11.481J / 1.284J / ESD.192J Analyzing and Accounting for Regional Economic Growth
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PART A: China Interregional Input-Output Data

The Chinese economy has been growing at about 9% or more per year for the past 15 years. One result of this growth has been increased needs for public and private construction around the country. Assume that in the current year, the Ministry of Construction is trying to help meet this demand by investing in various construction projects in both the North and South of China. In this exercise, we arbitrarily divide China into the North and South regions, using the Yangtze River as the dividing line. The North includes all provinces and municipalities located north of the river; whereas the South represents all provinces and municipalities situated south of the river (see Appendix B).

You are hired by the ministry to analyze the socioeconomic impacts of the investments on both regions. You are provided with the 2002 statistical account information of both regions (attached as Appendix A), which is the latest available statistical input-output data. These are actual data for 2002. The Ministry officials would like you to construct the tables to help them determine whether such a set of accounts will be useful for their future work and what additional information they would need. [Note: The underlying numbers are actual data from the latest publication by the statistical office. We made some adjustments to the data for the purposes of this exercise, so that they should not be used for other studies.]

Your first task is to construct a 2002 accounting table for each of the two regions.[1]

A1. From the information given in Appendix A and using the attached Excel worksheet REGION, construct an input-output table for each of the two regions, showing both intermediate and final transactions. You will have to create two regional input-output tables, one for North China and one for South China, based on the data provided. When you enter the data into the worksheet REGION, the worksheet will automatically calculate the gross regional consumption and gross regional outlays for you, but you will need to enter the appropriate title and other information concerning the data. (50 points)

A2. Specify the gross regional product in 2002 for each of the two regions. Please also specify the gross regional income in 2002 for each of the two regions. Explain why they are the same or different.
(20 points)

A.3 The Ministry of Construction staff are puzzled by how they should/should not

[1] Data Source: National Bureau of Statistics of China (NBS), 2008. 2002 Input-Output Table for China, Beijing: China Statistics Press.

handle the large amount of obsolete plant and equipment in the industrial north in the accounts. They ask you to provide them with a brief (3-4 sentences) explanation of where such information would occur in the accounts, if it occurs at all, and the use, if any, that they should or should not make of such information for planning for new construction in the north. (10 points)

A4. Give a brief explanation of the following entries:
(12 points)

a. The entries in the construction column (hint: explain the construction cost structure of that sector in each region);

b. The entries in the construction row.

For your reference, Appendix B provides more detailed information about the two regions to be considered in this analysis.

PART B (8 points)

Explain where the following items would appear in the China regional input-output table. Give the region(s), the row, the column, and a brief explanation of why it would appear in that location, or why they would not be counted, if that is the case.

1. Purchase of housing by private consumers in both regions in China.

2. Purchase of black market videos, cell phones, and CDs by Chinese consumers in both regions in China.

3. Purchase of black market videos, cell phones, and CDs in Beijing by U.S. students.

4. Uniforms provided free by a state-owned iron and steel plant in Liaoning Province to its employees.

APPENDIX A		
2002 DATA FOR NORTH AND SOUTH CHINA (million RMB)		
	NORTH	**SOUTH**
AGRICULTURE		
Sales of goods and services to other sectors		
to agriculture	279,147	186,187
to industry	567,871	393,190
to construction	10,650	12,970
to transportation	12,975	3,927
to commerce and services	59,502	60,250
Sales of final goods		
to household consumption	364,052	380,748
to social consumption	36,804	24,980
to investment	176,758	90,379
to net foreign export	133,886	85,540
INDUSTRY		
Sales of goods and services to other sectors		
to agriculture	352,672	217,331
to industry	4,376,637	5,309,960
to construction	924,255	765,339
to transportation	280,741	209,576
to commerce and services	686,056	588,351
Sales of final goods		
to household consumption	1,231,275	893,259
to social consumption	0	0
to investment	943,473	924,789
to net foreign export	-290,454	263,748
CONSTRUCTION		
Sales of goods and services to other sectors		
to agriculture	964	474
to industry	6,997	3,131
to construction	3,756	2,956
to transportation	7,700	5,692
to commerce and services	61,370	56,629
Sales of final goods		

to household consumption	6,797	19,328
to social consumption	0	0
to investment	1,517,237	1,101,638
to net foreign export	458,121	-380,479
TRANSPORTATION		
Sales of goods and services to other sectors		
to agriculture	31,976	21,577
to industry	365,808	324,694
to construction	71,798	45,517
to transportation	113,468	124,406
to commerce and services	224,957	190,173
Sales of final goods		
to household consumption	155,768	151,004
to social consumption	25,823	0
to investment	26,918	11,951
to net foreign export	-42,364	179,108
COMMERCE AND SERVICES		
Sales of goods and services to other sectors		
to agriculture	72,992	44,713
to industry	750,461	782,825
to construction	133,422	105,069
to transportation	146,299	124,049
to commerce and services	804,391	692,707
Sales of final goods		
to household consumption	815,189	670,091
to social consumption	929,494	769,415
to investment	153,275	139,779
to net foreign export	122,685	-54,086
DEPRECIATION (Consumption of capital)		
Sales of goods and services to other sectors		
to agriculture	49,271	25,746
to industry	443,616	367,654
to construction	39,190	28,404
to transportation	158,628	114,777
to commerce and services	333,401	300,497

LABOR INCOME		
Sales of goods and services to other sectors		
to agriculture	753,072	522,589
to industry	1,013,532	818,977
to construction	264,182	204,250
to transportation	251,864	155,097
to commerce and services	1,141,649	874,821
NET TAXES ON PRODUCTION		
Sales of goods and services to other sectors		
to agriculture	74,327	72,709
to industry	501,754	457,769
to construction	69,593	40,926
to transportation	65,473	50,651
to commerce and services	218,650	252,485
OPERATION SURPLUS		
Sales of goods and services to other sectors		
to agriculture	124,908	49,162
to industry	587,384	604,749
to construction	87,275	62,756
to transportation	62,558	134,699
to commerce and services	265,977	390,904

Source: National Bureau of Statistics of China (NBS), 2008. 2002 Input-Output Table for China, Beijing: China Statistics Press.

Appendix B

SUMMARY OF CHINA'S NORTH AND SOUTH REGIONS IN 2002 (PERCENT)

Region	Provinces and Municipalities	Land	Population	GDP
North	Beijing, Tianjin, Hebei, Shandong, Inner Mongolia, Liaoning, Jilin, Heilongjiang, Shanxi, Henan, Anhui, Hubei, Hunan, Jiangxi, Shaanxi, Gansu, Ningxia, Qinghai, Xinjiang	77.0	60.3	54.5
South	Shanghai, Jiangsu, Zhejiang, Guangdong, Fujian, Hainan, Sichuan, Chongqing, Guizhou, Yunnan, Guangxi	23.0	39.7	45.5

Source: National Bureau of Statistics of China, eds. 2003. *China Statistical yearbook,* Beijing: China Statistics Press, p. 63, 98.

Note: This table shows the North and South approximate regional shares of land area, population, and Gross Domestic Product in China's economy in 2002.

Because there is no input-output table for Tibet in 2002, the above data do not include economic Tibet data.