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11.481J / 1.284J / ESD.192J Analyzing and Accounting for Regional Economic Growth
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11. 481J, 1.284J, ESD.284J
Problem Set 4

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You have satisfactorily completed your initial work for the Ministry of Construction in China. Now, the Development Research Center (DRC) of the State Council has hired you as a foreign consultant to design one component of an economic investment program for China that will help them allocate investment funds to the North and/or South of China. They furnish you with the following information.

- (1) The 2002 North and South China regional input-output tables (from Problem Set 3) that the Ministry of Construction has provided them. Please use the attached tables rather than the ones you generated.
- (2) The DRC research staff want to apply to the Asian Development Bank for a loan of 12 billion Renminbi (slightly more than \$2 billion) to provide to the provinces for this project.
- (3) The State Statistical Bureau of China has done a nonsurvey estimate for the wages personal consumers pay to their household workers. These payments are 1,200 million Renminbi in the North and 3,200 million Renminbi in the South.

By 5:00pm on Tuesday, May 5, you are to provide them a four-page (plus technical appendices) double-spaced, typed report explaining the information requested below. Note this report should be written as if you were actually submitting a report to the Development Research Center, with an introduction and conclusion and references; in other words, the information we request below will then be part of the text of the report. Do not just provide the information directly, but present and discuss it systematically.

1. What other type of techniques did you consider other than the one you used to determine in which industry or industries and in which region they should invest and why? Which technique did you select and why? (5 points)
2. In which sector(s) and region(s) should they invest? What is the total output (by sector and region) that would be generated by this investment? (15 points)
3. How did you make your calculations? Include details in your answer on the following concepts that you used in making the calculations:
 - (a) The main characteristics of a technical input-coefficient table. (10 points)
 - (b) The major differences between the open and partially closed input-output models. (10 points)
 - (c) Under what circumstance(s) it would be preferable to use the partially closed, rather than the open, model. (10 points)
 - (d) Explain why you selected the one you did for your calculations. (10 points)
 - (e) The major assumptions in your decision. (10 points)
 - (f) What your technical input-coefficient calculations show about the technologies

in the North and the South. Is there any problem? If yes, what might you do to resolve the problem? (10 points)

- (g) The DRC has heard that they should invest in those sectors that have the largest backward linkages. If they followed this advise, which sector(s) would they select and why? Do you think this is a useful investment strategy? Why or why not? (20 points)

Attach a technical appendix to your report with the following tables for both regions: (1) technical input coefficients, (2) direct and indirect input-coefficients, and (3) direct, indirect, and induced input-coefficients. Be certain to present your tables in a good format with appropriate titles, sources, definition of any abbreviations, units of measure, etc.

NOTES:

1. We attach directions for taking the inverse of the $(I - A)$ matrix.
2. We encourage you to work together on the problem set to make the calculations, but each student must submit his/her own essay. Do check the calculations to be certain you did them correctly.