

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

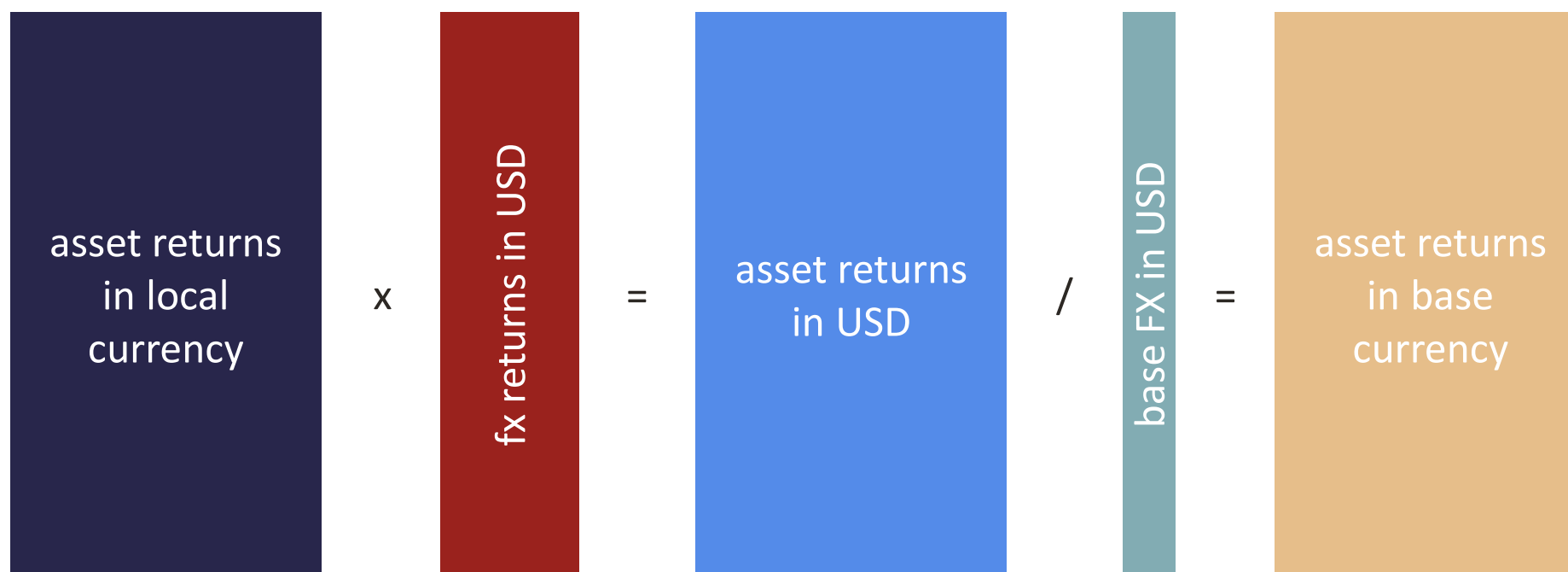
*"cash" is implied cash rate from forwards, which includes bias. e.g. EUR1M, from Bloomberg

BASE CURRENCY RETURN CALCULATIONS

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

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

$$r_{hedge_{base}} = r_{cash_{long_leg_{base}}}^* - r_{cash_{short_leg_{base}}}^*$$



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