

**Problem Set 8**  
**Financial Liberalization in Transition Economies**

(due in class on Monday, November 13)

In socialist economies, capital was allocated to each enterprise according to the central plan. Transition economies strive to establish new and efficient markets for capital. One of the decisions they face is whether or not to integrate their capital markets with the rest of the world. In this problem set you will analyze this question using the framework we developed in class.

1. In class we showed that the risk premium in an economy which is integrated with global financial markets is equal to the covariance of local and world returns times the price of risk ( $R_X - R_f = cov(R_W, R_X) * T$ ). Show that the risk premium can also be expressed as follows:

$$R_X - R_f = \beta(R_W - R_f)$$

where  $\beta = \frac{cov(R_W, R_X)}{var(R_W)}$ .

2. In class we showed that globalization reduces the cost of capital under the following condition:  $var(R_X) > cov(R_W, R_X)$ . Show that this condition is equivalent to the following expression:

$$\frac{\sigma_X}{\sigma_W} > \rho$$

where  $\sigma_X$  is the standard deviation of returns on assets in country  $X$ ,  $\sigma_W$  is the standard deviation of returns on the world market portfolio, and  $\rho$  is the correlation coefficient of returns on assets in country  $X$  and the world market.

3. Download the *ps8.xls* file from the course web site. This file contains monthly stock market price indices for 13 transition countries, the composite stock price index for all transition countries, and the world market stock price index. Find out if *your* country would benefit from integration into the global financial system. Note that stock returns are calculated as  $R_{X_t} = \frac{P_{X_t} - P_{X_{t-1}}}{P_{X_{t-1}}}$ , where  $P_{X_t}$  is the stock price index.
4. Suppose that transition countries integrated their financial markets with each other but not with the rest of the world. Denote returns on a portfolio of transition countries as  $R_T$ . Under which condition would integration among transition countries reduce the cost of capital?
5. Is the condition in question 4 satisfied for *your* country?