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Regulation and Economic Growth:
Applying Economic Theory to Public Policy
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Discussion Questions

The following questions are designed for use in a classroom setting, to stimulate discussion or as a basis for homework assignments or exam exercises. The questions should also prove helpful for identifying original research topics related to the consequences of regulation for economic growth and living standards.

CHAPTER 1. INTRODUCTION

1. What is economic growth and why should anyone be concerned about it? Should other factors, such as factors that are not included in a measure like GDP, hold more weight with economists and policymakers?
2. What are regulations? How are legal and nonlegal regulations different from one another? How are they similar?

CHAPTER 2. THE FUNDAMENTALS OF ECONOMIC GROWTH

1. Aside from investing, name an example from everyday life where the power of compounding is present. What are the practical implications of an increase or a decrease in the growth rate or interest rate in your example?
2. How do the levels of income per person in table 2.2 correspond with what you think about living standards in different countries? Do they seem about right? In what ways do these numbers seem inaccurate? Are you surprised by which countries' economies grew relatively quickly or slowly during the period analyzed? Why or why not?
3. What are the two different types of economic growth? Why might one type of economic growth increase while the other decreases?
4. If a country's GDP is growing at 3 percent per year, how long will it take for national income to double? What about when the growth rate is 4 percent? Now consider that accompanying this 4 percent growth in GDP is population growth of 2 percent per year. How fast will GDP per capita double under these conditions? What if the population growth rate is 3 percent?
5. Which aspects of the Solow model are the most realistic in their portrayal of aspects of the real world? Which aspects of the model are the most unrealistic? Do the unrealistic aspects of the model limit the practical use of the model? Why or why not?
6. What is an economy's balanced growth path? How does it relate to an economy's steady state? What role does capital play with respect to these two concepts?

CHAPTER 3. CLASSIFICATION OF GROWTH EFFECTS

1. Explain (in words) the difference between a growth rate effect, a level effect, and a transitory growth effect.
2. University of California at Berkeley economist Bradford DeLong has created a useful Excel version of the Solow model. Download the Excel file (DeLong 2006, http://delong.typepad.com/print/20060829Solowgrowth.xls) and use it to produce graphs showing a negative growth rate effect, a positive level effect, and a negative transitory growth effect. Hint: This last graph may require some manipulations to the spreadsheet.
3. Looking at the DeLong Solow model spreadsheet, what role does the efficiency of labor play in the model? How does this relate to the concepts discussed in chapter 3 of this book? How does the efficiency of labor relate to the wages of workers?
4. What are the two different types of level effect? How are they similar and how do they differ?
5. What are the intragenerational and intergenerational distributional implications of the different types of growth effects? How might these differences in who receives the benefits of policy and who bears the costs affect which policies get adopted?
6. Name some potential future general purpose technologies that are not listed in table 3.1. What makes them likely to be GPTs?
7. How are the different types of growth effects related to one another? Why might these effects be difficult to distinguish in the real world?
8. What might be some reasons for the relatively persistent growth rate of income per person in the United States over the last century and a half?
9. The precautionary principle has been advanced as a way to protect the public from risky new technologies. What are the tradeoffs involved, from both an intragenerational and an intergenerational perspective, with letting the precautionary principle guide policy decisions?

CHAPTER 4. HOW REGULATIONS ENTER THE ECONOMIC SYSTEM

1. Why is the cumulative effect of all regulations together likely to have a bigger impact on GDP than the sum of the effects of all the same regulations viewed in isolation?
2. Provide an example of two real-world policies that interacted with one another, either beneficially or problematically, in a way that policymakers failed to anticipate.
3. Some highly specific products or technologies end up being vital inputs in complex production chains. Can you name a regulation that targeted a very specific production input of seemingly minor importance but that ended up having very broad consequences?
4. In an 1813 letter to Isaac McPherson, Thomas Jefferson wrote, “If nature has made any one thing less susceptible than all others of exclusive property, it is the actions of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself; but the moment it is divulged, it forces itself into the possession of every one, and

the receiver cannot dispossess himself of it." Describe the relationship between ideas and property rights and the balancing act that is required when policymakers design patent protections.

CHAPTER 5. MODELS OF ECONOMIC GROWTH

1. What are the main differences between the models found in this chapter and the Solow model from chapter 2?
2. What are the different forms of innovation discussed in this chapter and how do they relate to human knowledge?
3. The Solow model suggests that the degree to which a country saves "only" produces a level effect, but other models suggest otherwise (e.g., the AK model). Which is right? What do the data say?
4. Consider the case where the government imposes a tax on all investments, such that a wedge is driven between the rate at which individuals lend to businesses and the rate of return that businesses must earn in order to justify borrowing at the market interest rate. How would this policy influence individual saving and consumption decisions? What effect would this policy have on economic growth in the different models?
5. Some knowledge is clearly excludable, while other knowledge is not. What are some examples of excludable and nonexcludable knowledge? How does "tacit knowledge," which cannot be easily written down or transmitted from one person to another, relate to excludability? Which models reviewed in this chapter best capture the concept of tacit knowledge?
6. What are the different types of catch-up growth? How does the phenomenon of diminishing returns lead to convergence in growth rates across countries, and even across firms?
7. How do externalities show up in growth models? What are some examples of growth models that incorporate externalities? Can you name any other externalities (positive or negative) occurring in the production process that could have spillover effects on growth?
8. Which models suggest that unintended consequences of human interaction contribute to economic growth? How does this phenomenon play out in the models? Which models describe growth as a more purposeful activity on the part of people?
9. What are some roles that the government can play to improve market allocations of resources? What information does a government need in order to respond effectively to the specific inefficiencies you identified?
10. What is the elasticity of substitution between capital and labor and how does it relate to inequality?

CHAPTER 6. THE ROLES OF INSTITUTIONS AND POPULATION

1. This book has discussed a range of possible outcomes that population growth can have on living standards. What do the different models of growth predict could occur owing to changes in population growth? Broadly speaking, is having more people on the planet good of bad for growth?
2. How might lessons from the growth models inform immigration policy? Does the type of immigration into a country matter for living standards? What about restrictions on the free movement of people within countries?
3. What variables do you think should be endogenized that have not been yet? How might economists go about explaining these variables in their models in the future?
4. What are institutions? What do you think of this term? Why might a catch-all term like "institutions" not be helpful when it comes to disentangling the different determinants of economic growth? How do institutions differ from policies enacted by governments?
5. Find a map and pick 15 countries that have area within 20 degrees of latitude (north or south) of the equator. Put together a table that lists the GDP per capita of each of these countries. Next create a table for 15 countries that are farther from the equator than 20 degrees of latitude. Create another table for countries that are landlocked (regardless of latitude). What lessons can you draw from this exercise?

CHAPTER 7. CONCLUSION

1. After reading this book, what do you think are the most important contributors to economic growth? What questions remain to be answered by growth economists in the future?
2. Which types of regulations are likely to most affect growth? Can you provide an example of a specific rule that may have produced a (positive or negative) growth *rate* effect? What is your evidence? Can you provide an example of a rule that may have produced a level effect or a transitory growth effect?
3. Go to www.regdata.org and download data on federal regulatory restrictions. Use the data to produce a list of the ten most-regulated industries for the most recent year data are available. Is there anything surprising about this list?
4. Is GDP a good measure of living standards? What are some of its limitations? What are its advantages? Is there another measure of living standards that is superior? If so, why?