

11. 481J, 1.284J, ESD.284J, Spring 2005
Problem Set 4
Due May 2nd, 2005. 10:00 AM

Karen R. Polenske
Xiaodong Wang

You have satisfactorily completed your initial work for the Ministry of Water or Ministry of Rail in China. The Development Research Center (DRC) of the State Council has now hired you as a foreign consultant to design one component of an economic investment program for China that will take advantage of the increased water that will be available in the North of China. They furnish you with the following information, which is only for the year 1987. They realize the problems in using such old data in the rapidly developing economy of China, but they want to get an idea of how useful an input-output analysis is for them to use, before spending additional funds for a more current table and for a projected input-output table to the year 2010. They have been told that students from 11.481 are bright, creative, and able to provide them with excellent advice.

These are the information they provide: (1) The 1987 North and South China regional input-output tables (from Problem Set 3). Please use the attached tables rather than the ones you generated. (2) The DRC want to apply to the Asian Development Bank for a loan of 8 billion Renminbi (about \$1 billion). (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 April 29, 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 it 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 type of techniques could you use to determine in which industry or industries in which region they should invest and why?
2. In which sectors would you want to invest? What is the total output that would be generated by this investment? (20 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 conceptual 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 in discussing your results to the Ministry (10 points)
 - (e) The major assumptions in your decision. (10 points)
 - (f) What your calculations show about the technologies in the North and the South. If they differ/do not differ, explain what might be reasons (15 points)
 - (g) What is the largest direct backward linkage for each region? What is the largest direct and indirect backward linkage for each region? Give these for the open model OR for the partially closed model, whichever you selected for your answer (15 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.