

Suggested Solutions to Problem Set III

1. A decrease in taxes and an increase in government spending are both expansionary fiscal policies. Any permanent fiscal expansion worsens the current account. This is because the increase in demand for domestic goods (caused by the expansionary fiscal policy) makes long-run exchange rates appreciate. In terms of the DD-AA framework, a permanent fiscal expansion shifts the DD curve to the right, and because of the effect on the long run exchange rate, the AA curve shifts to the left, keeping output at the full-employment level. The new equilibrium will have a smaller exchange rate, what stimulates imports and decreases exports. Hence, the CA will decrease.

This could also be seen with the help of the XX schedule, which represents combinations of the exchange rate and income for which the current account is at a given level X. Points above XX represent current account levels bigger than X and points below it represent current account levels lower than X. Because the new equilibrium will be below the XX schedule that passed through the initial equilibrium (same output, lower exchange rate), CA will be smaller.

Note: The difference between the decrease in taxes and the increase in government spending will be reflected in how much the curves shift. Taxes shift the DD curve since disposable income increases and this affects C and CA. Government spending shifts the DD curve as G directly affects Y, so the DD shifts more in this case.

2.

a) With a temporary tax cut, the DD curve shifts to the right. Since it is temporary, the AA curve would not shift and the new equilibrium would have a lower exchange rate and larger output. Because the new equilibrium will necessarily be below the original XX schedule we know that CA deteriorated.

b) Yes.

c) With a monetary contraction, the AA curve shifts in, worsening the CA further. Output will be back to the level it had prior to the temporary tax cut.

d) The shift in the AA curve pulls us back to the original income, so income is moderated. However, the CA deteriorates further, as we saw in part c). So, the statement is not accurate.

3. High-inflation countries have much more flexible price levels than low-inflation economies, and hence will possess higher pass-through because prices change more quickly. The key to the question is price flexibility. If prices are flexible, that is, if prices adjust quickly to long-run levels, then it is as if everyone is living in “the long run”.

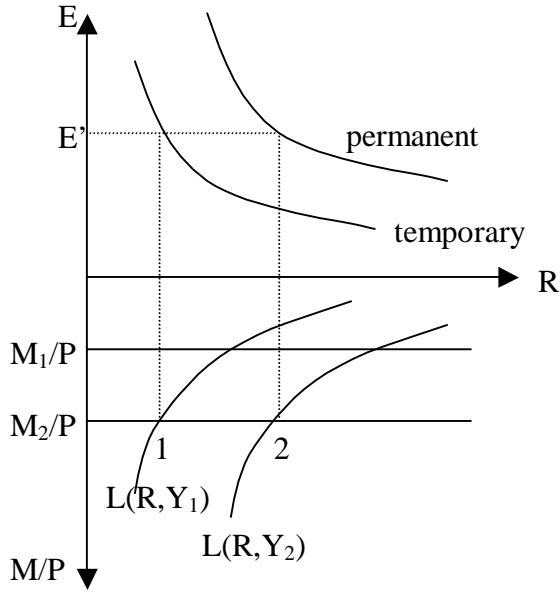
In the long run, PPP should provide a reasonable description of exchange rates and prices. If $P = EP^*$ and the domestic price level is highly flexible, then we can expect to observe that exogenous changes in E will be closely associated with changes in P . Therefore, in a high-inflation environment, it is much more likely for the prices of imported goods to rise as well.

Put another way, rising prices of domestic goods would generate excess demand for traded goods and would compel consumers to purchase more imports. This excess demand for traded goods would then push import prices upward. Consequently, all prices that consumers face would be higher than before. It is for this reason that we tend to see higher exchange-rate pass-through in high-inflation economies.

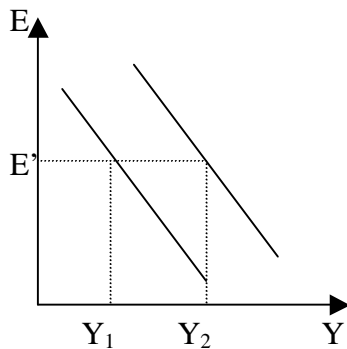
4. A permanent fiscal expansion would happen when the government increases government spending and/or cut taxes permanently. However, both actions would tend to reduce government savings (from chapter 12, remember that $S^G = T - G$) and generate budget deficits. Because these deficits eventually have to be repaid, sooner or later the government will have to raise taxes or decrease spending, resulting in a fiscal contraction. Hence, when considering the effects of fiscal expansions in exchange rates and output, it is in general more realistic to assume that the fiscal expansion is always temporary.

Persistent CA imbalances raise domestic liabilities held by foreigners that eventually have to be paid. Hence, similarly to permanent fiscal expansions, there is no such a thing as persistent deficits in the CA.

5. Suppose money supply rises from M_1 to M_2 , as shown in the lower panel below. If this rise is permanent, expected exchange rates will increase, shifting the interest parity condition to the right in the upper panel. Now, in the case of a temporary shift in money supply to M_2 , for any given exchange rate level E' , the foreign exchange and money markets can only be in equilibrium in the short-run if the aggregate real money demand schedule passes by point 1. Similarly, for a permanent increase in money supply to M_2 , for any given exchange rate level E' , the foreign exchange and money markets can only be in equilibrium in the short-run if the aggregate real money demand schedule passes by point 2. But this can only happen if output in the temporary case is smaller than output in the permanent case: $Y_1 < Y_2$.



To see how differently temporary and permanent increases in monetary policy affect the AA schedule in the AA-DD framework, we just have to note that in the later case we have a bigger level of Y at any given level E . This can only hold if the AA schedule shift further to the right in the case of a permanent increase in M , as depicted in the graph below.



6. The AA-DD model is a short-run model that does not include an explicit term for wealth. Like many other questions on these problem sets, this question asks you to consider economic phenomena for which NO specific assumptions have been made in the models we have developed. In this case, we need to “think outside the box” for a moment to think of how to adapt the DD-AA framework to include wealth effects.

If one’s total level of wealth deteriorates, then consumption can reasonably be considered to be lower. If the value of one’s assets declines for any particular reason, it is safe to say that the consumption function, $C(\cdot) = C(Y - T)$, shifts downward. That is, you consume less for every given level of disposable income with a decline in wealth.

We know that in the basic AA-DD model, when Y is initially at its full-employment level, a permanent fiscal expansion pushes DD to the right (by increasing aggregate demand) and AA to the left (by shifting the expected exchange rate, E^e , down – recall expectations change whenever a policy action is “permanent”). This causes an unambiguous appreciation of the nominal exchange rate, E .

Armed with our assumption affects aggregate demand, we can now analyze the effects of a deterioration in wealth in the basic AA-DD framework. An increase in G therefore increases aggregate demand and pushes the DD curve to the right. But since G increases the government’s budget deficit, total national savings fall, national wealth falls, and consumption decreases. This will tend to moderate the rightward shift in DD and, if the decline in wealth continues over time, will push DD to the left. The appreciation in E will be less than before, and if the decline in wealth is sufficiently large, DD could end up to the left of where it started. Over time, we predict that E will fall less than before, and possibly even depreciate.

The effect on q when not accounting for such wealth effects is that E falls and P rises due to the rise in aggregate demand. Therefore, q appreciates. When accounting for possible deteriorations in wealth due to a permanent fiscal expansion, we can say that because E falls by less and because P rises by less due to the decline in consumption, q appreciates by less when wealth deteriorates. q may in fact depreciate if the nominal exchange rate depreciates as well.

In the “short-run aftermath” of a “permanent” fiscal expansion, instead of seeing an appreciation in E , we observe that any appreciation in E is short-lived. The appreciation in the nominal exchange rate will be reversed by the negative wealth effects due to the fiscal expansion.

(If we *further* add in the additional assumption that E^e rises when a fiscal expansion is undertaken during a time of government deficits, it is possible to derive the result that E depreciates when a permanent increase in government spending or a cut in taxes is implemented, a situation that resembles the US economy today.)