

## Chapter 12 – 14 Abridged Review: Taxation Theory

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**Readings:** Chapter 12: pp 253 – 264 (end before “*Taxes on Factors*”)

Chapter 13: p 282

pp 290 (start with “*Excess Burden ...*”) - 301

then back to “*If Lump sum taxes are so efficient ... ?*” on pp 286 – 287

Chapter 14: pp 308 - 312

pp 321 (start with “*Other Criteria ...*”) – 325 (end before “*Tax Evasion*”)

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### I. Overview: What Does a Good Tax System Do?

#### A. Collect “sufficient” revenue; i.e. tax something

Remember: for \$1 of Public Goods and goods generating external benefits at the privately provided level

$$\text{Marginal Social Benefit} > \$1$$

i.e. Govt. should provide some level of these.

#### B. Change behavior we’d like to change

i.e. Tax activities generating negative externalities.

#### C. Don’t change behavior we like

Don’t tax activities generating positive externalities.

Don’t tax things we like (ex. work effort).

#### D. Don’t change behavior we like

Tax things which are inelastic in demand and supply.

1. elastic demand & supply: Tax  $\Rightarrow$  buyers and sellers quit doing it a lot

2. inelastic demand & supply: Tax  $\Rightarrow$  buyers and sellers do about the same amount

#### E. Address Equity concerns

#### F. Keep it simple

## II. Yikes! Everything is a tradeoff

- A.** ex. 1:  $\uparrow$  marginal income tax rates at high levels of income  
 Pros: collecting sufficient revenue  
       helps equalize (after tax) income distribution  
 Cons: disincentive to increase work effort
- B.** ex. 2: Tax credit for student loan interest, phased out at high income levels  
 Pros: encourages behavior we like  
       helps equalize (after tax) income distribution  
 Cons: greater complexity in the tax code
- C.** ex. 3: Replace current income tax system with a combo. of a national sales tax and Steve Forbes “flat” income tax  
 Pros: simplicity  
       better incentives for high work effort  
 Cons: (after tax) income distribution is less equal  
       Why? Current system helps equalize (after tax) income distribution  
       Poor spend a higher % of their income

## III. More on Equity

- A.** Horizontal Equity  
 People in “equal” positions should be taxed equally
- B.** Vertical Equity  
 Greater ability to pay  $\Rightarrow$  Greater tax  
 (a much more limited concept than progressivity)  
 Big problem ... How to define equal????
- C.** Progressivity: Measuring Equity
- $\uparrow$  tax  $\Rightarrow \uparrow$  Taxes/ $Y$  : This is a \_\_\_\_\_ system
- $\uparrow$  tax  $\Rightarrow$  no  $\Delta$  Taxes/ $Y$  : This is a \_\_\_\_\_ system
- $\uparrow$  tax  $\Rightarrow \downarrow$  Taxes/ $Y$  : This is a \_\_\_\_\_ system

#### IV. 2 Things Often Neglected (but not by economists)

##### A. Changes in behavior/excess burden

Ex. A tax which collects no revenue

##### B. Economic Incidence $\neq$ Statutory Incidence

- Why/How Tax shifting?

Ex.: I am willing to sell 0 to 10,000 cigarettes for \$1.75/pack

Tax = \$1.50/pack

#### V. Excess Burden:

##### A. What Does a Tax Do?

###### 1) Take Money out of Seller's Pockets

Loss to sellers

Offsetting gain: Govt. Revenue

###### &/or 2) Take Money out of Buyer's Pockets

Loss to buyers

Offsetting gain: Govt. Revenue

###### &/or 3) Change Behavior (Excess Burden)

(If Neg Externality; Pigouvian Correction)

Else: Loss to Buyers & Sellers for which there is no offsetting gain

##### B. Partial Equilibrium Analysis: Unit Taxes

$P_S$  = Price seller receives

$P_D$  = Price buyers pays

$P_O$  = Before tax price =  $P_{D0}$  =  $P_{S0}$

T = tax per unit (ex. \$9.00)

*Vertical/Horizontal Equity (perhaps Progressivity)*

*Here is my principle: Taxes should be levied according to ability to pay. That is the only American principle.*

- Franklin D. Roosevelt

Vertical Equity and Progressivity

*If we who have, cannot help those who have not, then we cannot help ourselves.*

- John F. Kennedy

Vertical Equity and Progressivity

*If a free society cannot help the many who are poor, it cannot save the few who are rich.*

- John F. Kennedy

Deadweight loss. The prohibitive part of the Laffer curve. Arguments against a highly progressive system

*I am convinced that the large incomes of the country would actually yield more revenue to the government if the basis of taxation were scientifically revised downward.*

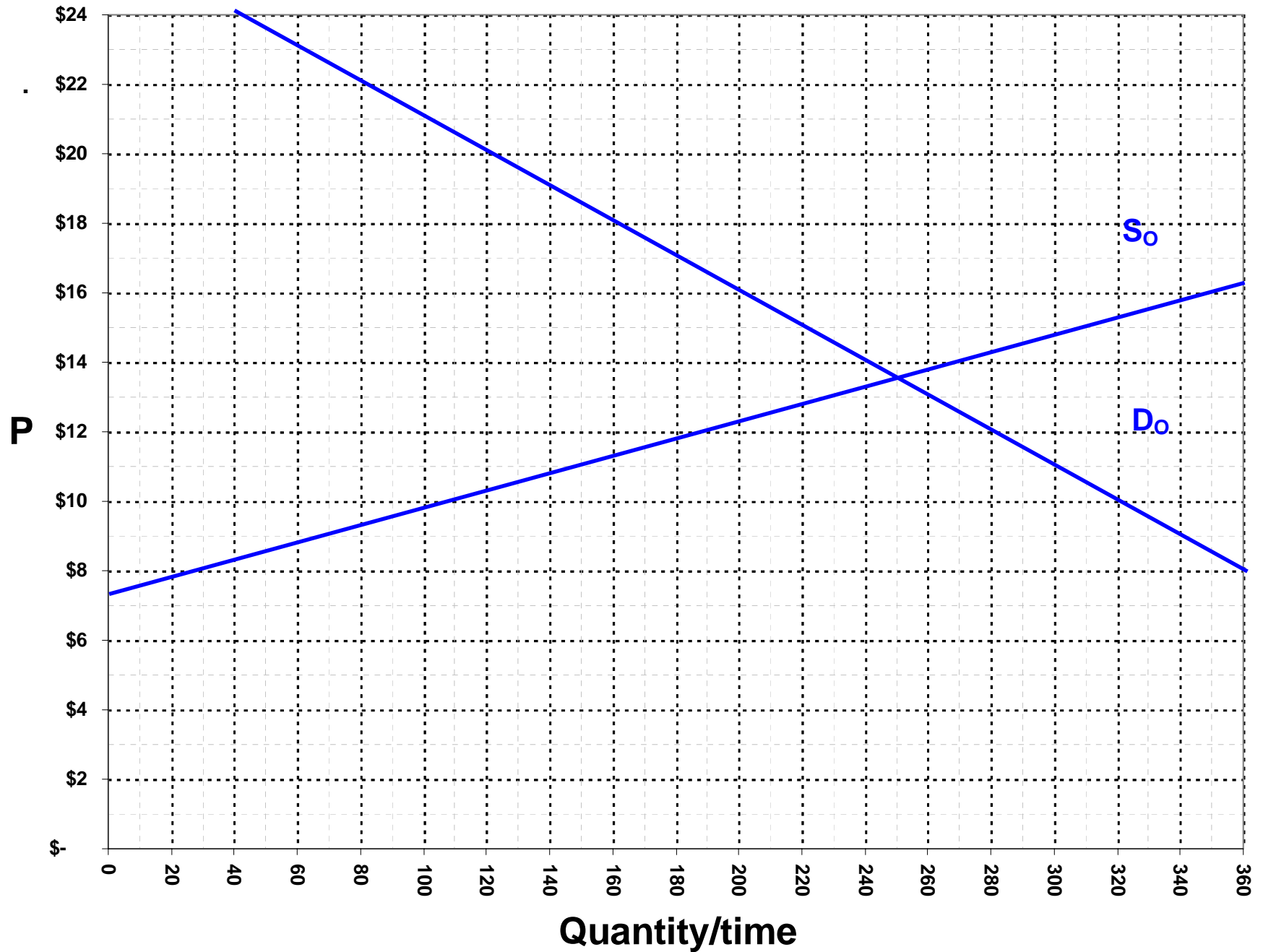
- Calvin Coolidge

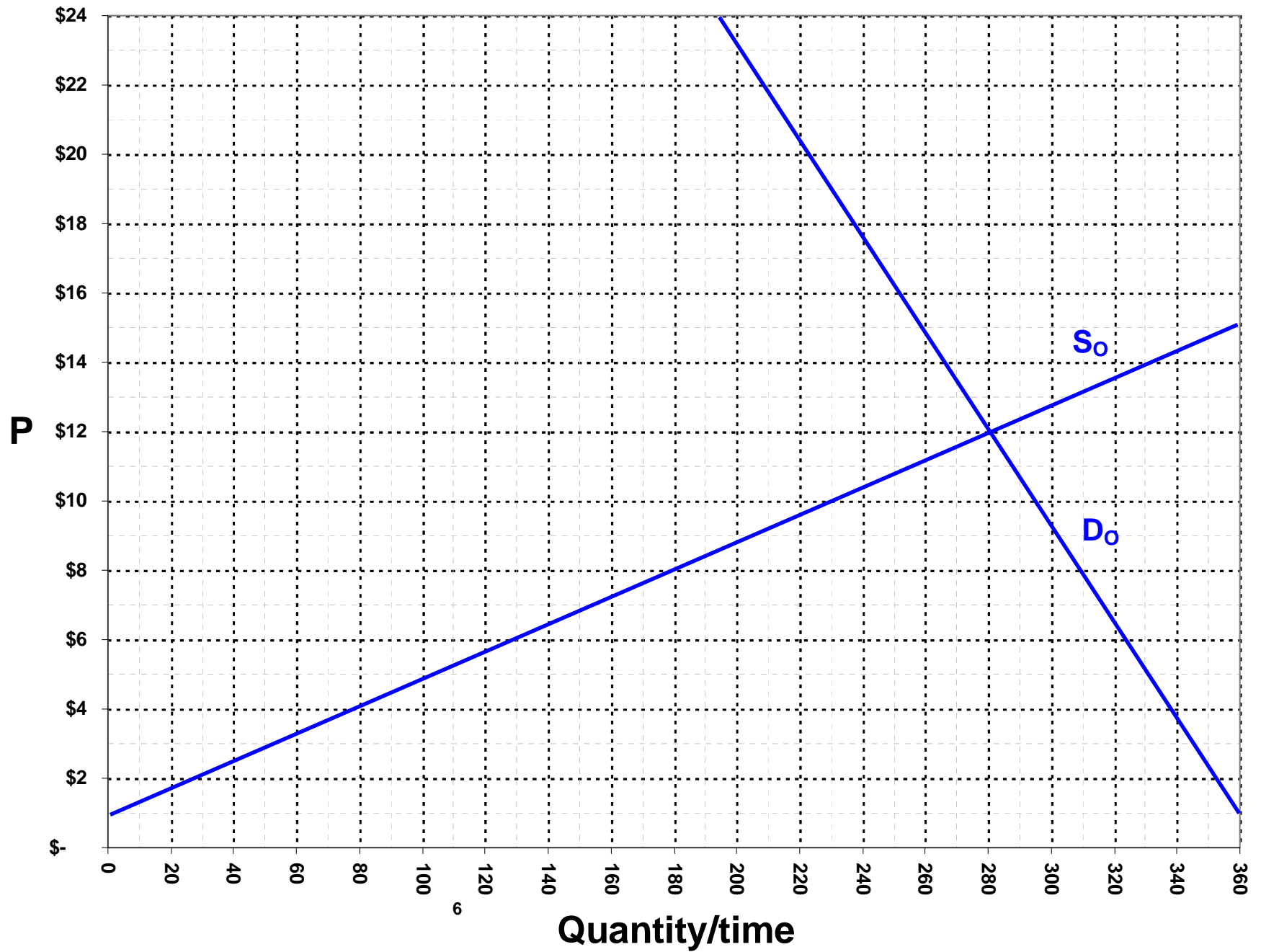
Deadweight loss. The inefficiency of the public sector.

*Government's view of the economy can be summed up a few short phrases: if it moves, tax it; if it keeps moving, regulate; and if it stops moving, subsidize it.*

- Ronald Reagan

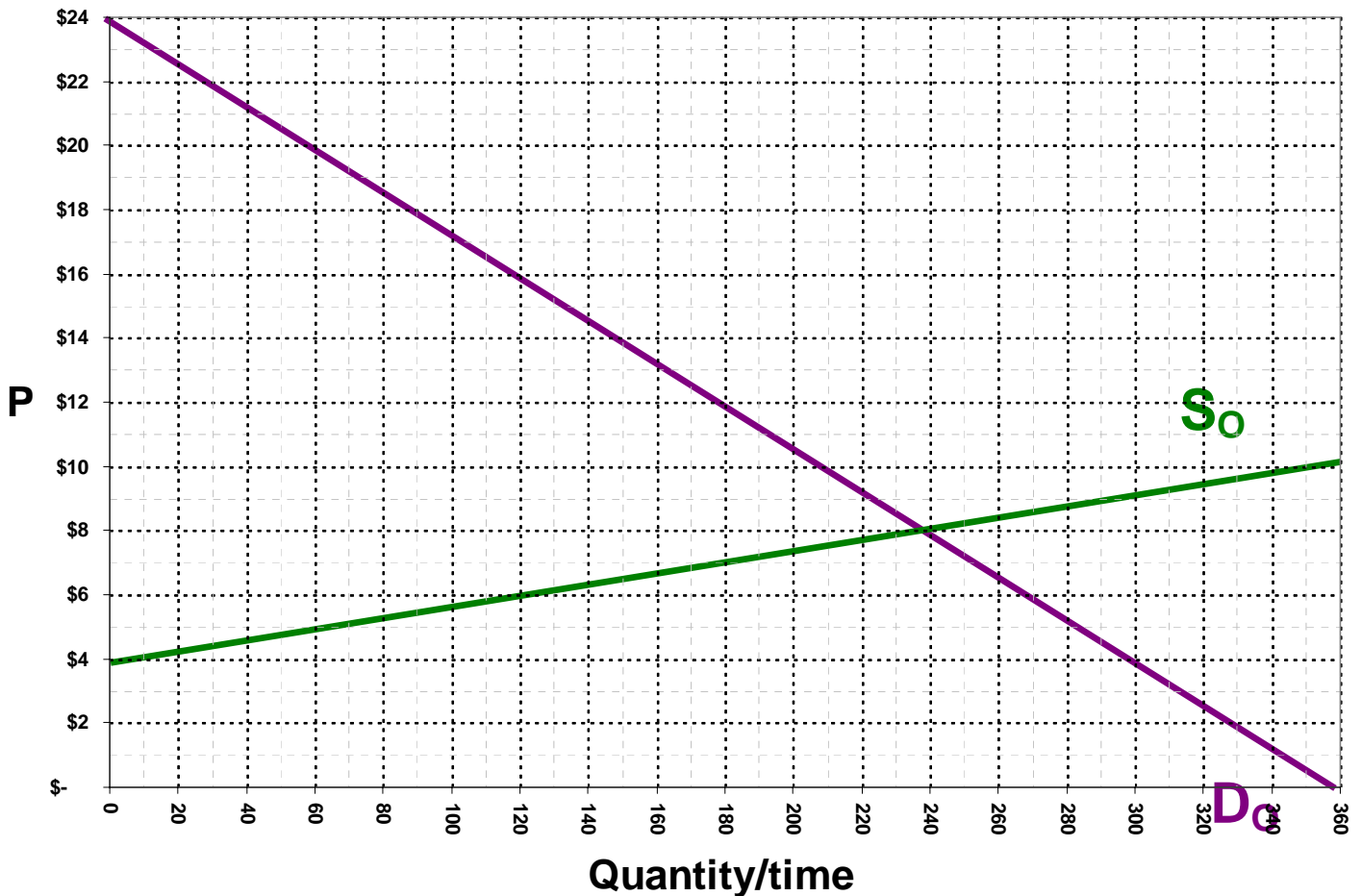
from: Words From Our Presidents: Quips and Quotes from George Washington to George W. Bush. Trevor Hunt, editor. Gamaercy Books. New York. 2003.



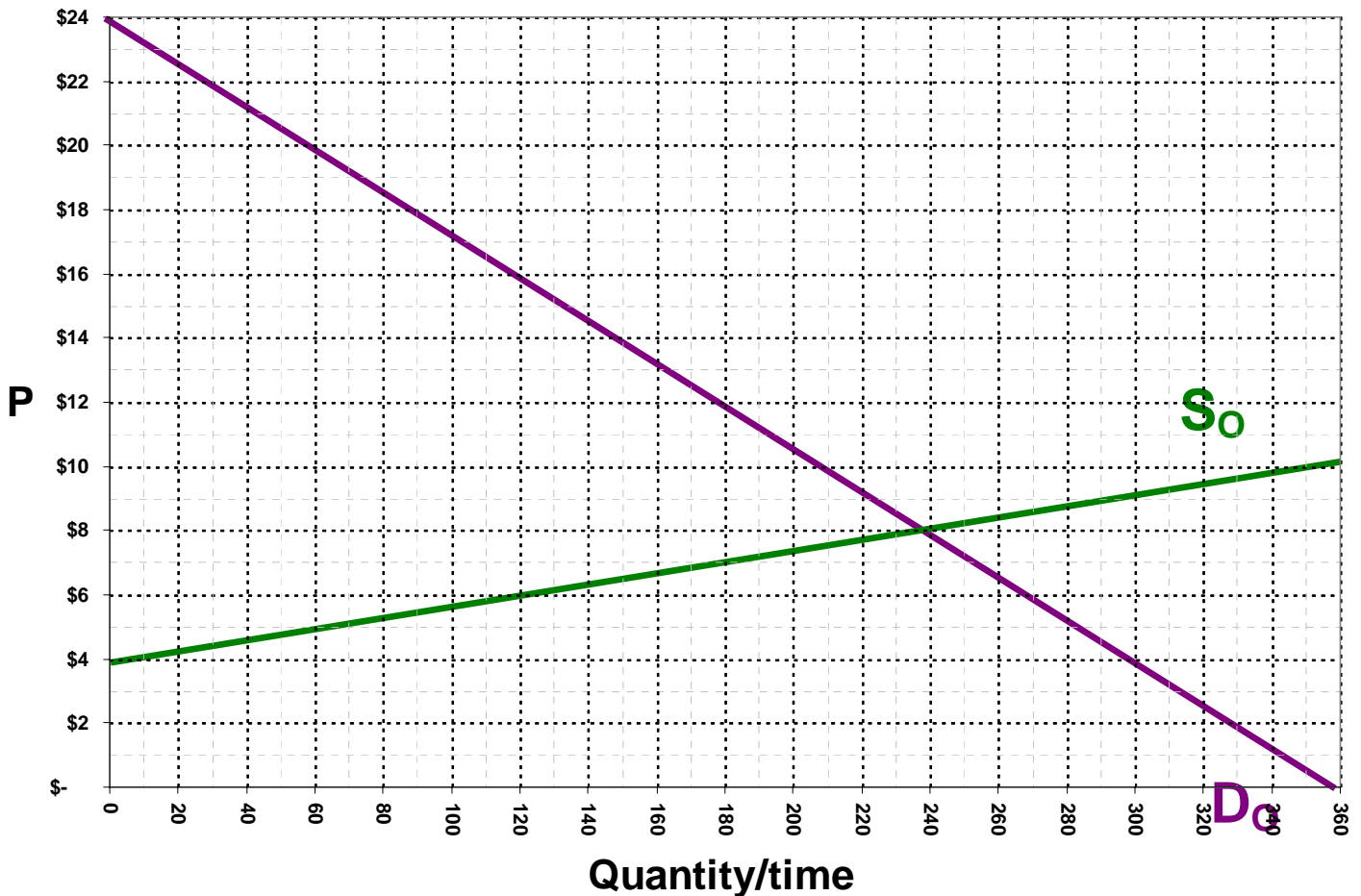


## Study Problems:

1. Discussion Question # 2 from chapter 12 of Harvey Rosen's Public Finance (6<sup>th</sup> ed.) page 281.
2. Discussion Question # 5 from chapter 12 of Harvey Rosen's Public Finance (6<sup>th</sup> ed.) page 281.
3. Discussion Question # 1 from chapter 13 of Harvey Rosen's Public Finance (6<sup>th</sup> ed.) page 281.
5. Discussion Questions # 2 - 5 from chapter 14 of Harvey Rosen's Public Finance (6<sup>th</sup> ed.) page 302.
6. Below you have pre-tax supply and demand curves for canoe rentals at lake Econbegone. Now assume that the local government imposes a \$7.50/canoe tax on canoe rentals. Sellers (i.e. the canoe rental companies) must pay this tax under the new law.



- a. Graphically, show the effects of this new tax. Make sure it is obvious what the new curve is. Also, label all the relevant points, PEO, QEO, etc.) in both the pre-tax and post-tax equilibrium.
- b. Describe the relative burden of this tax on buyers and sellers. What determines the relative burden.
7. Below you have pre-tax supply and demand curves for canoe rentals at lake Econbegone. Now assume that the local government imposes a \$7.50/canoe tax on canoe rentals. Buyers (i.e. the tourists visiting the park) must pay this tax under the new law.



- a. Graphically, show the effects of this new tax. Make sure it is obvious what the new curve is. Also, label all the relevant points, PEO, QEO, etc.) in both the pre-tax and post-tax equilibrium.
- b. Describe the relative burden of this tax on buyers and sellers. What determines the relative burden.

8. Baltimore recently considered a \$50 per month commuter tax. This tax would be paid by those who work in the city but do not live in the city. It would have been collected at a person's place of work. Assume a mayoral candidate favors this tax. She states; *"I took economics. I know that, ceteris paribus, commodities with low elasticities have low excess burdens and are generally good things to tax. Well, the latest survey results indicate that the commuters are highly inelastic with respect to the price of commuting. Therefore, this tax will not drive many commuters away. It will collect lots of revenue and still allow business to keep most of their workforce. The latest survey indicates it will generate almost \$2.5 million a month at a cost of only 500 commuting workers!"*

The question asked by the survey was: **"Assume the price of commuting increases by \$50 (about 20% of the total, including time, cost) because of a commuter tax. One month later, will you: a) have quit your job and found one outside of the city, or, b) still work in the city?"**

Here are the results from the survey and data about the number of commuters into Baltimore:

$$\% \text{ quitting} = .05\% \qquad E_{\text{DCommuting}} = \frac{.05\%}{20\%} = 0.025$$

# of commuters before tax = 50,000      # of commuters after tax = 49,750

Workers lost = 250      Revenues per worker lost = \$9,950

Taxes collected per month =  $\$49,500 \times \$50 = \$2,487,500$

- Assume the survey is accurate. Also ignore any general equilibrium effects or the missing (supply side) of the commuting market. **Is there something significant that the mayoral candidate is ignoring?** Hint: I am looking for one particular thing. It was not covered in class but is in roman numeral III of the chapter 13 (yes 13) review.
9. Niatirb, the mother country, colonized the land of Acirema. Niatrib placed a rather hefty tax on the manufacture of steel in its colony. Niatrib's parliament is debating whether or not to remove this tax. One member of parliament states; "This tax has obviously does not have any excess burden. After all, we have never collected one pence of revenues from it!"
- Comment on the member of parliament's statement. Does a tax which collects no revenues also have no excess burden?