



Core lecture 2

The DHSS model

Study questions

1. Is a trend 'unsustainable' if it can't continue forever?
2. What is the resource price given an 'open access' resource that is costless to extract?
3. 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?
4. Compare to the case where R is the flow of an abundant resource with extraction function $R = \phi X$.
5. What difference does it make if we have $R = A_R L_R$, where L_R is extraction labour?
6. What is a reasonable value for β ? Implications?
7. 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?
8. 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.
9. What are Solow's three mechanisms? Can they be investigated using a DHSS framework with a Cobb–Douglas production function?