FOREIGN RETURNS
FROM A DOMESTIC PERSPECTIVE

CAIM | CROWN AGENTS INVESTMENT MANAGEMENT

Local currency returns across markets are not comparable. Your home base is important.

- A USD-based investor can never access the EUR market local returns that a EUR-based investor can
- A EUR-based investor can never access the USD market local returns that a USD-based investor can
- A foreign investor will always have, in addition, either
  - FX volatility
  - Interest rate differentials (between domestic and foreign cash rates)
  - A mix of both

$$\boldsymbol{r_{foreign_{unhedged}}} = r_{foreign_{local}} + r_{fx_{foreign \cdot domestic}}$$

unhedged return ≈ local return of foreign asset + currency return

$$\boldsymbol{r_{foreign_{hedged}}} = r_{foreign_{local}} + r_{fx_{foreign \cdot domestic}} + r_{fx\ hedge}$$

$$\approx r_{foreign_{local}} + r_{fx_{foreign \cdot domest}} + \left(\left(r_{cash_{domestic}} + r_{fx_{domestic \cdot domestic}}\right) - \left(r_{cash_{foreign}} + r_{fx_{foreign \cdot domesti}}\right)\right)$$

$$\approx r_{foreign_{local}} {\color{red}+ r_{fx_{foreign \cdot domesti}}} + \left(\left(r_{cash_{domestic}} {\color{green}+ r_{fx_{domestic \cdot domest}}}\right) - \left(r_{cash_{foreign}} {\color{red}+ r_{fx_{foreign \cdot domest}}}\right)\right)$$

$$\approx r_{foreign_{local}} + \left(r_{cash_{domestic}} - r_{cash_{foreign}}\right)$$

$$\approx r_{cash_{domestic}} + \left(r_{foreign_{local}} - r_{cash_{foreign}}\right)$$

hedged return ≈ domestic cash + excess return of foreign asset vs. foreign cash

*"cash" is implied cash rate from forwards, which includes bias. e.g. EURI1M, from Bloomberg

BASE CURRENCY RETURN CALCULATIONS

2 steps: find return in USD, then convert to base currency

$$r_{asset_{base}} = \frac{(1 + r_{asset_{local}}) \times (1 + r_{fx_{US}})}{(1 + r_{fx_{USD \cdot base}})} - 1$$

$$r_{hedge_{base}} = r_{cash^*_{long\_leg_{base}}} - r_{cash^*_{short\_leg_{base}}}$$

asset returns in local currency x fx returns in USD = asset returns in USD / base FX in USD = asset returns in base currency

*implied cash rate from forwards, e.g. EURI1M Index, etc. (from Bloomberg)