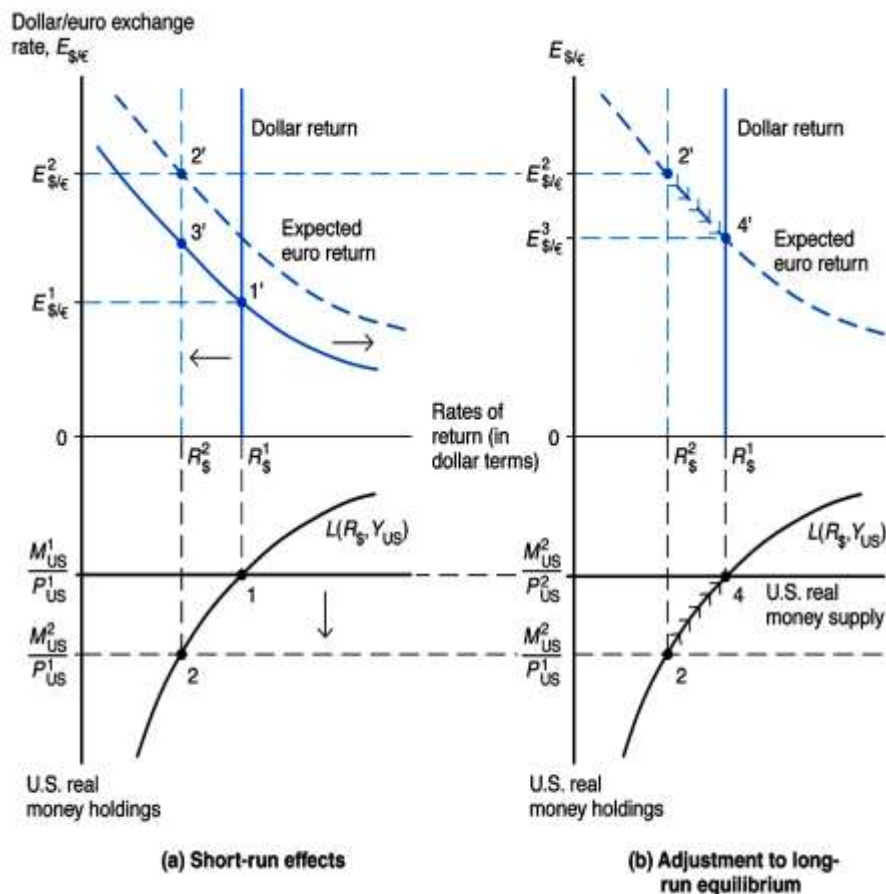


Answer Key to Homework 2

- Using figures for both the short run and the long run, show the effects of a permanent increase in the U.S. money supply on dollar-euro exchange rate. Try to line up your figures to the short and long run equilibria side by side. Assume that the U.S. real national income is constant.

SOLUTION:

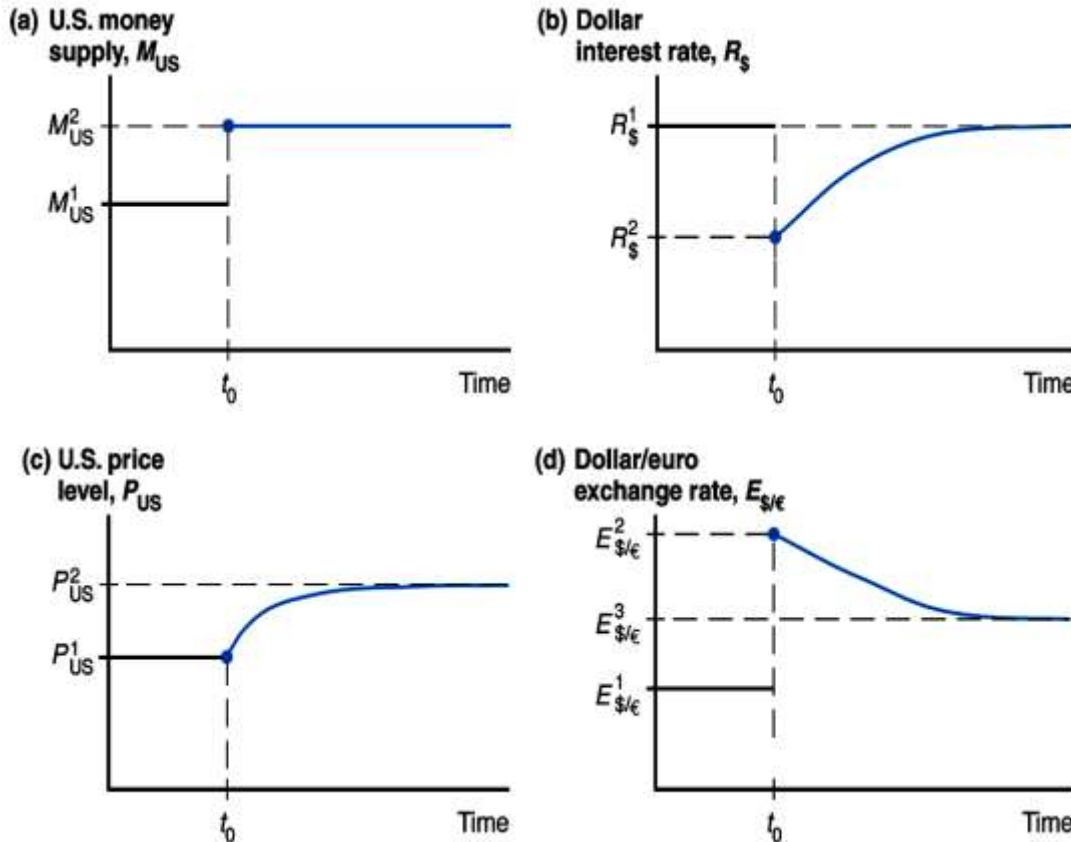


- Using 4 different figures, plot the time paths showing the effects of a permanent increase in the Singapore's money supply on:

- A. Singapore money supply.
- B. the Singapore interest rate.
- C. the price level in Singapore.
- D. the Singapore dollar/Baht exchange rate.

SOLUTION:

I am replacing SGD/THB with \$/€.



4. Suppose a Big Mac at a McDonald's in New York costs \$2.50 and FFr 15 in Paris.
- a. What spot exchange rate establishes the Law of One Price for these two commodities?
 - b. If the current spot exchange rate is FFr 5/\$, what is the real exchange rate? What are the units of the calculation?
 - c. According to your calculation, is the dollar over- or under-valued? How about the French franc?

SOLUTIONS:

- a. $E = \text{FF } 15/\$2.50$; $E = \text{FF}6/\$$ or $\$ 0.16667/\text{FF}$
- b. $E (\text{FF}/\$) / [(\text{FF}/\text{Paris Big Mac}) / (\$/\text{NY Big Mac})] = 5 \text{ FF}/\$ / (15 \text{ FF}/\$2.50) = 0.83333 \text{ Paris Big Macs}/\text{NY Big Macs}$
- c. $E_t/E_{\text{PPP}} = \$0.20 / \$0.16667 = 1.20$. The dollar is undervalued by 20%. The FF is over-valued. We can only get 83.3% of a Parisian Big Mac versus one NY Big Mac.
5. Suppose the expected annual inflation rate in the UK is 4.5% and that in the US 3%. According to PPP, will the dollar appreciate or depreciate? By which percentage?

SOLUTION:

The expected currency depreciation is the differential of inflation rates between the two countries: $E\$/\text{£} = p\$ - p\text{£}$ measures the US\$ depreciation. $3\% - 4.5\% = -1.5\%$; US\$ appreciation of 1.5% or UK£ depreciation of 1.5%

6. Suppose the current spot rate is $\$ 1.55/\text{£}$ on the first of January. By year's end, the US CPI is expected to climb from 144 to 150 and the UK CPI is expected to climb from 120 to 130. According to PPP, what is the expected spot rate on December 31?

SOLUTION:

$$E_{\text{PPP},t+1} = S_{t,\$/\text{£}} * (\text{CPI}_{t+1,\text{US}}/\text{CPI}_{t,\text{US}})/(\text{CPI}_{t+1,\text{UK}}/\text{CPI}_{t,\text{UK}});$$

$$E_{\text{PPP,Dec}} = \$1.55/\text{£} * (150/144)/(130/120) = \$ 1.4904/\text{£}$$