



Sustainable Development



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Chapter 4

The DHSS model

Study questions

1. Set up a standard DHSS model where R is 'land', and solve for the b.g.p. What happens to the price of land over time?
2. Compare to the case where R is the flow of an abundant resource with extraction function $R = \phi X$.
3. What difference does it make if we have $R = A_R L_R$, where L_R is extraction labour?
4. What is a reasonable value for β ? Implications?
5. Explain the Hotelling rule. What does it imply about the rate of resource consumption in a DHSS economy with a limited resource, free to extract. How does this fit with historical data?
6. Consider the complex model of limited, costly resources.
 - (a) Compare the primitive economy to the economy with abundant resources, costly to extract. Explain.
 - (b) Compare the balanced growth path to the economy with land. Explain.
 - (c) Compare the Hotelling economy to the economy with a limited resource, free to extract. Explain.
7. What are Solow's three mechanisms? Can they be investigated using a DHSS framework with a Cobb–Douglas production function?