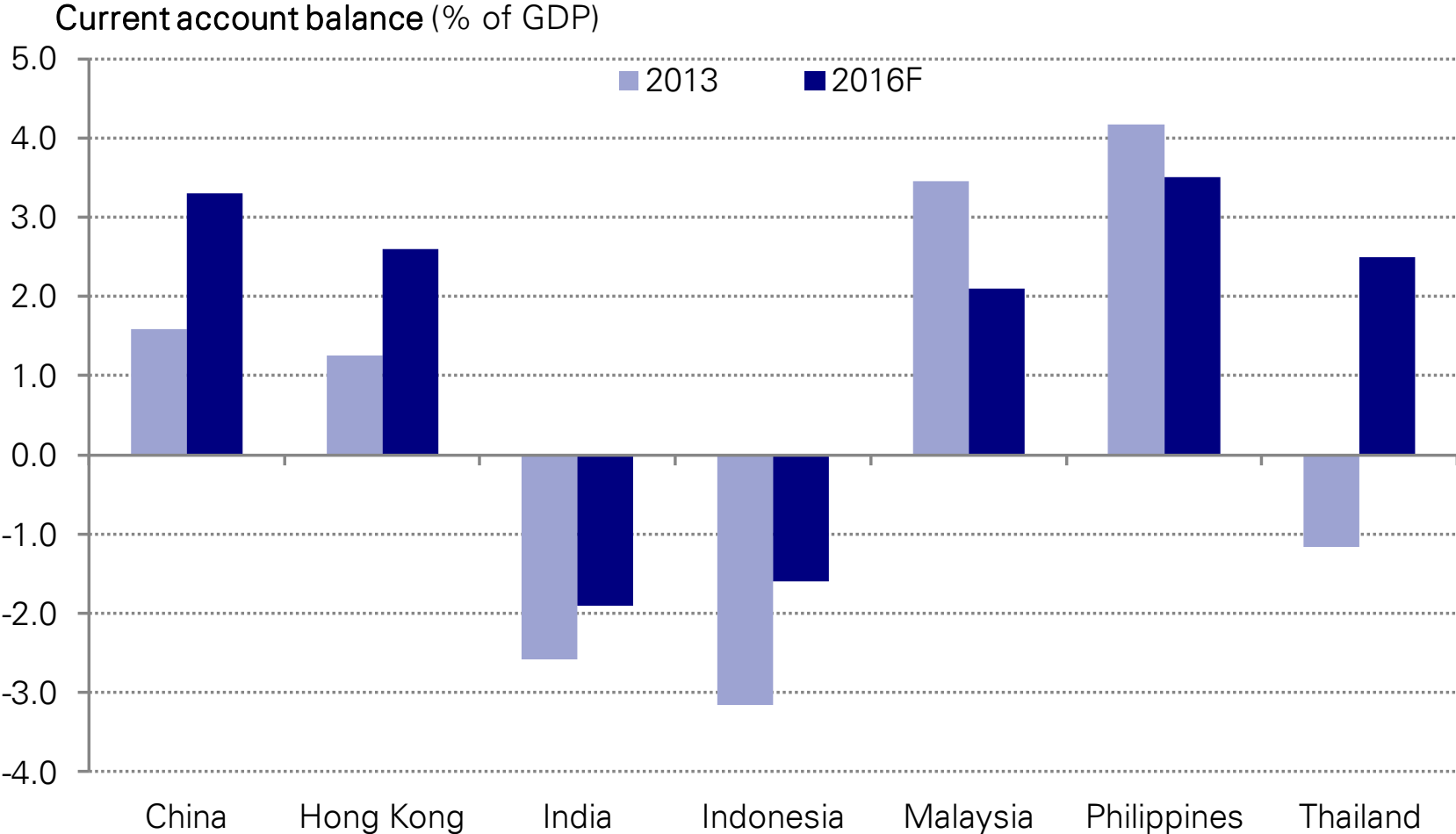
Ratio of reserves to gross external financing needs in 2016



Notes: Gross external financing need is the sum of the projected 2016 current account deficit and short-term external debt by residual maturity.

Source: BIS-IMF-OECD-World Bank Joint External Debt Hub, Bank Indonesia, Bangko Sentral ng Pilipinas, Reserve Bank of India, CEIC and Deutsche Bank.

Current account balance

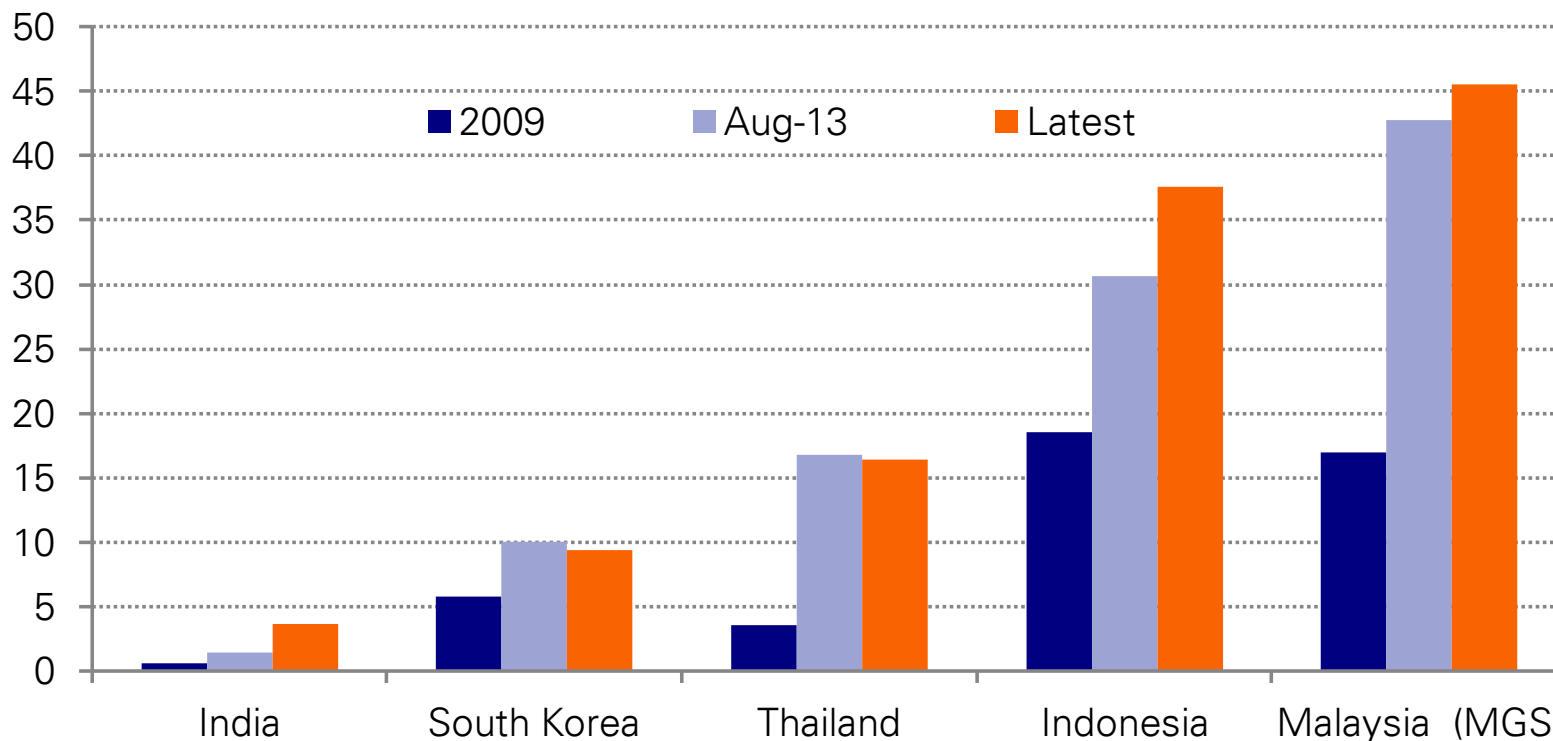


Source: CEIC and Deutsche Bank.

Withdrawal Risk: I



Foreign ownership (% bonds outstanding)

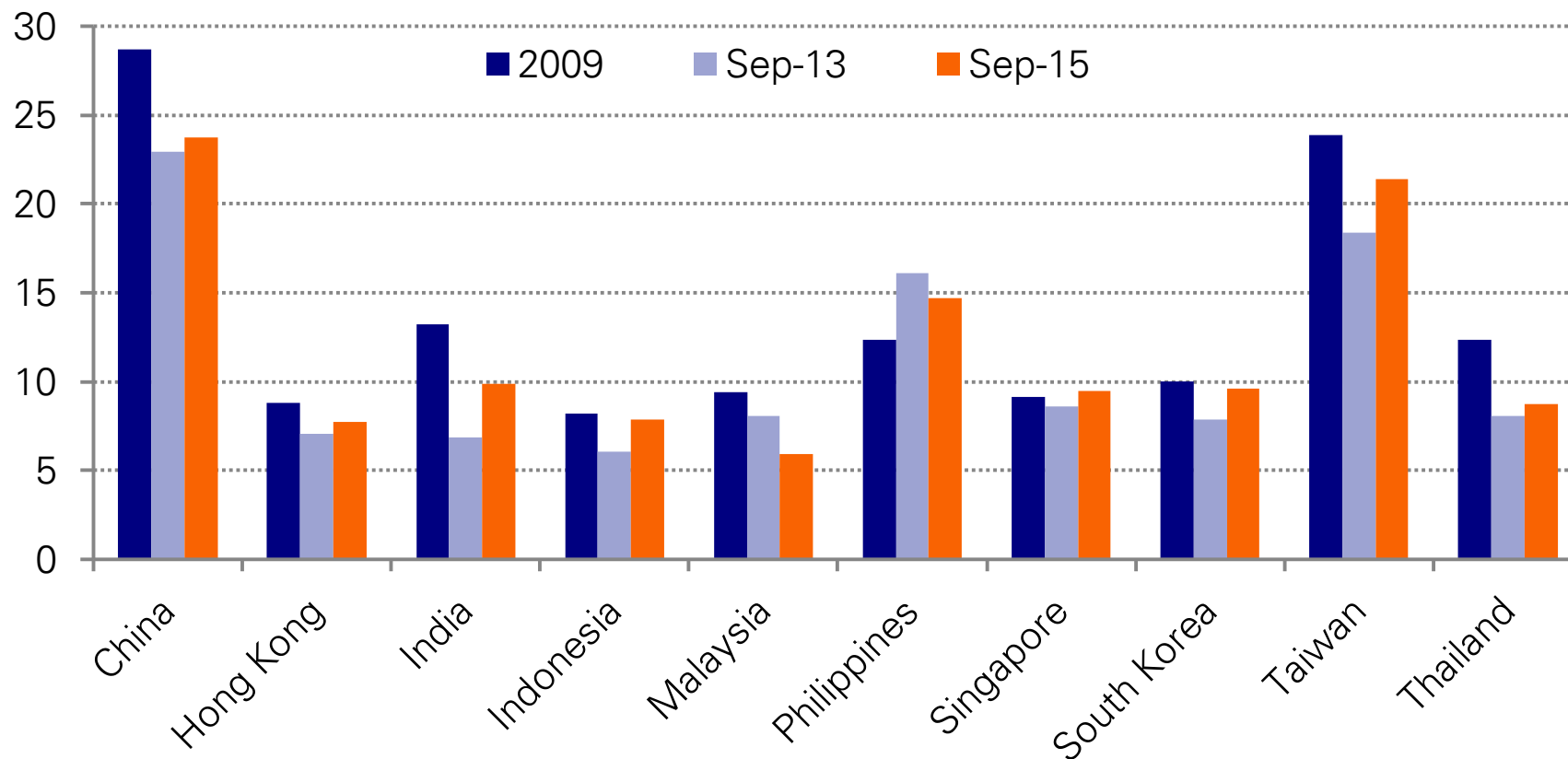


Notes: Data as of September 2015 for Indonesia and Malaysia; August 2015 for Thailand; July 2015 for South Korea and June 2015 India. Malaysia's figure refers to foreign holdings of government securities only. Foreign ownership in Government Investment Issues (GII) stands at 4.1% as of Sep 2015.
Source: CEIC and Deutsche Bank.

Withdrawal Risk: II

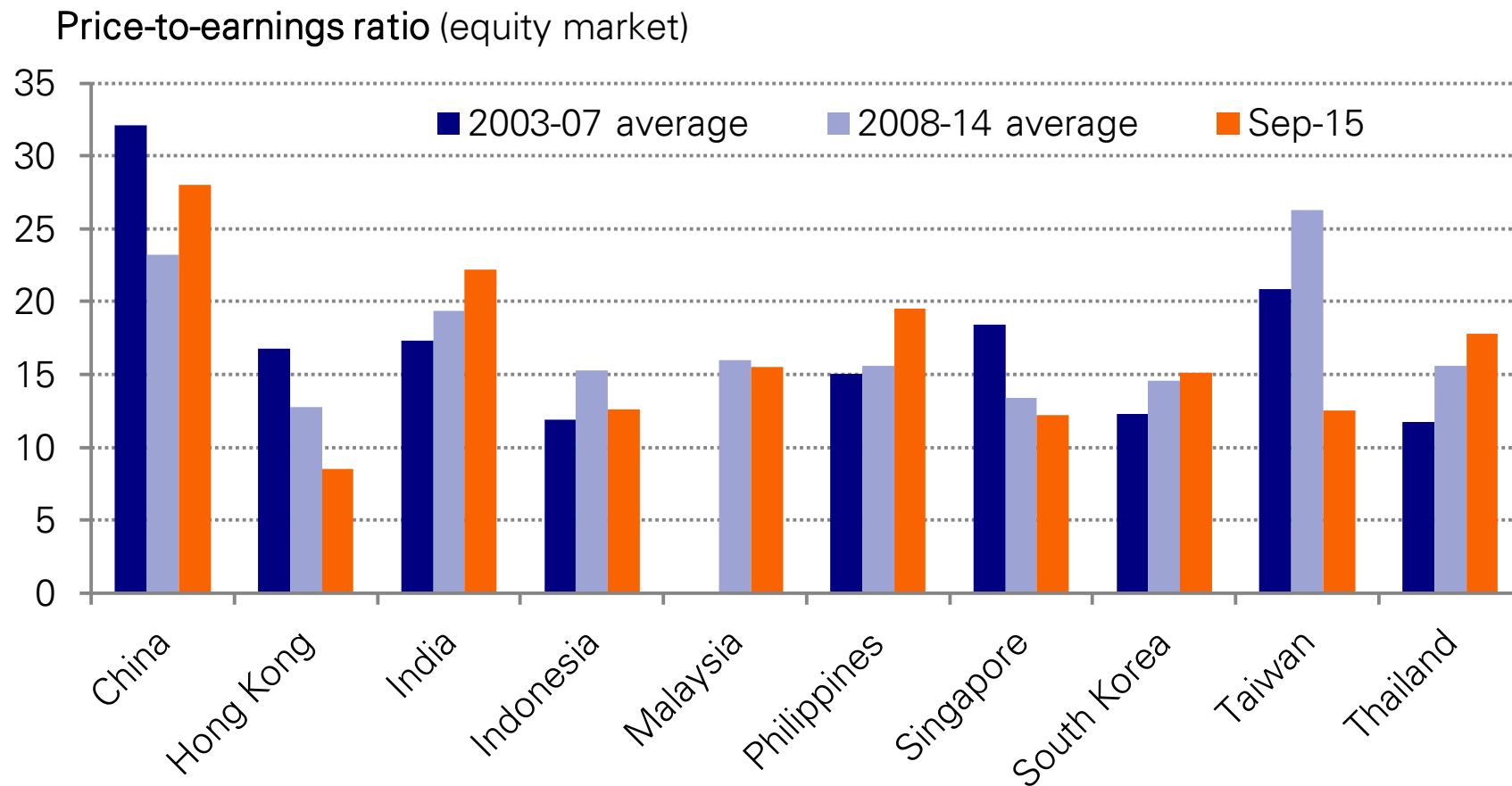


Reserves in months of merch. imports



Source: CEIC and Deutsche Bank.

Asset markets



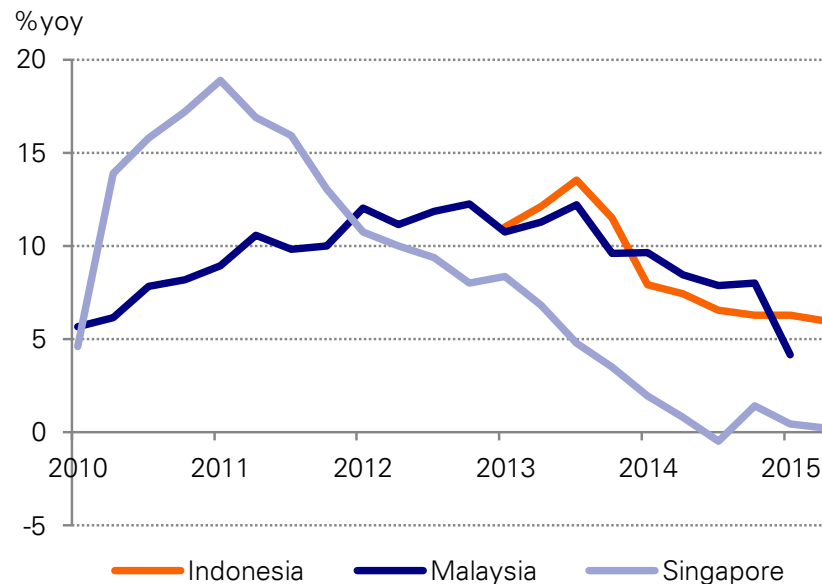
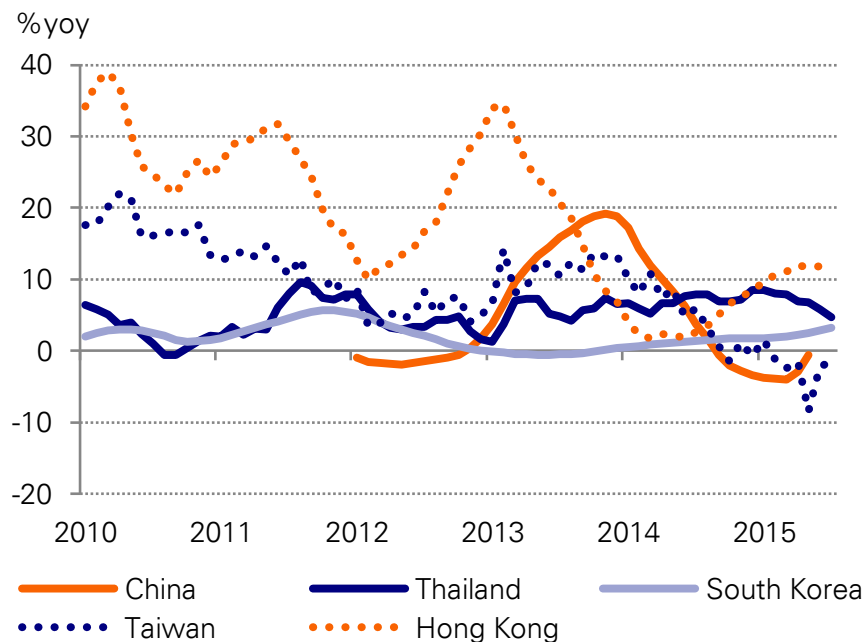
Notes: Data as of Aug 2015 for China, Indonesia, and Philippines. Malaysia's PE ratio series run only back to August 2009 and the Philippines' back to July 2006. China's PE is an average of the PE ratios for Shanghai and Shenzhen stock markets, weighted by respective market capitalization.

Source: CEIC and Deutsche Bank

Asset markets



Property price (average of residential and commercial properties)

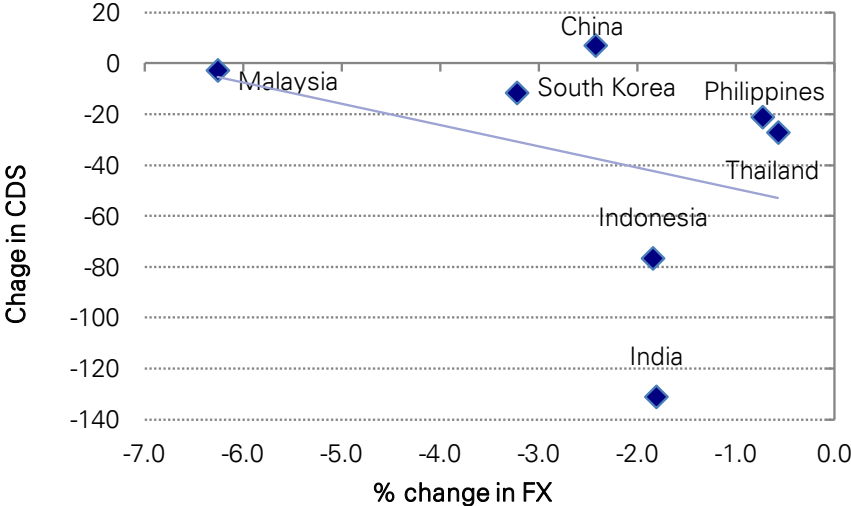


Note: Property prices refer to the average of residential and commercial property prices. Data as of August 2015 for South Korea and Taiwan; July for Thailand and Hong Kong; May for China; and March for Malaysia. We refer to house price index only for Malaysia.
 Source: CEIC, Haver Analytics (BIS data), and Deutsche Bank.

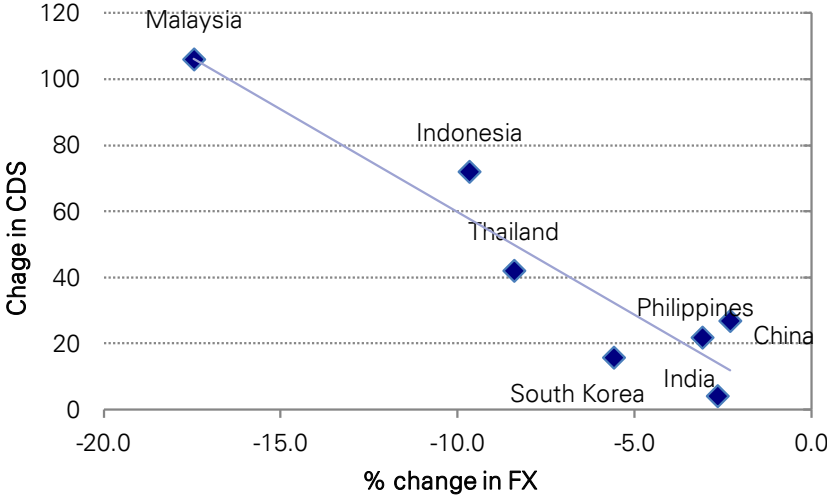
Sovereign risk dynamic



2014

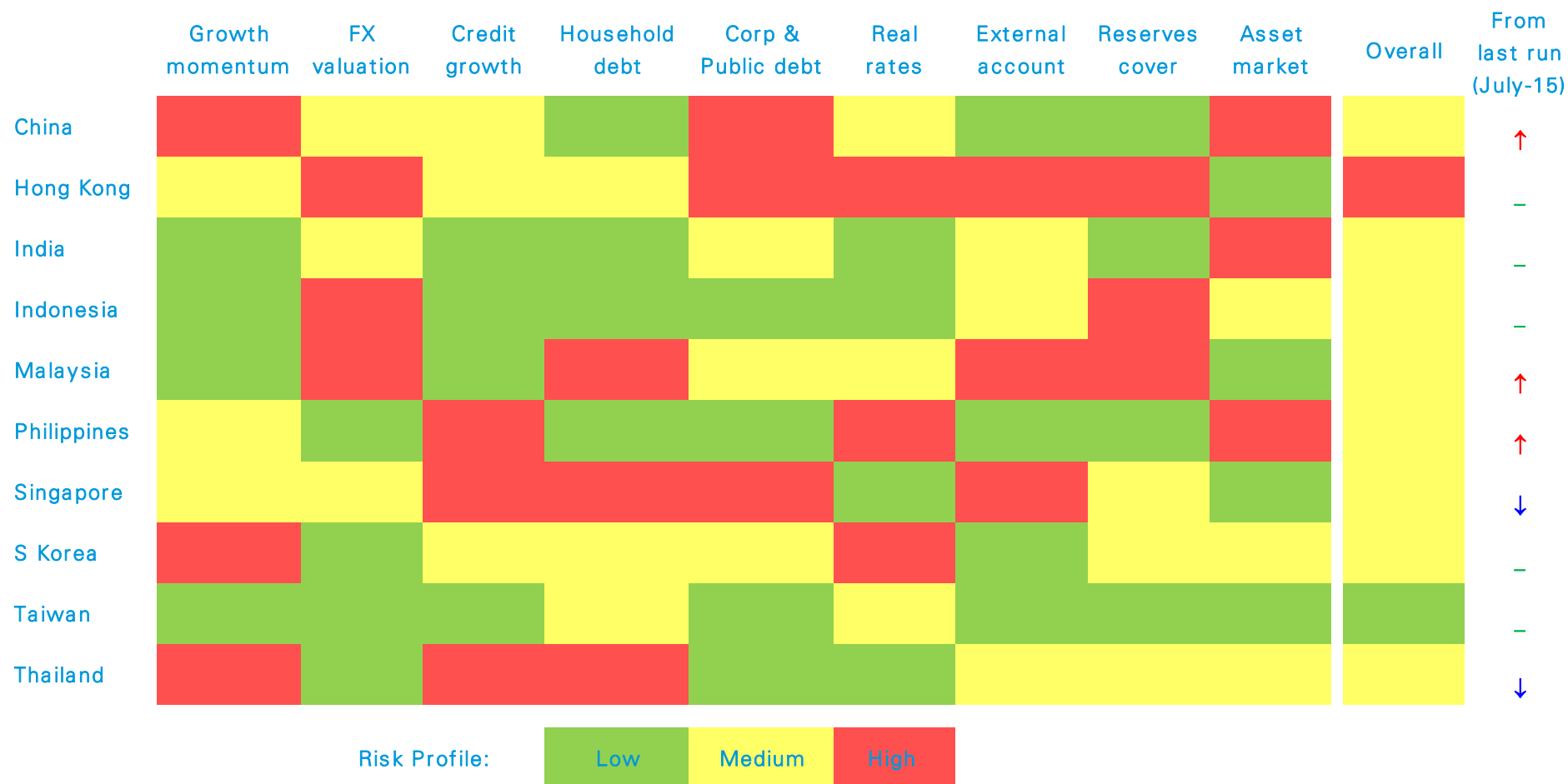


year-to-date 2015



Notes: Negative sign denotes FX depreciation and improvement in CDS.
 Source: Bloomberg Finance LP and Deutsche Bank. Data as of 8 October 2015.

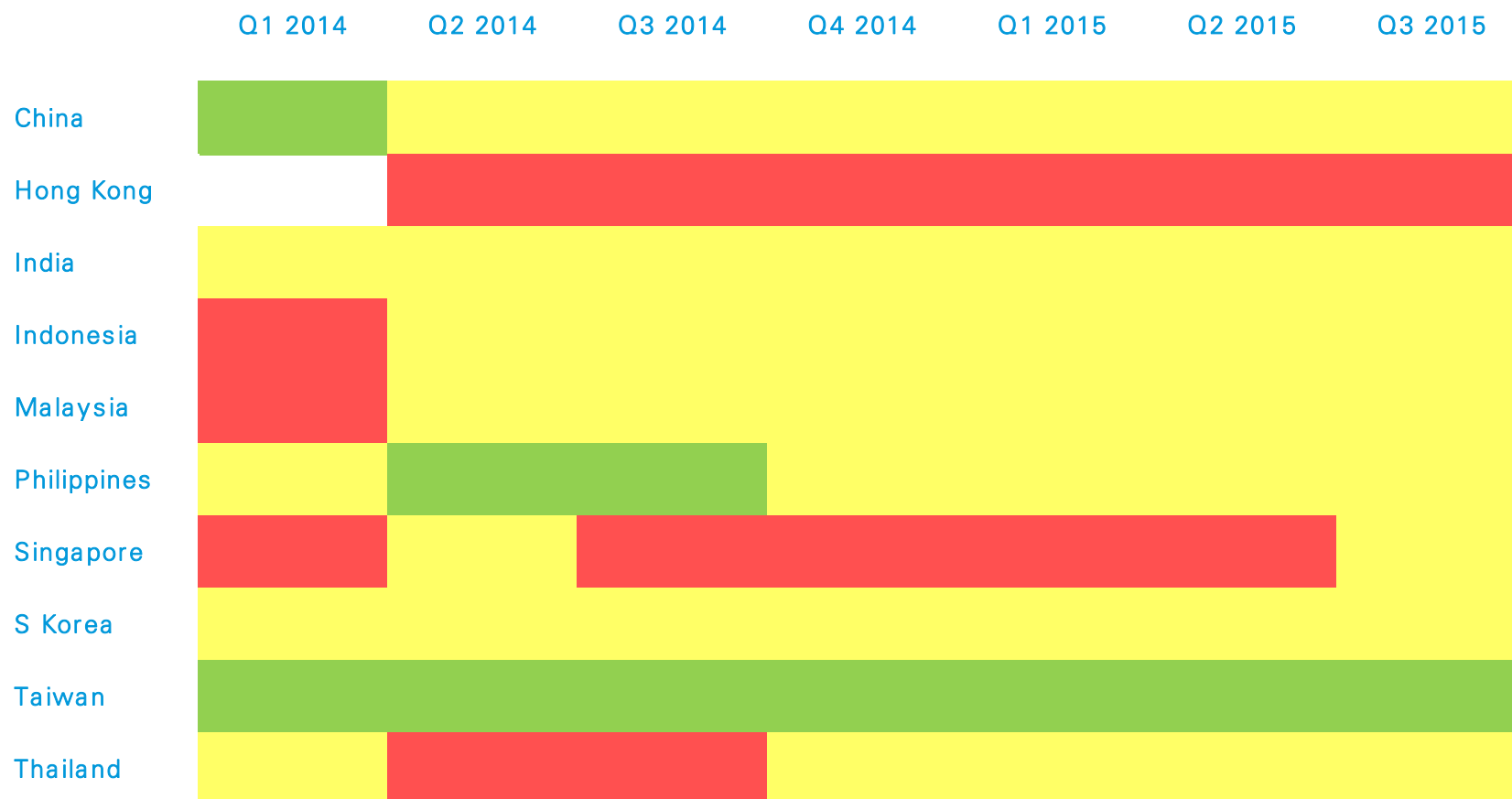
A recap



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Source: Deutsche Bank.

Time series of vulnerability



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Source: Deutsche Bank.

Appendix 1

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