

## Converting exchange rates: multiply or divide?

- Given XR = \$1.20/£
- Convert \$1,000 to £

$$\frac{\$1,000}{\$1.20/\pounds} = \pounds 833.33$$

\$ in numerator and denominator cancel; £ in denominator goes to numerator. Sensibility check: £ are more valuable, fewer £ needed to equal \$1,000.

- Convert £1,000 to \$

$$\pounds 1,000 \times 1.20 \text{ \$/\pounds} = \$1,200$$

£ in numerator and denominator cancel; \$ remain. Sensibility check: \$ are less valuable, more needed to equal £1,000

## Big Mac PPP calculation

Follow these steps; ignore Box 14.4 which has an error. Example in parentheses.

- Given U.S. Big Mac price (\$4.20)
- Given Big Mac price in local currency (Japan: ¥500)
- Given actual exchange rate (101 ¥/\$)
- Convert foreign Big Mac price to \$ ( $500\text{¥} \div 101\text{¥}/\$ = \$4.95$ ). Be careful to multiply if the XR is \$/unit; divide if it is in units/\$. See previous page.
- Divide the converted foreign Big Mac price by the US price ( $\$4.94/\$4.20 = 1.176$ )
- If the ratio is less than one, currency is under-valued. Subtract from one and multiply by 100% to get percent undervaluation.
- If the ratio is greater than one, over-valued. Subtract one and multiply by 100% to get percent overvaluation ( $1.176 > 1$ ; ¥ is over-valued by 17.6%).
- If equal one, PPP holds true.

Pick one of the currencies in Table 14.2, follow these steps, and compare your answer with the last column.