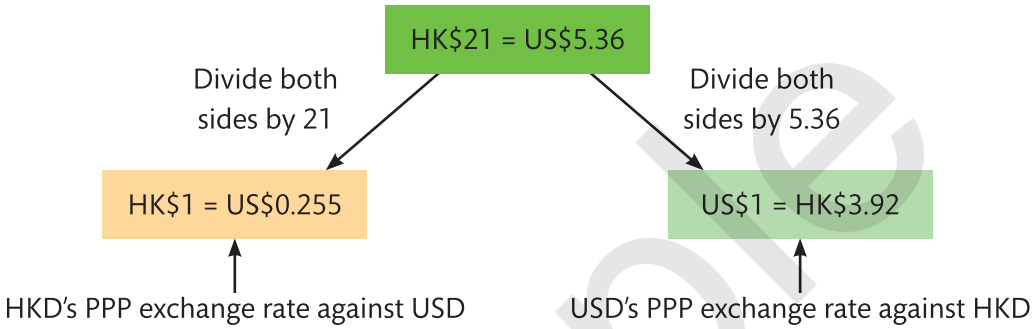
Supplementary content (for HKDSE 2028 and onwards)

Calculation of the PPP exchange rate

To calculate the purchasing power parity (PPP) exchange rate, we need to find the price of a common basket of goods in the local currencies of countries or territories. To simplify calculations, a single good is often selected, and a Big Mac is one of the most commonly used items.

Suppose the price of a Big Mac is HK$21 in Hong Kong and US$5.36 in the US. Since the purchasing power of HK$21 = the purchasing power of US$5.36, the PPP exchange rate of the two currencies is calculated as follows:



Based on the above calculation, the USD's PPP exchange rate against the HKD (i.e., HK$3.92) is lower than the market exchange rate (about HK$7.8). Therefore, the market exchange rate of the USD against the HKD is overvalued and higher than its purchasing power.

The table below compares the market exchange rate and the PPP exchange rate (estimated by a Big Mac) of several common currencies:

	PPP exchange rates of US$1	Market exchange rates of US$1 (Jan 2023)
Hong Kong	HK$3.92	HK$7.83
Euro area	EUR 0.91	EUR 0.92
Japan	JPY 76.49	JPY 130.10

Source: The Economist, Jan 2023

However, using the price of a Big Mac to estimate the PPP exchange rate has the following problems:

- The use of a single good (a Big Mac) for estimation cannot reflect the overall purchasing power of a currency in its domestic economy.
- The quality and ingredients of a Big Mac can vary across different places and a direct comparison cannot be made.
- The price of a Big Mac can be affected by government policies, such as taxes, subsidies, etc., which can distort the estimated PPP exchange rate.

In conclusion,

$$\text{PPP exchange rate of Currency A against Currency B} = \frac{\text{Price of a basket of goods in Currency B}}{\text{Price of the same basket of goods in Currency A}}$$

If the market exchange rate of Currency A is larger (smaller) than its PPP exchange rate, Currency A is overvalued (undervalued).