

Adrian Lee
& Partners

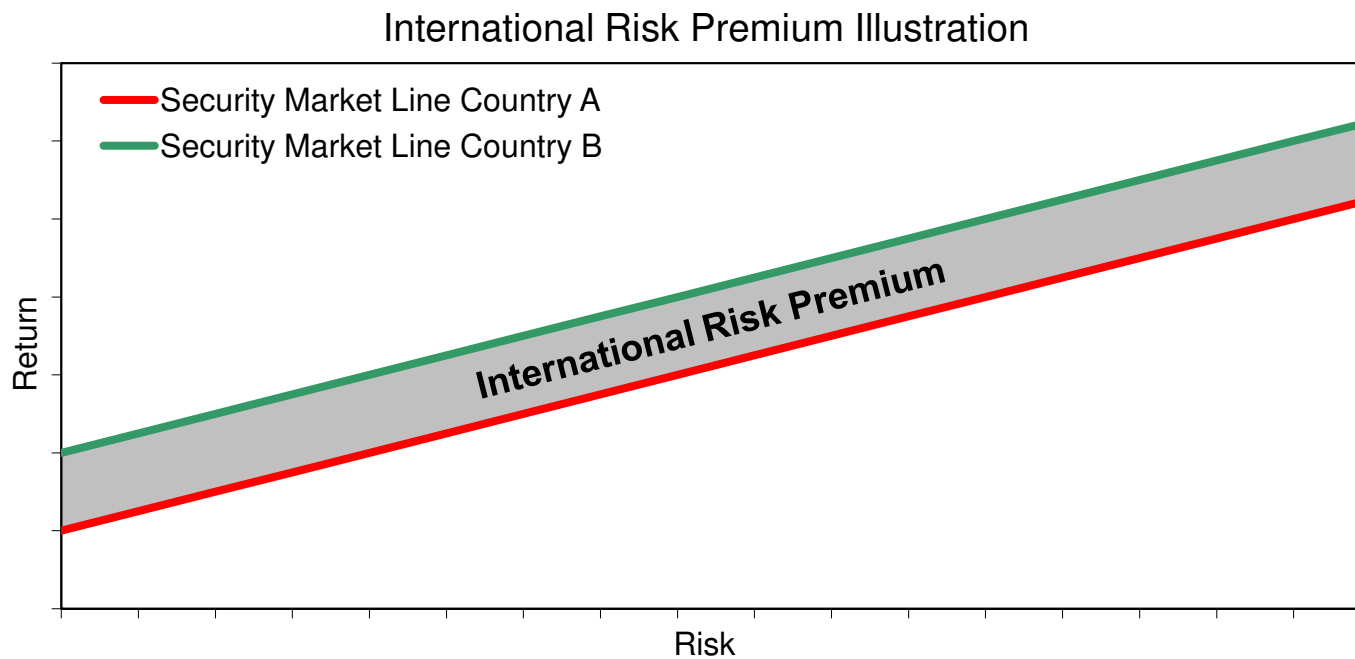
ACTIVE ASSET AND CURRENCY MANAGEMENT

**Balassa-Samuelson
and the
International Risk Premium**

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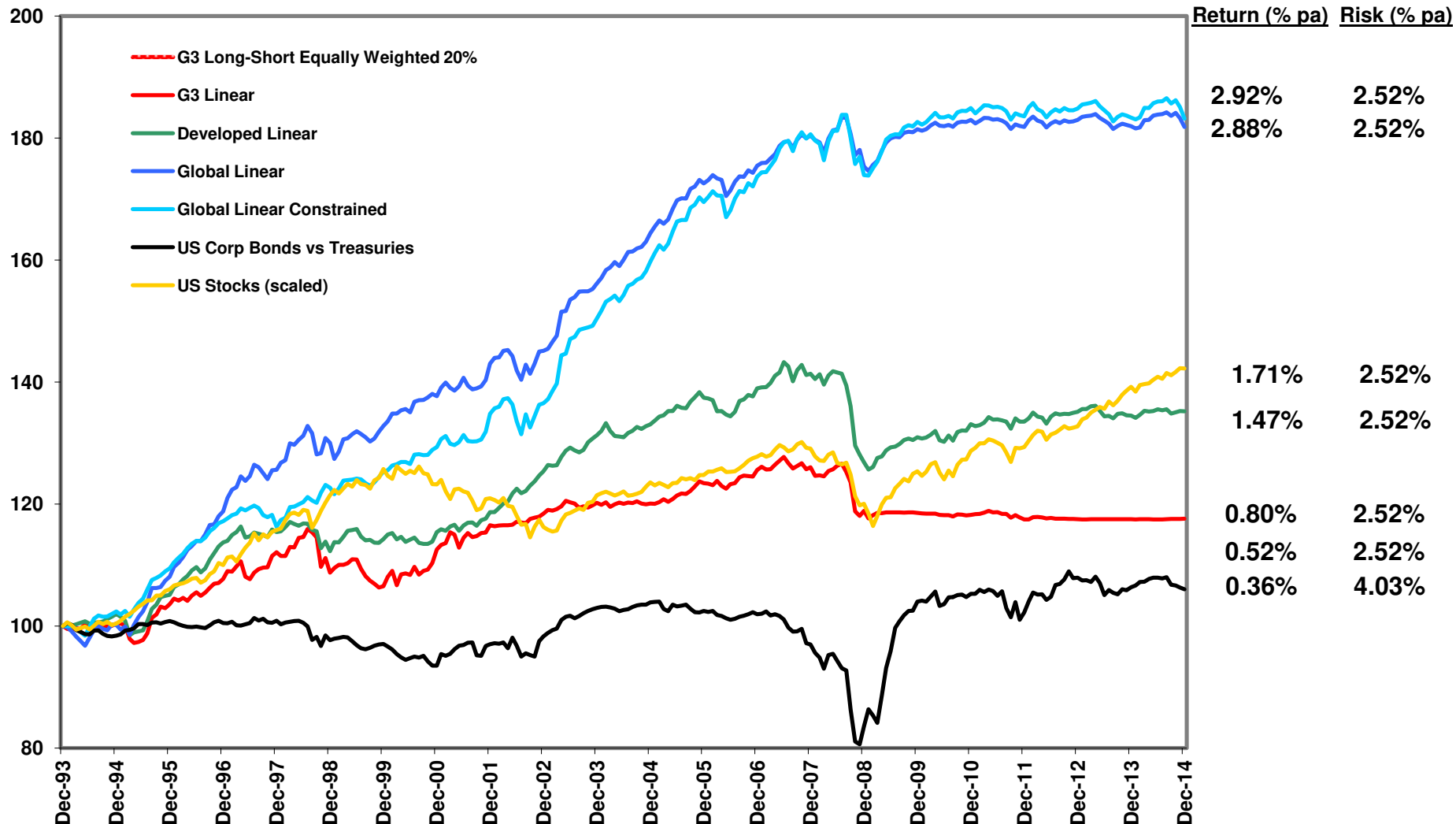
International Risk Premia

- Expected real return and risk relationships differ by country.
- These differences exist to efficiently allocate capital globally.
- We call these differences International Risk Premia and they are well proxied by nominal yield differences.
- Investing in International Risk Premia is easily achieved by buying higher-yielding currencies while selling lower-yielding currencies.



Historical return to International Risk Premia

Historically, returns to International Risk Premia have been very attractive.

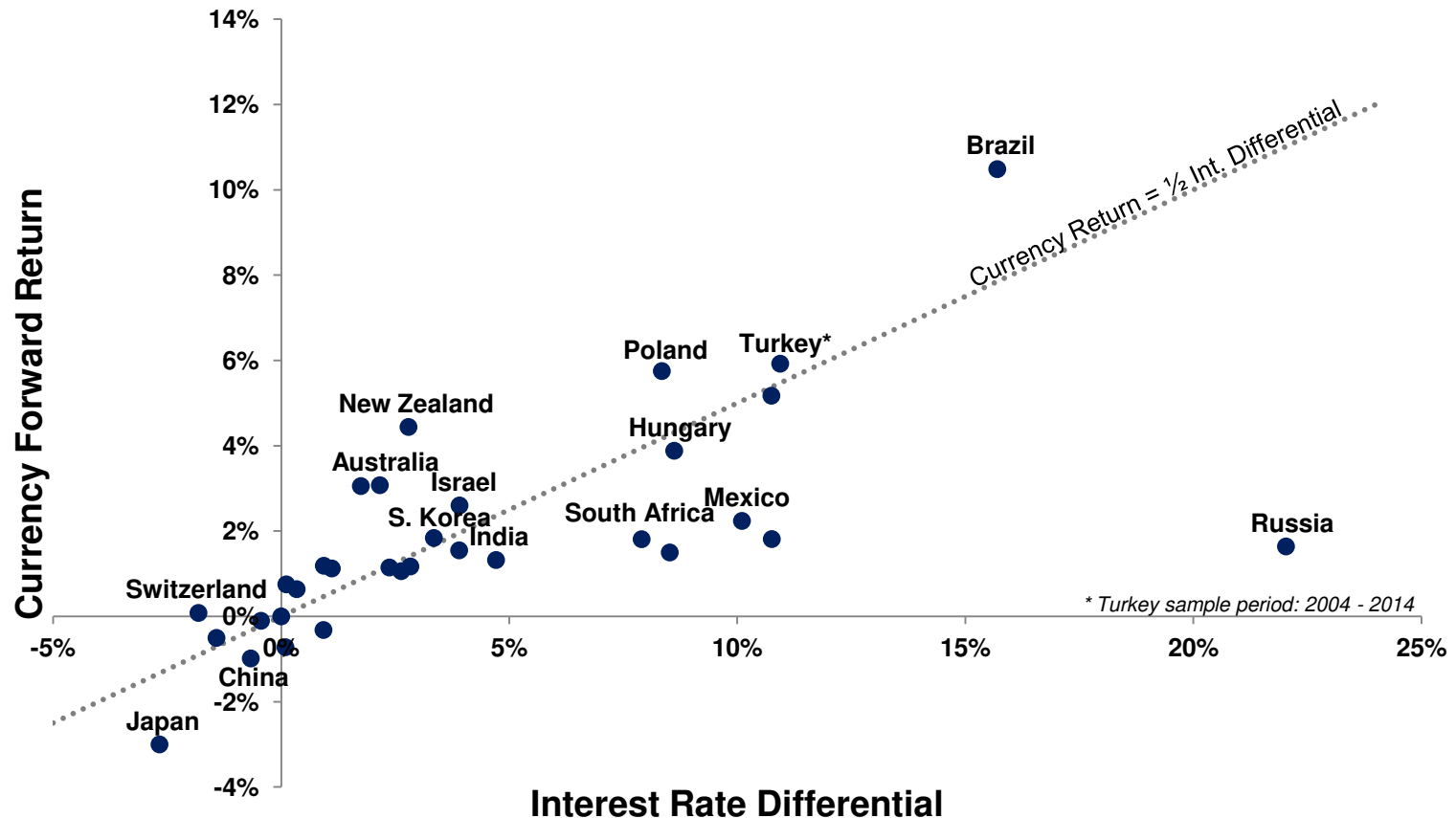


Sources: US Stocks; MSCI USA Index, US Corp Bonds; Barclays US Corp. Investment Grade Index

International Risk Premium is half the interest rate differential

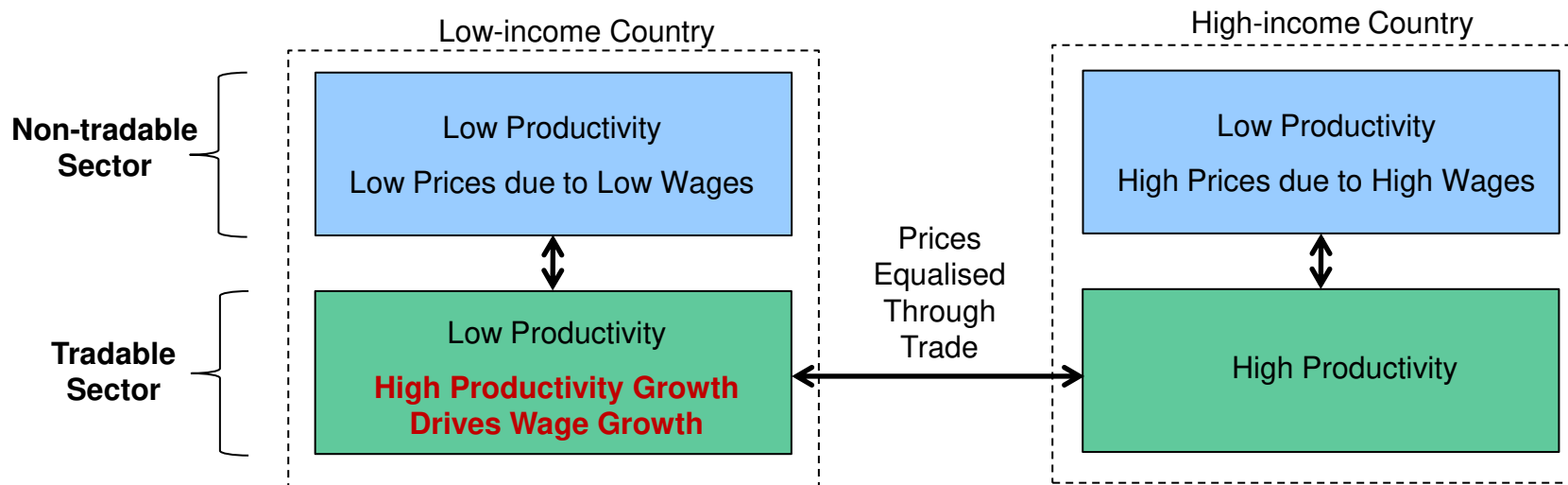
- Historically, currency spot rates have only depreciated by half of the interest rate differential (forward premium,) leaving the rest of the forward premium as return in the forward market.

Currency Forward Return vs Interest Rate Differential (1994 - 2014)



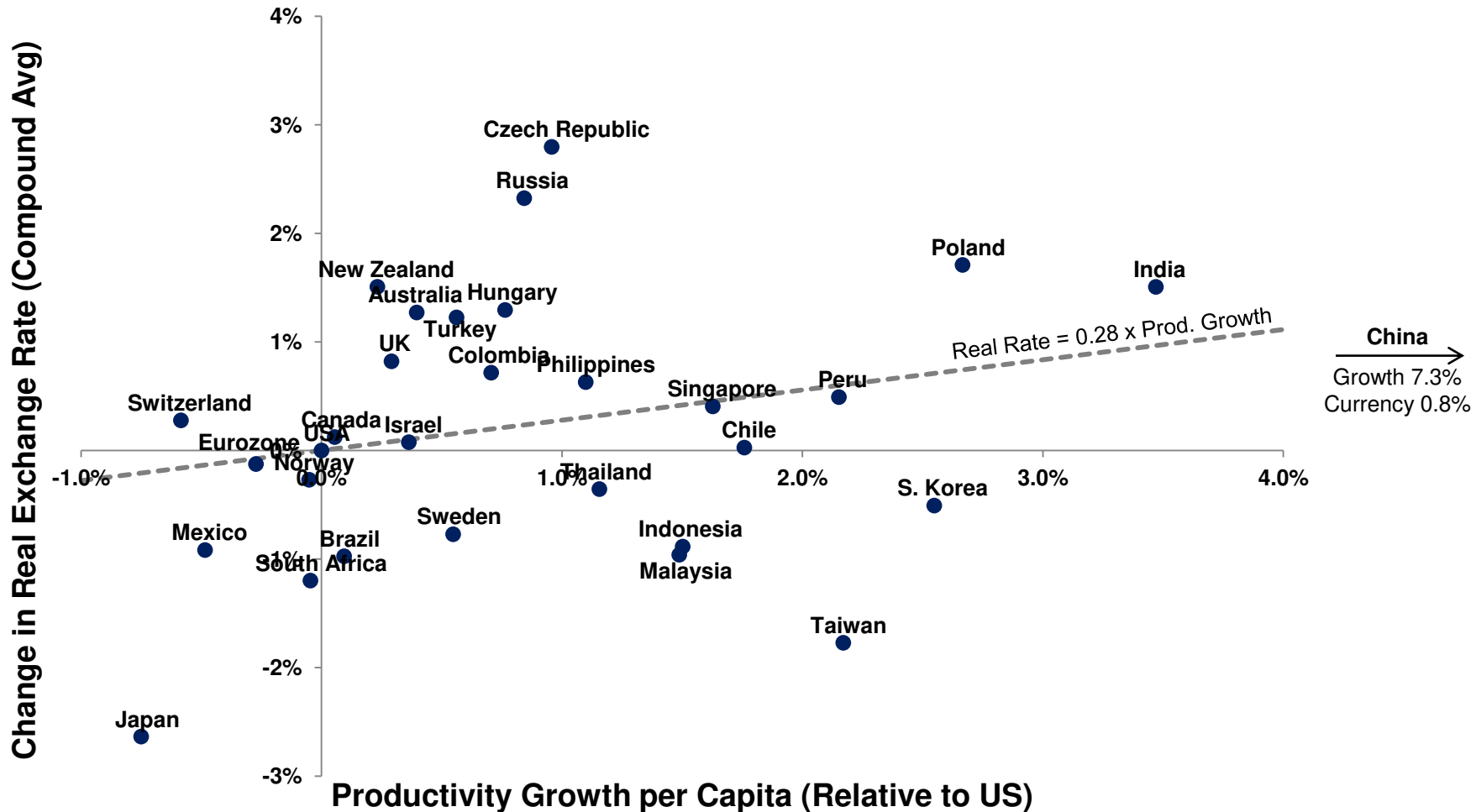
Balassa-Samuelson: real FX rates of economies with relatively high growth should rise

- Productivity growth is typically higher in the tradable sector than in the non-tradable sector, so the movement of real rates (constructed with both tradable and non-tradable prices) should be proportional to cross-country differences between tradable and non-tradable productivity growth.^[1]



$$\text{Real Rate} = \text{Exchange Rate} \times \frac{\overset{\text{Prices Steady}}{(P_{\text{tradable}} + P_{\text{non-tradable}})} \overset{\text{Prices Rising}}{}}{\underset{\text{Prices Steady}}{(P^{\text{world}}_{\text{tradable}} + P^{\text{world}}_{\text{non-tradable}})} \underset{\text{Prices Steady}}{}}$$

Real Rate Change vs Relative Productivity Growth (1994 - 2014)



- At first sight, productivity does not appear to explain currency forward return very well:

Currency Forward Return Model (1994 – 2014)

Currency Forward Return	=	0.02 (0.00)	+	0.27 x (0.45)	Relative Productivity Growth
<i>(Parameter standard error in brackets)</i>					

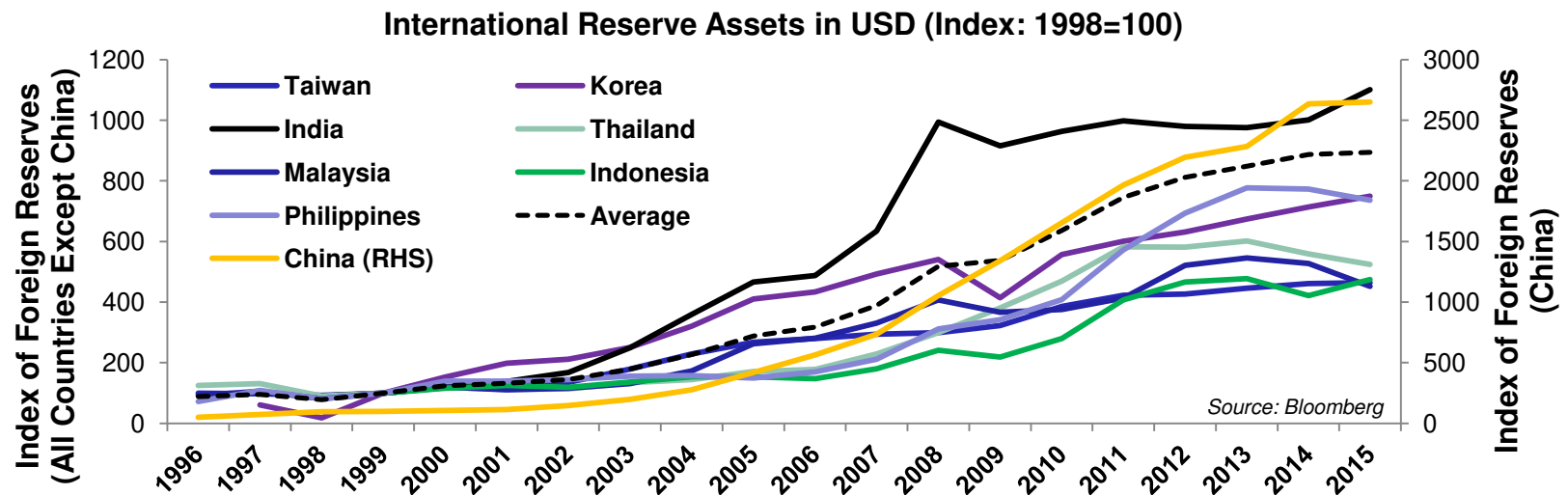
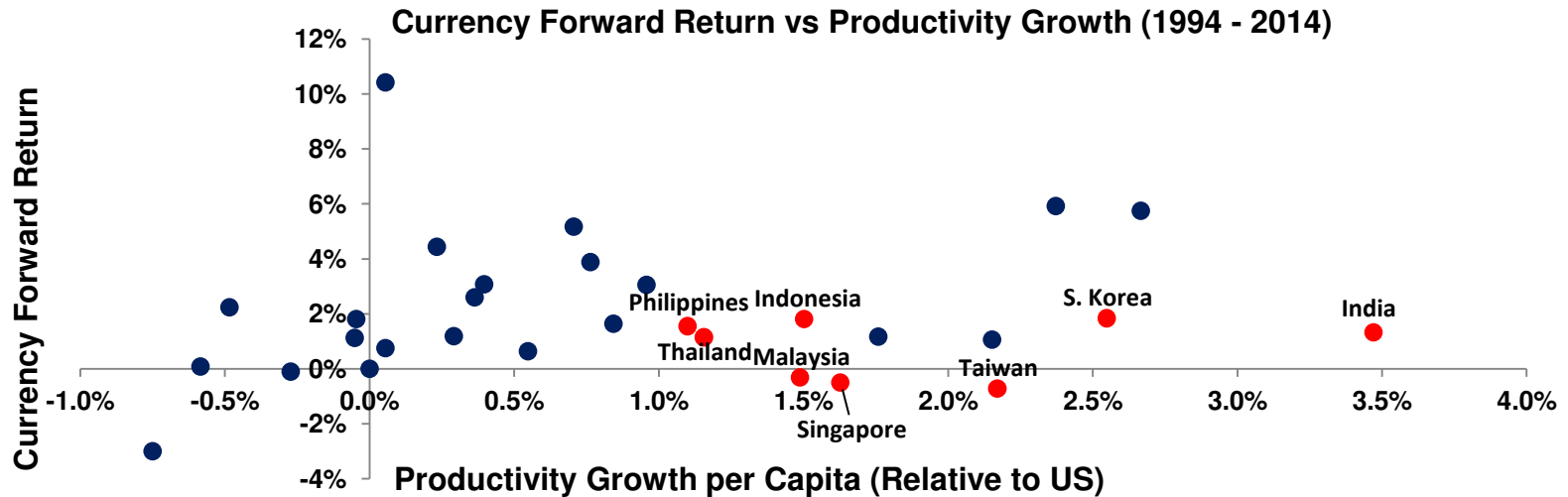
- It has no explanatory power when IRP is accounted for:

Currency Forward Return Model (1994 – 2014)

Currency Forward Return	=	0.00 (0.00)	+	0.45 x (0.06)	Interest Rate Differential	+	-0.04 x (0.25)	Relative Productivity Growth
<i>(Parameter standard error in brackets)</i>								

Notes: OLS Regression on cumulative average of variables over all countries shown on page 4 excluding China and Russia; sample period 1994 - 2014

Emerging Asian central banks have kept their currencies weak despite strong economic growth



Return due to productivity increases do not overlap with return due to International Risk Premia

- Excluding Asia, relative productivity growth does have some explanatory power:

Currency Forward Return Model (1994 – 2014, $R^2 = 0.16$)

<p>Currency Forward Return = 0.02 (0.01) + 1.17 x (0.62) Relative Productivity Growth</p> <p style="text-align: right; font-size: small;"><i>(Parameter standard error in brackets)</i></p>

- Productivity does not explain any of the currency return explained by IRP. It is entirely complementary.

Currency Forward Return Model (1994 – 2014, $R^2 = 0.76$)

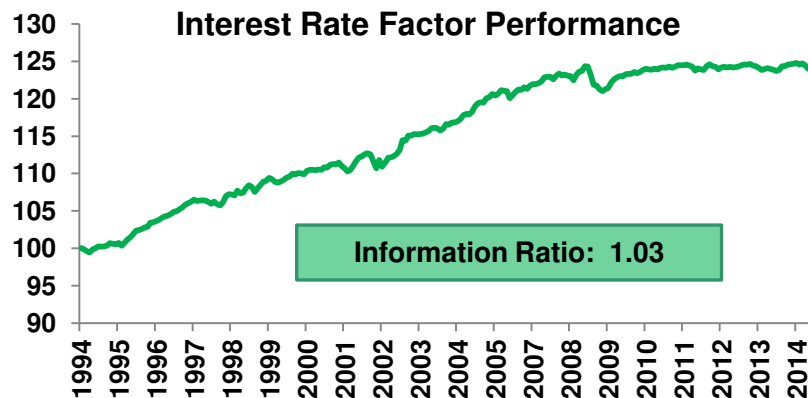
<p>Currency Forward Return = 0.00 (0.00) + 0.46 x (0.07) Interest Rate Differential + 0.41 x (0.35) Relative Productivity Growth</p> <p style="text-align: right; font-size: small;"><i>(Parameter standard error in brackets)</i></p>
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*Correlation between Variables: 0.31
(0.22)*

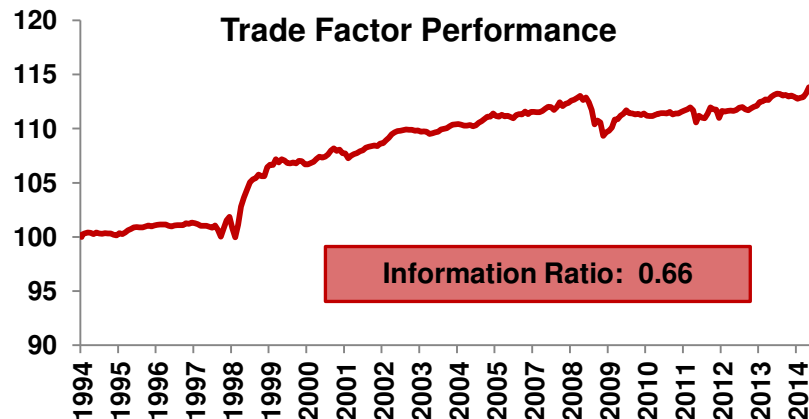
Notes: OLS Regression on cumulative average of variables over all countries shown on page 4 excluding Emerging Asia and Russia; sample period 1994 - 2014

This independence allows for breadth in the AL&P process

- Interest rate factors capture International Risk Premia, buying high interest rate currencies and selling lower interest rate currencies.



- Trade-based factors invest in countries with high export-led growth, funding through those with lower growth.



Correlation: 0.36

