1 Two sector model.

I. For each of the following:

(a) draw the Harrod-Johnson diagram

and

(b) calculate the incomplete specialization output price ratios, $\bar{p}$ and $p$ and indicate what happens to these as $k$ (the overall capital intensity) is varied.

(1)

\[ Y_1 = 3K_1^{3/4}L_1^{1/4} \]
\[ Y_2 = 10K_2^{1/2}L_2^{1/2} \]
\[ K = 100, \ L = 15 \]

(2)

\[ Y_1 = 7K_1^7L_1^3 \]
\[ Y_2 = 10K_2^7L_2^3 \]
\[ K = 30, \ L = 3 \]

(3)

\[ Y_1 = K_1^{1/2}L_1^{1/2} \]
\[ Y_2 = K_2^{3/4}L_2^{1/4} \]
\[ K = 12, \ L = 13 \]

(4)

\[ Y_1 = K_1^{3/4}L_1^{1/4} \]
\[ Y_2 = K_2^{3/4}L_2^{1/4} \]
\[ K = 1, \ L = 1 \]

II. Describe the role of capital intensities in the 2-sector model. When is $p < \bar{p}$? When is $p = \bar{p}$?

III. If two countries have the same output price ratio, do they have the same factor price ratio?