RISKLESS RATES AND RISK PREMIUMS

Problem 1
I would use the U.S. treasury bond rate. There is country risk but it is best shown as part of the risk premium.

Problem 2
Because it exposes you to reinvestment risk – the rate will be different in 6 months. A more appropriate rate would be a 5-year treasury (preferable a zero coupon).

Problem 3
Rupiah riskless rate = Government bond rate – Default spread = 17% - 5% = 12%

Problem 4
$$70 = 45 \, (1+ r_{India})^{10}/(1.05)^{10}$$

Solving for r, you get = 9.74%

Problem 5
You could use the 3% rate on inflation-index treasury bonds as your riskless rate, if you assume that capital flows freely across countries. If this is the case, the real riskless rate has to be the same across countries. However, the assumption about free capital flows may not be appropriate in some countries. An alternative approach would be to set the real riskless rate = expected real growth rate in the long term in Chile.

Problem 6
Annual standard deviation (assuming no serial correlation) = $30\%/\sqrt{50} = 4.25\%$

Problem 7
You are assuming that
  a. The risk preferences of investors have not changed systematically over time.
  b. The average risk investment over time has remained constant
  c. There is no selection bias associated with the period of history that you are looking at.

If investors have become less risk averse, the average risk investment has less risk or if there is a "survivor market" bias, the historical risk premium will be too high an estimate of the future expected risk premium.

Problem 8

    a. Country risk premium as default spread = 7.6% - 5.1% = 2.5%

    b. Country risk premium with relative market volatility = 2.5% (25%/15%) = 4.17%

Problem 9

    a. Total risk premium using equity std deviation = 5.5% (48/20) = 13.2%

        Country risk premium = 13.2% - 5.5% = 7.7%

    b. Country risk premium = 3% (48/24) = 6%

Problem 10

Expected dividends next year = 5% of 1400 = 70

Value = 1400 = 70/ (r - .06)

Solving for r,

Required return on stocks = (70 + .06*1400)/1400 = 11%

Riskless rate = 5.5%

Implied equity risk premium = 11% - 5.5% = 5.5%

Problem 11

	Last year	1	2	3	4	5	Term Year
Dividends	750.00	862.50	991.88	1140.66	1311.75	1508.52	1583.94

Estimating the present value of the cash flows in the first five years, and the terminal value as

Terminal value = 1583.94/(r - .06)

The discount rate of 12.85% yields a present value of 15000 (which is the current level of the index)

Implied equity risk premium = 12.85% - 6% = 6.85%

Problem 12

This statement is not true. If earnings go up more than the index goes up, if there is a substantial increase in expected growth rates or a big drop in the riskless rate, you can see risk premiums go down as the index goes up.