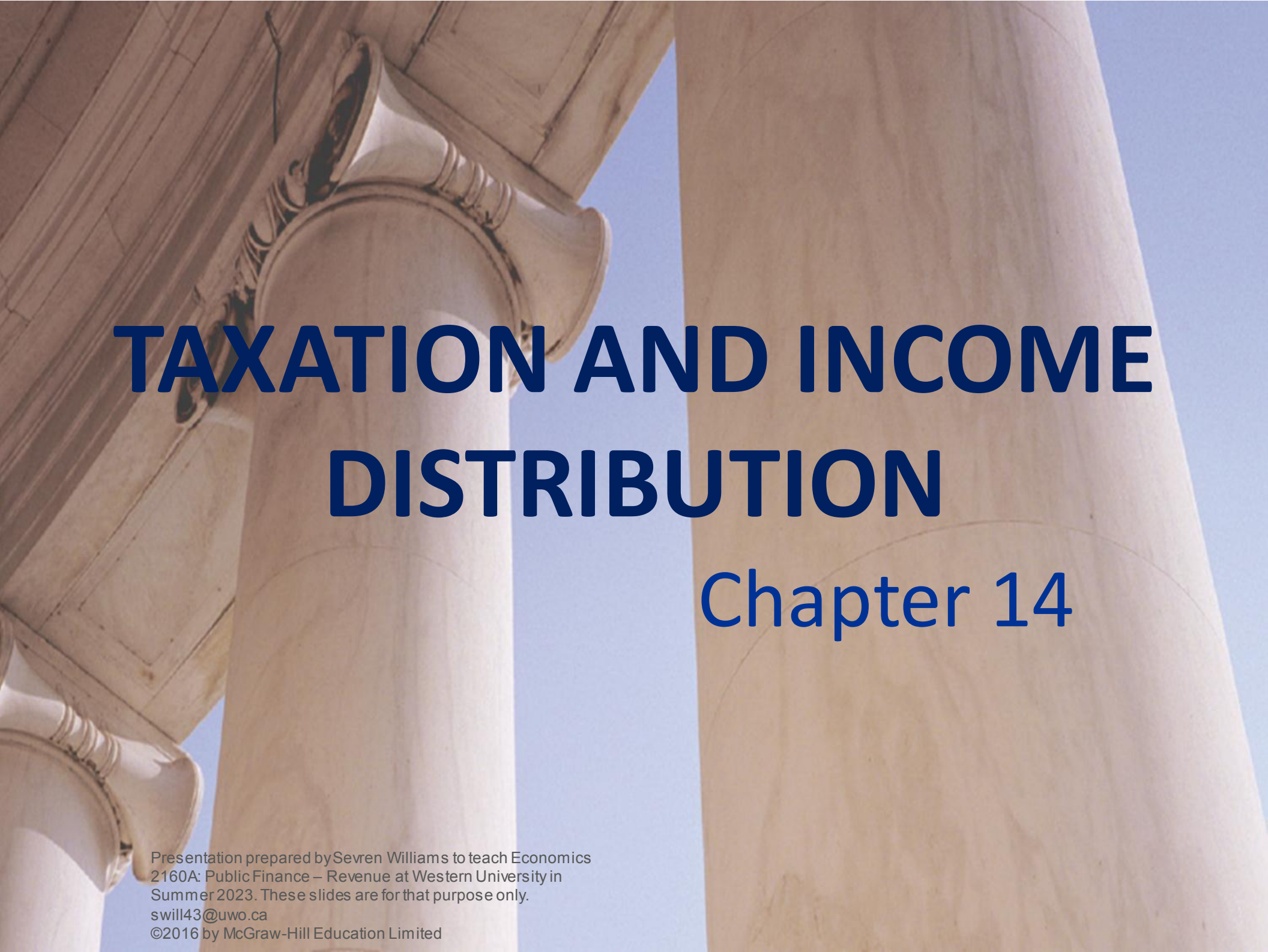

TAXATION AND INCOME DISTRIBUTION

Chapter 14

Presentation prepared by Sevren Williams to teach Economics 2160A: Public Finance – Revenue at Western University in Summer 2023. These slides are for that purpose only.
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Questions For Discussion (1 of 4)

For commodity X, average cost is equal to marginal cost at every level of output. Assuming that the market for X is competitive, analyze the effects when a unit tax of u dollars is imposed. Now analyze the effects of the same tax assuming that the market for X is a monopoly. Discuss the differences.

for a competitive market, the supply move upward by a dollar

the final equilibrium price rise, but less than a dollar

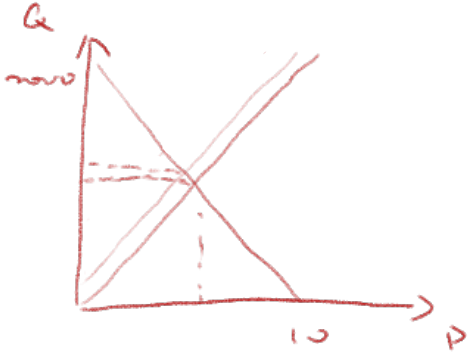
for a monopoly, the supplier would get a new price that MCtT = MR.

Questions For Discussion (2 of 4)

Suppose that the demand for cigarettes in a hypothetical country is given by $Q_C^D = 2{,}000 - 200P_C$, where Q^P is the number of packs demanded and P_c is the price per pack. The supply of cigarettes is $Q_C^D = P_C \times 200$.

a. Find the price and quantity of cigarettes, assuming the market is competitive.

b. In an effort to reduce smoking, the government levies a tax of $2 per pack. Compute the quantity of cigarettes after the tax, the price paid by consumers, and the price received by producers. How much revenue does the tax raise for the government? How much revenue comes from consumers, and how much from producers?



a.) $2000 - 200P = 200P$

$P = 5$

$Q = 1000$.

tax for consumer.

$P_c = P_s + 2$.

consumer curve

supplier curve

b.) $2000 - 200P = 200(P-2)$

$P = 6$ consumer

$6 - 2 = 4$ producer

$Q = 2000 - 6 \times 200 = 800$

c) tax revenue $= 800 \times 2$

$= 1600$

from consumer $= 800$

producer $= 800$.

Questions For Discussion (3 of 4)

a) Suppose that the demand curve for a particular commodity is $Q^D = a - bP$, where Q^D is the quantity demanded, P is the price, and a and b are constants. The supply curve for the commodity is $Q^S = c + dP$, where Q^S is the quantity supplied and c and d are constants. Find the equilibrium price and output as functions of the constants a, b, c, and d.

b) Suppose that a unit tax of u dollars is imposed on the commodity. Show that the new equilibrium quantity, producer price, and consumer price are the same regardless of whether the tax is imposed on producers or buyers of the good.

c) Now express the incidence on producers and on buyers as proportions of the tax revenue and comment on how the incidence depends on the slopes of the demand curve ($-b$) and the supply curve (d).

a) $a - bP = c + dP$

$$P = \frac{a-c}{b+d}$$

$$Q_e = a - \frac{b(a-c)}{b+d}$$

$$= c + \frac{d(a-c)}{b+d}$$

$$= \frac{ad+bc}{b+d}$$

b) on producer:

$$a - b(P-u) = c + dP$$

$$a - bP + bu = c + dP$$

$$P = \frac{a-c+bu}{b+d}$$

on consumer:

$$a - bP = c + d(P+u)$$

$$a - bP = c + dP + ud$$

$$P = \frac{a-c-ud}{b+d}$$

however, due to the fact that in an equilibrium the price for producer and consumer are the same, it only effect on how the tax is levied.

c) the more inelastic side of the market would bear a greater share of the tax.

Questions For Discussion (4 of 4)

Suppose that the income tax in a certain nation is computed as a flat rate of 5 percent, but no tax is levied above $50,000 in taxable income. Taxable income, in turn, is computed as the individual's income minus $10,000; that is, everyone gets a $10,000 deduction. What are the marginal and average tax rates for each of the following workers? (Evaluate the marginal tax rate at each person's current income level.)

a. A part-time worker with annual income of $9,000. 0%

b. A retail salesperson with annual income of $45,000. 5%

c. An advertising executive with annual income of $600,000. 0%

d. Is the tax progressive, proportional, or regressive with respect to income?

the tax is first progressive, than regressive

it is depends on the avg tax rate for different income

a) case avg tax rate is 0%, b) is 3.89% ↑ => progressive

c) is 0.42% ↓ => regressive

Question 4 – Key Points

a) Average tax rate: 0% Marginal tax rate: 0%

b) Average tax rate: 3.89% Marginal tax rate: 5%

c) Average tax rate: 0.42% Marginal tax rate: 0%

d) The tax is first progressive, then regressive (look at the average tax rate as income increases)