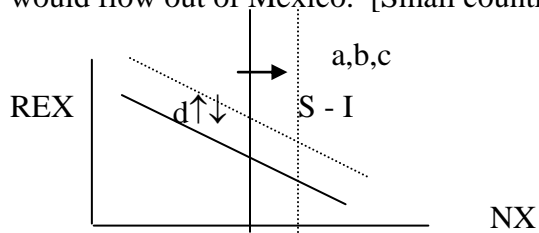


Answers to Problem Set 3

- 1a. Low U.S. savings means that the U.S. will have a relatively low level of investment. Since sources must equal uses $I = S_p + T - G = S_p + S_g =$ national savings. If national savings fall, so must domestic investment. By the same relationship, $G - T = S_p - I$. If governmental deficits rise, then either domestic private savings must rise or domestic investment must fall. This means either private consumption or private investment is crowded out.
- b. In an open economy, when national savings fall short of national expenditure, foreign savings or net capital inflows must come to the rescue or else the circumstances described in 1a would hold.
- 2a. Increased Mexican savings would increase $S-I$; thus, $(S_p - I) + (T - G) \uparrow$ so $NX \uparrow$ (the trade balance). By the graph below, the real exchange rate would fall, and since prices would not be affected in a Neo-classical world, so would the nominal exchange rate. Net capital would flow out of Mexico. [Small country assumption applies.]



- b. Reduced governmental expenditures generate the same results as an increase in domestic savings as in a.
- c. Since $NX = (S_p - I) + (T - G)$ and $NX \uparrow$, something on the right hand side (national savings) must increase. An increase in $S-I$ shifts the vertical line to the right and the rest of the results follow a above. Note: One might argue that NX increases for a given REX, and the result would be an increased REX with no effects on other variables. Such a result is unlikely to hold because an increase in NX leads to an increase in income which generates additional savings. The actual results depend upon the sensitivity of each variable to changes in r and REX.
- d. Quotas on US imports would temporarily increase NX which initially leads to an upward shift in NX . As imports decline, the peso price of Mexican goods would rise so e_X would fall, i_M would start to rise again, and the real exchange rate would rise to a new higher equilibrium level. Furthermore, if restricted imports discourage attempts to increase domestic productivity, then real income would fall and capital would flow out of Mexico. If a trade war were to ensue – quotas on Mexican exports to the US were instituted in the US – the NX curve would shift back down.

3.a The trade weighted exchange rate for Japan would be calculated as follows:

First determine the relative change for each country from 1995 to 2000 and 2000 to 2008. Then multiply the results by 100. Set the 1995 levels at 100, multiply each entry by its percent of trade and add the results to obtain the last row. From the Japanese perspective, the inverted value makes more sense; thus, Japan's terms of trade dropped between 1995 and 2000 and again between 2000 and 2008. See the table below.

Percent of Trade	Country	1995	2000	2008
30%	United States (yen/\$)	100	114.6	97.1
30%	China (Yen/ yuan)	100	114.5	115.3
40%	Europe (Yen/euro)	100	157.1	228.6
Trade Wted Ave	Yen / foreign currency	100	131.6	155.2
Inverted TWE	Foreign currency / Yen	100	76.0	64.4

b. The change in REX for Japan relative to the US would be calculated from the following equation:

$e(\text{growth}) + P(\text{Japan}) \text{ growth} - P(\text{US}) \text{ growth}$ with e stated in \$/ yen terms. This means that we must first invert the first row of the table in the problem to \$ / Yen.

1995 – 0.097 2000 - .0085 2005 - .010
 Growth in e from 1995 to 2000 $(.0085 - .0097) / .0097 = -12.4\%$

Growth in e from 2000 to 2005 $(.010 - .0085) / .0085 = 17.6\%$

Now, we can use the inflation data in the table to compute the change in REX

1995 to 2000 = $-12.4\% + 2.5\% - 13\% = -22.9\%$

2000 to 2008 = $17.6\% - 1.8\% - 22\% = -5.8\%$

The real exchange rate for Japan relative to the U.S. fell for both periods; so Japanese purchasing power in terms of \$ fell for both periods.