

Problem Set #2: Long-Term Economic Performance

Revised: October 16, 2013

You may do this assignment in a group. Whatever you hand in should be the work of your group and include the names of all of the contributors.

1. Sources of Korean success (35 points). The Republic of Korea (“South Korea”) has been one of the great economic success stories of world history. Since the end of the Korean War in 1953, GDP per capita has risen by a factor of almost 20. Over the same period, US income rose by a factor of 3. As a result, the gap between the two countries has shrunk dramatically. In 1953, average income in Korea was about 10% of US income, but by 2010 (the most recent comparable number) it was about 65%.

Was Korea a classic productivity story, or did capital formation and hours worked play more important roles than in other countries? We know, for example, that the saving rate and hours worked are both unusually high. Let’s check the numbers and see where the differences in GDP per person come from.

Use the Penn World Table spreadsheet, posted at

http://www.weebly.com/uploads/3/2/4/5/3245755/pwt80_globaleconomy.xlsx,

to fill in this table for 2011:

	South Korea	United States
GDP per person (Y/POP)		
GDP per worker (Y/L)		
Capital-output ratio (K/Y)		
Capital per worker (K/L)		
Employment rate (L/POP)		

Note that you may have to compute some of the entries yourself from the numbers in the spreadsheet.

- (a) What is the ratio of GDP per person in the two countries (Korea over US)? (5 points)
- (b) Use the production function to derive total factor productivity (TFP) in each country from the numbers in the table. What is the ratio of the two countries? How does it compare to the ratio you computed in (a)? (10 points)
- (c) Overall, what factors contribute to the difference in GDP per person? How important is capital? (10 points)
- (d) You have heard that Koreans work exceptionally long hours. The OECD Employment Outlook reports that the average employee in Korea worked 2090 hours in 2011, while the average American employee worked only 1787 hours. How would this information change your calculation of TFP? How does it change your assessment of the relative productivity of Korea and the US? (10 points)

2. Brazil by the numbers (35 points). Let's re-examine Brazil's recent economic performance to draw our own conclusions about its trends and drivers.

Fill in the following table using the same source as the previous question:

	1980	2005	2011
GDP per capita (Y/POP)			
GDP per worker (Y/L)			
Capital-output ratio (K/Y)			
Capital per worker (K/L)			
Employment rate (L/POP)			

- (a) Compute the (average annual continuously compounded) growth rates of GDP per capita and GDP per worker over the periods 1980-2005 and 2005-2011. (10 points)
- (b) Use our growth accounting methodology to allocate growth in GDP per worker to growth in productivity and capital per worker. Which factor changed most between the two periods? (15 points)
- (c) Use the World Bank's [Doing Business](#) rankings to assess Brazil's business environment. What are its strengths? Weaknesses? In brief, what role do you think these factors played in the country's recent economic performance? (10 points)
3. Labor market conditions (30 points). Your first day on the job at General Electric, you are given 4 hours to collect information for a 5-minute presentation to your group summarizing the labor market conditions a manufacturer would face in Mexico, Poland, and Singapore. Once you get over your initial panic, you contact your Global Economy professor, who suggests that you look at the following websites:

- The Bureau of Labor Statistics' [International Labor Comparisons](#) page, especially the section titled Hourly Compensation Costs, which includes wage costs in a number of countries, collected on a comparable basis.
- The World Bank's [Global Development Indicators](#) and the [Barro-Lee dataset](#), which include information about the education and literacy of the population.
- The World Bank's [Doing Business](#) website, which includes institutional information about the labor market, labeled [Employing Workers](#).
- The Economist Intelligence Unit's Country Commerce Reports, particularly the section on human resources, which describes the legal and business environment governing employment. Access the reports by: going to NYU's [Virtual Business Library](#), click on Country Information, then EIU Country Commerce, login as directed, click on Country Commerce, and choose the country of interest.

Use this information to put together a short report summarizing labor market conditions in these three countries.