Comparing the Rate of Return on Assets between Two Countries:
The arithmetic of Chapter 14

The home Rate of Interest is $R_{\$}$.
The foreign Rate of Interest is $R_{€}$.
The Spot Exchange Rate is $E_{\$/€}$ which we shall abbreviate to E.
The exchange rate expected in the future is E^e.

Take \$1 and compare the return at home, $R_{\$}$, to the return if you were to take the 1\$ abroad and invest in €'s abroad at $R_{€}$ and then bring it back in \$.

$\$1(1+R_{\$})$ is what you can earn at home

If you take that money and convert it into Euros, then this gives you [\$1/ $E_{\$/€}$] Euros to invest

Invest your [\$1/ $E_{\$/€}$] Euros for the year meaning that at the end of the year you have [\$1/ $E_{\$/€}$](1+ $R_{€}$) Euros.

Take your [\$1/ $E_{\$/€}$](1+ $R_{€}$) end of year Euros and bring them home at the exchange rate you expect to prevail at the end of the year; E^e: [\$1/ $E_{\$/€}$](1+ $R_{€}$) E^e

Therefore you compare $\$1(1+R_{\$})$ with [\$1/ $E_{\$/€}$](1+ $R_{€}$) E^e.

If $\$1(1+R_{\$})$>[\$1/ $E_{\$/€}$](1+ $R_{€}$) E^e, then keep your money at home.

If $\$1(1+R_{\$})$<[\$1/ $E_{\$/€}$](1+ $R_{€}$) E^e, then you take your money abroad.

If $\$1(1+R_{\$})$=[\$1/ $E_{\$/€}$](1+ $R_{€}$) E^e, then you are indifferent between investment at home or abroad.

This relationship is *approximated* by:

$$R_{\$}=R_{€}+\left(\frac{E^e-E}{E}\right).$$

In equilibrium the rate of return on domestic assets is equal to the rate of return on foreign assets plus the expected depreciation of the dollar. This approximation follows from:

$$(1+R_{\$})=\left(\frac{E^e}{E}\right)(1+R_{€})$$

$$(1+R_{\$})=\left(\frac{E^e}{E}\right)+R_{€}\left(\frac{E^e}{E}\right)$$

$$(1+R_{\$})=\left(\frac{E^e-E}{E}\right)+1+R_{€}\left(\frac{E^e}{E}\right)-R_{€}\left(\frac{E}{E}\right)+R_{€}$$

$$(R_{\$}) = \left(\frac{E^e - E}{E}\right) + R_{€} + R_{€}\left(\frac{E^e - E}{E}\right)$$

However, since $R_{€}$ and $\left(\frac{E^e - E}{E}\right)$ are both percentage rates, their product is considered to be a second order of small in comparison to the levels of R or $\left(\frac{E^e - E}{E}\right)$. Thus we assume that their product is zero: $R_{€}\left(\frac{E^e - E}{E}\right) \to 0$, and we are left with the relationship in the text:

$$R_{\$} = R_{€} + \left(\frac{E^e - E}{E}\right).$$