

**11. 481J, 1.284J, ESD.284J, Spring 2004**  
**Problem Set 4**

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You have satisfactorily completed your initial work for the Ministry of Water 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:

- (1) The 1997 North and South China regional input-output tables (from Problem Set 3). Please use the attached tables rather than the ones you generated. Assume that your work for the Ministry of Water was completed several years prior to 1997, thus prior to the construction of these input-output tables.
- (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 28, 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 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 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? (15 points)
- (g) Other major considerations they may need to take into account when making this investment decision. (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.