Homework 5 Answers

1. (Like problem 6 on the consumption smoothing worksheet). Assume 10 periods (the current period is 0, plus there are 9 additional periods 1 through 9). Your country has no capital controls and people in the country can freely borrow and lend in world financial markets at the world interest rate r*. In the face of each of the following kinds of negative shocks, how would your country adjust its gross national expenditure and trade balance in response?

a. The shock is country-specific and temporary (e.g., GDP falls by 100 in the current period only)

To keep consumption/expenditure as smooth as possible, the country will spread the pain of this negative shock equally over all periods. Thus, ignoring the interest rate, a temporary fall in GDP of 100 units will cause expenditure to fall by 10 units in each of the ten periods.

What about the trade balance? Remember: TB = GDP – GNE. In period 0, GDP falls by 100 and GNE falls by only 10, so TB must fall by 90. In plain English: since output is temporarily lower, the country runs a trade deficit (and borrows) so that its expenditure/consumption will not have to drop by the full amount of the income loss. The trade deficit is financed by borrowing, so the country's external liabilities increase and its external wealth falls. I.e., the country dissaves or incurs debt in period 0 to finance consumption in the face of the income/output loss.

In period 1, output returns to its regular value, but expenditure is still 10 units lower (as it is for all periods). So, TB will be 10 units higher in period 1 than it would have been in absence of the period 0 shock. The country runs a trade surplus and uses the income from this surplus to retire a portion of the debt it incurred in period 0. In all subsequent periods, the country runs a modest trade surplus (10 units in our example) so that, by the end of period 9, the country has completed retired the extra debt it incurred in period 0.

If r* were nonzero, then the answers would be quantitatively a bit different, but qualitatively the same: a temporary income loss would cause a small drop in consumption and a large trade deficit (borrowing to finance consumption during the period of income loss). In future periods, the country would run trade surpluses to gradually retire this extra debt.

b. The shock is country-specific and permanent (e.g., GDP falls by 100 in all periods)

In this case, the country reduces expenditure by 100 in all periods, and its trade balance is unaffected in every period.

c. The shock is temporary but affects all countries. (In this case, a variable we have until now treated as exogenous will change. What variable is that? How does it change? Briefly explain.)

In period 0, all countries would like to run a trade deficit and borrow. This raises demand for funds in international financial markets, creating a shortage of funds. The world interest rate r* rises to reduce demand for funds and restore equilibrium.

Lesson of parts a, b, and c: participation in global financial markets allows a country to enjoy the gains from consumption smoothing only when shocks are temporary and country-specific.

2. In microeconomics, we learn that well-functioning markets allow for the most efficient possible allocation of resources. In finance, we learn that well-functioning financial markets allow people to reallocate their consumption over time in a way that raises their well-being (relative to if they could not use financial markets for this purpose). As we have discussed, people generally prefer smooth consumption to volatile consumption, so they would save when income is temporarily high and dissave (or borrow) when income is temporarily low. At the global level, international financial markets allow countries to smooth their spending over time, though external saving and dissaving in the face of country-specific income shocks. Unfortunately, not all countries have perfect capital mobility (perfect capital mobility means no capital controls, so that everyone can freely borrow or lend in international financial markets), and not all shocks are country-specific.

a. Suppose we could divide countries into two groups:
   - Group A includes countries that have a high degree of financial openness, meaning perfect capital mobility and no capital controls.
   - Group B includes countries that have a low degree of financial openness, meaning countries with capital controls and limits on cross-border borrowing/lending/investing.

   Which do you think would be higher, the volatility of consumption in the average Group A country, or the volatility of consumption in the average Group B country? Briefly explain.

   Consumption should be less volatile in Group A countries, because their financial openness allows them to smooth consumption. Group B countries are less financially open, so they have limited opportunities to smooth consumption.

b. In part a, you made a prediction about the relationship between financial openness and consumption volatility. One section of Chapter 6/17 presents evidence on this relationship. Tell me on what page can I find this evidence, and try to summarize it in a sentence or two of your own words.

   Page 239 of the split, or page 671 of the combined edition, titled "Application: Consumption Volatility and Financial Openness." See Figure 6-5 in the split or 17-5 in the combined edition. Summary: consumption is less volatile than income only in the most financially open countries (those in the top two deciles of financial openness). In less financially open countries, consumption is more volatile than income. These data indicate that it takes a high degree of financial openness for a country to enjoy the gains from consumption smoothing.