Practice and Review Answer Key

Chapter 1

1. Pq = 4, Qs = Qd = 4.
2. Pq = 5, Qs = Qd = 6

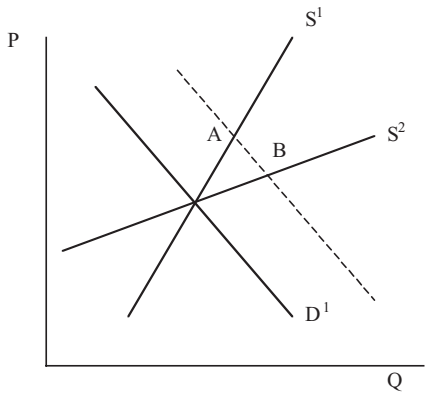
Table 1.2. *Partial Versus General Equilibrium Analysis (answer key)*

	Bicycle Equilibrium Price is Higher/Lower than $1.50	Bicycle Supply/Demand Equilibrium is Greater/Less than 15	Which Curve Shifts and in which Direction?
Increase in price of rubber tires	**$1.50**	**15**	**Supply – upward/left**
Bicycle workers accept lower wages	lower	greater	*Supply shifts downward/right*
Consumer demand shifts to imported bicycles	lower	less than	*Demand shifts upward/left*
Decline in exports causes depreciation and higher imported input costs	higher	less than	*Supply shifts upward/left*
Bicycle seat price falls due to fall in demand from bicycle producers	lower	greater than	*Supply shifts downward/right*

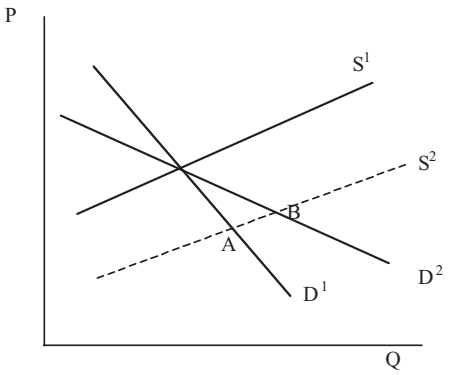
Chapter 2

1. PP_c, $PP_{\text{“manufactures”}}$
2. Quantity of agricultural imports by Brazil from the United States.
3. The graph shows two different market outcomes: A in the case of an inelastic supply curve, and B in the case of an elastic supply curve. The supply curve is

more elastic when (1) factor substitution elasticities are larger and (2) factor mobility elasticities are larger in absolute value.



Chapter 2, Practice and review problem 3.



Chapter 2, Practice and review problem 4.

4. The graph shows two different market outcomes: A in the case of an inelastic demand curve, and B in the case of an elastic supply curve. Demand for the domestic good is more elastic when (1) own-price substitution elasticities are larger and (2) import substitution elasticities are larger.

Table 2.3. *Normalized Prices and Quantities of Apples (answer key)*

	Base Values			50% Change in Quantity			
	Price	Quantity	Value	Price	Quantity	Value	% Change in Value
Actual	4	6	24	4	9	36	50
Normalized	1	1.5	1.5	1	2.25	2.25	50

Table 2.4. *Calculating the U.S. World Import Price of Corn (answer key)*

	France	Germany	South Africa
Exporter's market share of U.S. corn imports	50	25	25
Exporter bilateral (*fob*) export price	$1.25	$0.85	$1.90
Trade margin	$0.25	$0.15	$0.10
U.S. bilateral import price	1.50	1.00	2.00
Trade-weighted import price	.5 * 1.50 = .75	.25 * 1.00 = .25	.25 * 2.00 = .50
U.S. world price	.75 + .25 + .50 = $1.50		

Chapter 3

1. a. $5,227 billion
   b. Manufacturing uses:
   Agric. intermediates plus sales taxes: $160 + $229 = $389
   Mfg. intermediates plus sales taxes: $393 + $1,533 + $3 + $11 = $1,940
   Services intermediates plus sales taxes: $16 + $1,079 + $3 = $1,098
   Total intermediate input costs = $3,427.
   Manufactured intermediates accounts for the largest share of input costs: 57 percent.
   c. $3 + $11 + $3 + $166 + $15 + $42 = $240 in tax payments. The largest tax payment is for labor use.
   d. Labor factor use tax is 15 percent.
2. a. imports = $1,274
   b. domestic variety = $5,229
   c. total supply = $6,503
3. a. The imported MFG variety is sold to production activities as an intermediate input ($12 + $393 + $216), to private households ($415), to government ($1), and to investment ($237). A total of $1,274 is sold.
   b. The domestic MFG variety is sold to production activities as an intermediate input ($66 + $1, 533 + $1, 141). There are also sales to private households ($1,104) to government ($2), to investment ($628), and to exports ($756). A total of $5,230 ($5,229 adjusted for rounding) is sold.
4. a. Labor has the largest factor cost share in U.S. services production:

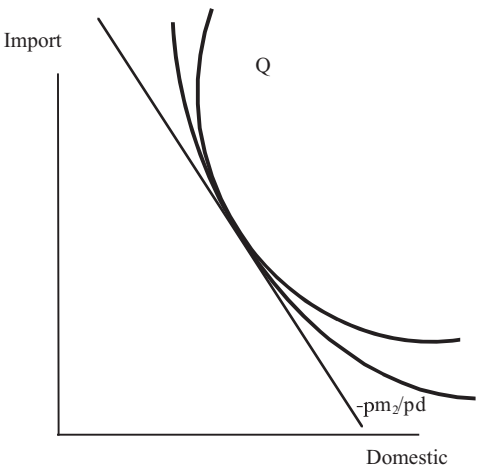
   Factor cost for labor: $5,667 + $850 = $6,517
   Factor cost share for capital: $2,332 + $76 = $2,408
   Total factor cost: $8,925
   Labor cost share: $6,517/$8,925 = 73 percent

Capital cost share: \$2,408/\$8,925 = 27 percent
Labor has the highest cost share.

b. Services pays \$423 billion in output taxes.

Chapter 4

1. a. Agriculture: C = 60, I = 0, G = 1, E = 50
   b. Services: C = 6,392, I = 1,315, G = 1,805, E = 283
2. Agr = (60+2)/8,233 = .008; MFG = (1,104 + 115)/8,233 = .15; SER = (6,392 + 41)/8,233 = .78
3. A homothetic utility function assumes that consumers will change their demand for all goods and services by the same proportion as the change in income. A nonhomothetic utility function can describe goods as luxuries or necessities, for which growth in demand will not change by the same proportion as income. The main differences between the two utility functions in an analysis of economic growth is that the nonhomothetic function will lead to higher demand for luxury goods and lower demand for necessities relative to the change in income, which will cause a shift in production and trade toward luxury products. The homothetic function will lead to a more balanced growth in demand, production, and trade.
4. A large value for the Armington parameter describes in a flatter isoquant, becoming linear as the parameter value approaches infinity. When the parameter value becomes smaller, the isoquant becomes more curved. In the limit, the parameter value approaches zero and the curve is L-shaped. When the tariff is removed, a larger parameter causes a larger change in quantity ratios.



Chapter 4, Practice and review problem 4. Low versus high Armington import substitution elasticities (answer key)

5. The real consumption welfare change in welfare is \$6. The price changes have increased national welfare.

Table 4.8. *Practice and Review Calculation of the Real Consumption Welfare Measure (answer key)*

	Initial Price	Initial Quantity	New Quantity	Cost of Initial Quantity at Initial Prices	Cost of New Quantity at Initial Prices
Apples	$1.00	5	6	$5.00	$6.00
Oranges	$1.00	5	4	$5.00	$4.00
Candy bars	$1.00	2	8	$2.00	$8.00
Total	–	–	–	$12.00	$18.00

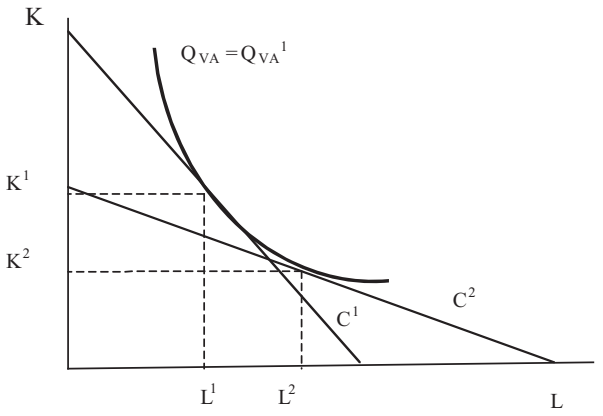
Chapter 5

1. Total intermediates: 5,574
   Total factor payments: 7,999
   Total taxes: $926 + 52 + 423 = 1401$
   Value-added: $14,974 - 5,574 = 9400$
   Gross output: 14,974 (with rounding)

Table 5.7. *Input-Output Coefficients (answer key)*

	Inputs into Production		Input-Output Coefficients	
	Manufacturing	Services	Mfg.	Services
Labor	12	12	.24	.10
Capital	8	18	.16	.18
Manufacturing	10	50	.20	.50
Services	20	20	.40	.20
Gross value of output	50	100	1.00	1.00

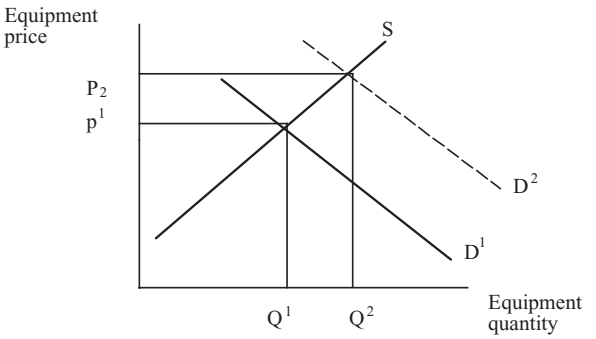
2. a. Mfg. is labor intensive.
   b. Services is capital intensive.
   c. Manufacturing is the most labor-intensive sector in the economy.
   d. Upstream role: manufacturing is an important input supplier of intermediate inputs services, accounting for 50 percent of its input requirements. Downstream role: manufacturing depends on services for a large share of its intermediate inputs – 40 percent of these input requirements.
3. Lower wage costs relative to the price of capital rotates the isocost curve from C1 to C2. The labor/capital ratio rises from L^1/K^1 to L^2/K^2 in the production of value-added bundle QVA^1.
4. This CGE model probably has a Leontief-fixed proportion production function because there is no substitution among intermediates, and demands for intermediate inputs change by the same proportion as output. The model has a value-added production function that allows substitution among factors because the factor input ratio changes. Because production becomes more labor intensive, wages must have fallen relative to rents.



Chapter 5, Practice and review problem 3. A fall in wages in the industry (answer key)

Chapter 6

1. Figure 2.1 describes the relatively elastic supply curve of an industry with a mobile factor and the relatively inelastic supply curve of an industry with an immobile, sector-specific factor. A demand shock leads to a larger quantity effect and smaller price effect for an industry when factors are mobile compared to when factors are immobile.
2. Assuming that the equipment is a capital input that is complementary to engineering labor in the production of computer chips, an increase in the supply of engineers should increase demand for the equipment (see Problem 6.2 Figure). The increase in number of engineers shifts the demand curve for the capital good outward and results in a higher price and quantity for the equipment. You should advise the industry to support the training program.



Chapter 6. Practice and review problem 2 (answer key)

3. Services is a large and labor-intensive sector in the U.S. economy. Its expansion is likely to increase the price of labor and cause all three sectors to become more capital intensive.

Chapter 7

1. a. Televisions are capital intensive, and wine is labor intensive.
   b. Capital costs will fall due to increased productivity, and this will lower the costs of production of televisions more than of wine.
   c. Wine is relatively exportable, and televisions are relatively importable.
   d. An increase in production of the importable will reduce the country's demand for imports, so the world import price is likely to fall. A decrease in production of the exportable will decrease its supply of exports, so its world export price is likely to rise. This country's terms of trade will likely improve because its world export price will increase relative to its world import price.
2. The Dutch Disease model describes (1) resource endowment effects and (2) spending effects. The resource endowment effect describes resource competition by the expanding oil sector, which causes output in other industries to fall. The spending effect describes the increased demand for goods and services as incomes grow. Both effects lead to real exchange rate appreciation and increased import competition for Venezuela's industrial sector, and the potential for deindustrialization.
3. % change in U.S. world export price $= (.6 * 6) + (.4 * 4) = 5.2$
   % change in U.S. world (fob) import price $= (.8 * 4) + (.2 * 1) = 3.4$
   % change in U.S. terms of trade $= (5.2 - 3.4) = 1.8$. The U.S. terms of trade improves.

Chapter 8

1. In the graph, the import with a more price-elastic demand is described by a flatter demand curve and a larger excess burden than the import with price-inelastic demand. The welfare cost of the tariff will be smaller for the less elastic import.
2. For both sectors, the factor use tax is 15 percent for labor and 3.25 for capital. Because the factor use taxes are the same in both industries, they do not distort factor allocation between them. The taxes make labor relatively cheaper than capital and create an incentive for both industries to become more capital intensive.
3. See Text Figure 8.4.
4. a. $-\$200{,}000/\$1{,}000000 * 100 = 20$
   b. The government must earn a return of 120 percent on its project, or the cost in terms of tax dollars spent and inefficiencies linked to the taxes will be greater than the project's benefits.
   c. The marginal excess burden will be smaller if the tax is levied on price-inelastic goods, because this will minimize distortions of the student's consumption basket.
   d. The subsidized textbook industry is likely producing quantities that are greater than is economically efficient, given the nation's resources and preferences. A sales tax in the bookstore will likely reduce demand for and output of textbooks, and reduce the inefficiency linked to the textbook subsidy.