

# FOREIGN RETURNS FROM A DOMESTIC PERSPECTIVE

**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

$$r_{foreign\_unhedged} = r_{foreign\_local} + r_{fx\_foreign\_domestic}$$

unhedged return  $\approx$  local return of foreign asset + currency return

$$\begin{aligned} r_{foreign\_hedged} &= r_{foreign\_local} + r_{fx\_foreign\_domestic} + r_{fx\_hedge} \\ &\approx r_{foreign\_local} + r_{fx\_foreign\_domestic} + \left( (r_{cash\_domestic} + r_{fx\_domestic\_domestic}) - (r_{cash\_foreign} + r_{fx\_foreign\_domestic}) \right) \\ &\approx r_{foreign\_local} + r_{fx\_foreign\_domestic} + \left( (r_{cash\_domestic} + r_{fx\_domestic\_domestic}) - (r_{cash\_foreign} + r_{fx\_foreign\_domestic}) \right) \\ &\approx r_{foreign\_local} + (r_{cash\_domestic} - r_{cash\_foreign}) \\ &\approx r_{cash\_domestic} + (r_{foreign\_local} - r_{cash\_foreign}) \end{aligned}$$

hedged return  $\approx$  domestic cash + excess return of foreign asset vs. foreign cash

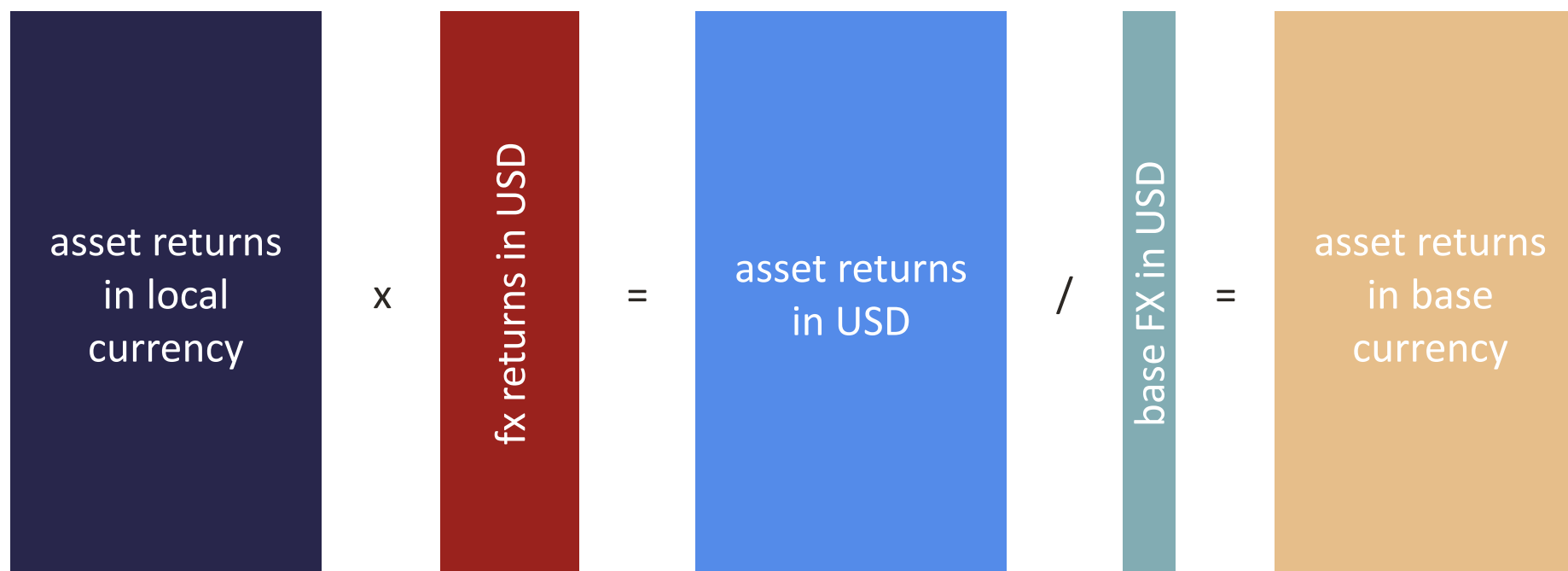
\*"cash" is implied cash rate from forwards, which includes bias. e.g. EUR11M, from Bloomberg

# BASE CURRENCY RETURN CALCULATIONS

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

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

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



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