

# EC1010: Solutions: Tutorial Questions 7

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1. Purchasing power parity (PPP) implies that the real exchange rate is of value one. To see this, recall that PPP predicts

$$P = \frac{P^*}{e}$$

i.e., the cost of a basket of goods at home and abroad (when denominated in the same currency) should be equal. This relationship implies that  $\epsilon = \frac{eP}{P^*} = 1$ .

2.
  - a. Because demand for the country's exports would rise, the demand for the domestic currency would also rise. Because of the lower domestic price level, domestic residents would import less; in turn, this would cause the supply of domestic currency to fall.
  - b. Both the rise in demand and fall in supply of domestic currency would cause the value of the domestic currency to appreciate.
  - c. The real exchange rate  $\frac{eP}{P^*}$  would remain the same (at a value of one.) According to purchasing power parity, the fall in  $P$  would cause a proportional *rise* in  $e$ , and so the real exchange rate would remain fixed.
3. Because the value of the good is relatively expensive in the U.S. (in euro terms), PPP indicates that the value of the dollar is overvalued (i.e., too high.) PPP predicts that the dollar would weaken to a level that ensures that the cost of goods is the same in both countries. That is, PPP predicts the dollar would depreciate relative to the euro.
4. PPP predicts that

$$P = \frac{P^*}{e} \Rightarrow \epsilon = \frac{eP}{P^*} = 1$$

Suppose now that  $P$  refers to the domestic price level and  $P^*$  to the U.S. price level (and where  $e$  is the value of the domestic nominal exchange rate relative to the dollar.) Therefore if  $P$  is rising faster than  $P^*$  (i.e., higher domestic inflation), then  $e$  must be falling. In

other words, if a country has higher inflation than the U.S., then, to ensure equality, its exchange rate should depreciate relative to the dollar. The opposite relationship holds if the domestic country has lower inflation than the U.S. For this reason, Figure 1 is indeed consistent with PPP theory.

5.
  - a. The quantity theory predicts that when the money supply doubles, the price level will also double.
  - b. PPP predicts that  $\frac{eP}{P^*} = 1$ . Thus, if  $P$  doubles,  $e$  will fall by 50 percent.
  - c. Changes in the money supply cause proportional changes in the exchange rate in the opposite direction.
6. From this observation, we can't say anything about the level of *cyclical* unemployment in France. The observation refers to the average level of unemployment, which relates to the level of *structural* unemployment. Thus we can infer that structural unemployment is higher in France. Regarding Figure 2, it is clear that in the recent recession unemployment in the U.S. rose from around 4.5 to 10 percent; i.e., a rise of 5.5 percent. Because this is associated with a recession, this rise would constitute a rise in cyclical unemployment.
7.
  - a. A vertical labour supply curve implies that labour supply is insensitive to changes in the real wage. That is, when the real wage changes, labour supply remains the same.
  - b. Rising real wages would stem from continual increases in labour demand. (One could also explain this via leftward shifts of the labour supply curve, but this explanation would be insufficient to explain the magnitude of real wage increases over time.)
  - c. The fall in labour supply would shift the labour supply curve inwards; now we have lower labour supply at *any* given real wage. As a result, real wages would have risen in Europe at the time. However, if the rate of labour participation rose, then the labour supply curve would shift outwards again and could mitigate or indeed reverse this rise in real wages.