Taxes
Econ 1101

Maria Rodriguez

University of Minnesota

September 24, 2013

ECON 1101 Lecture 4.2

1. Taxes and Economic Incidence

**2. Welfare Analysis**

3. Special Taxes

ECON 1101 Lecture 4.2
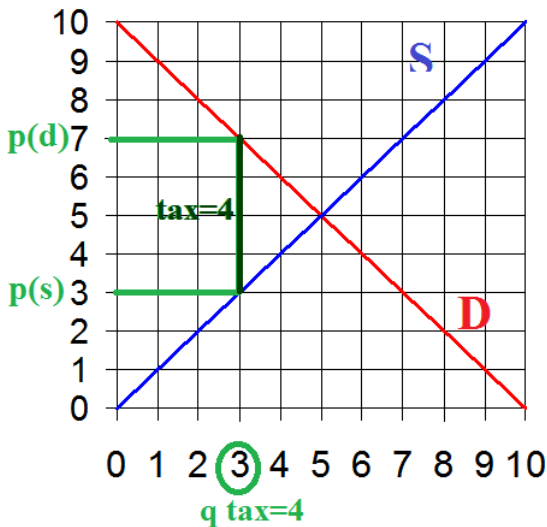
1. Taxes and Economic Incidence

Taxes and Incidence

- Introduction - point out cost in terms of efficiency of using tax

- Definition - "wedge"

- How to find the equilibrium with taxes

- Tax incidence - burden: the more elastic side avoids the larger burden

- Aplication of Tax incidence: Market for oil in Spain
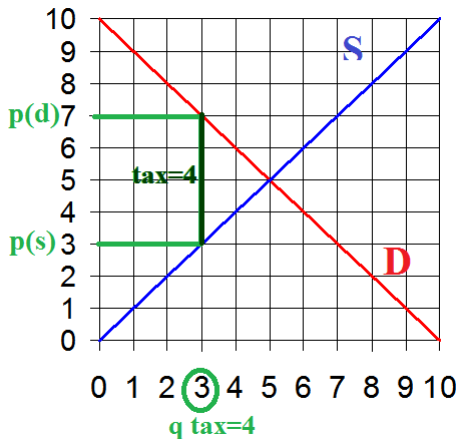
Market equilibrium EconLand
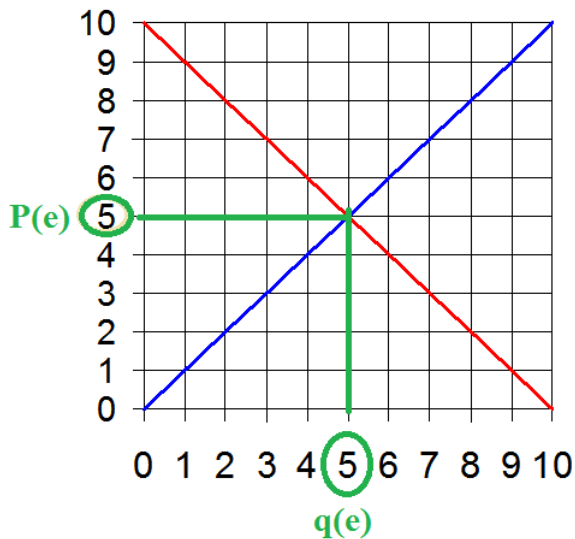
$4 widget tax in Econland
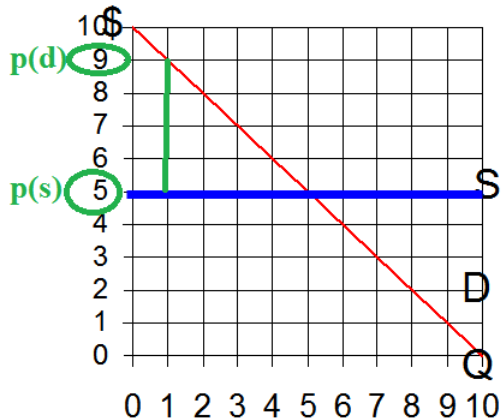
Burden of our $4 tax is splited equally

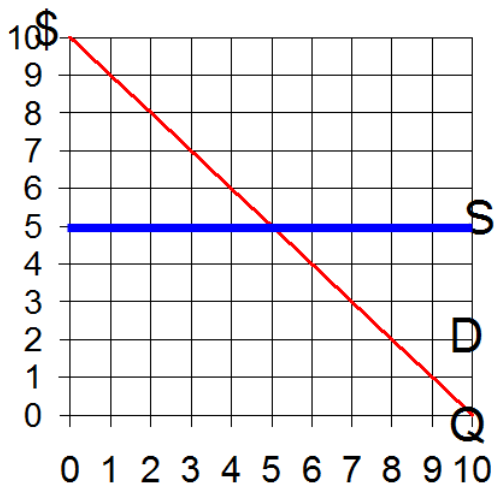|	No Tax	$4 tax	Change
Q	5	3	-2
P^S	5	3	-2
P^D	5	7	+2

Same tax burden for consumers and producers
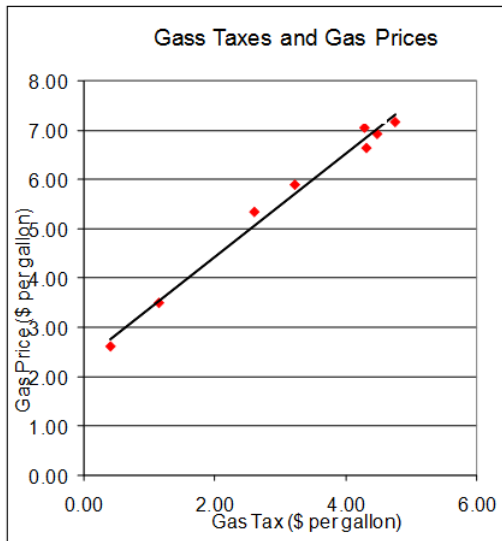
Tax burden depends on elasticity

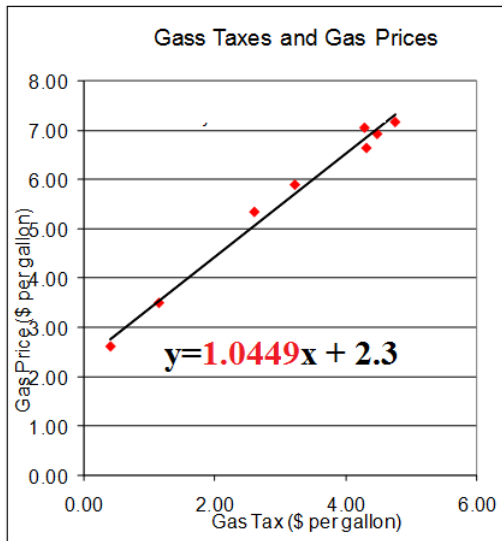In general, the more elastic side of the market avoids the larger tax burden

Aplication: Gas Market In Spain Homework 3

Regression Gas taxes and Gas Price

Regression Gas taxes and Gas Price

Gass Taxes and Gas Prices

$y = 1.0449x + 2.3$
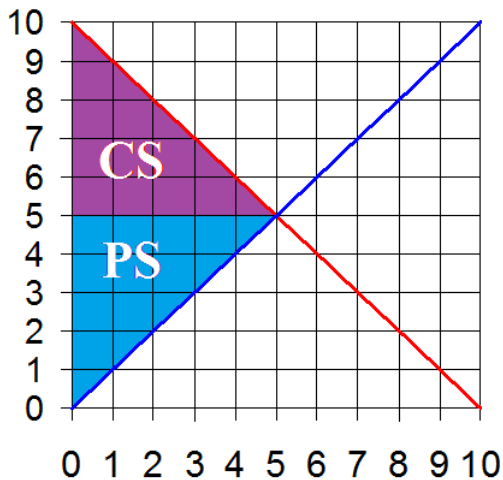
ECON 1101 Lecture 4.2

2. Welfare Analysis of tax1 in EconLand

Welfare Analyisis (Surpluses)

Definitions:

- Consumer Surplus
- Producer Suplus
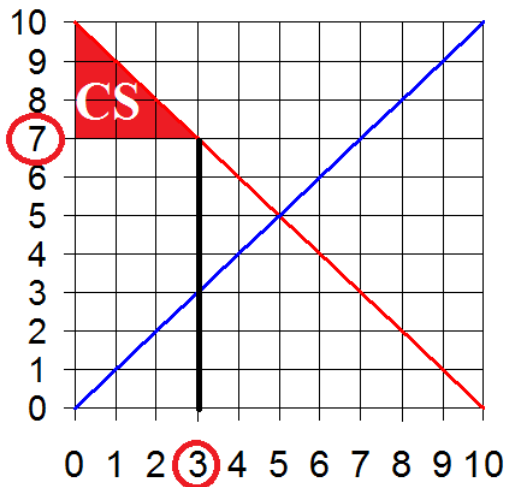- Government Surplus
- Total Surplus

Surpluses in Free Market

CS=5x5/2 = 12.5

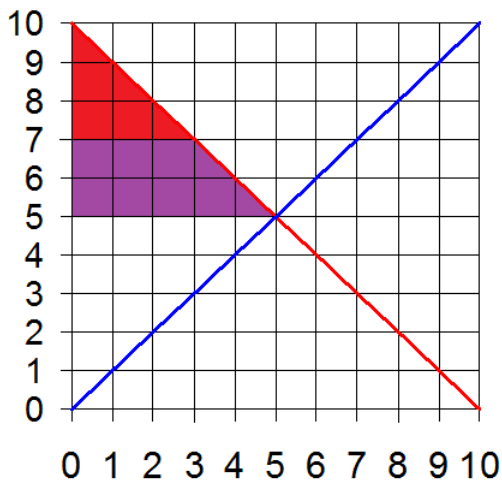PS=5x5/2 = 12.5

Consumer Surplus with Tax
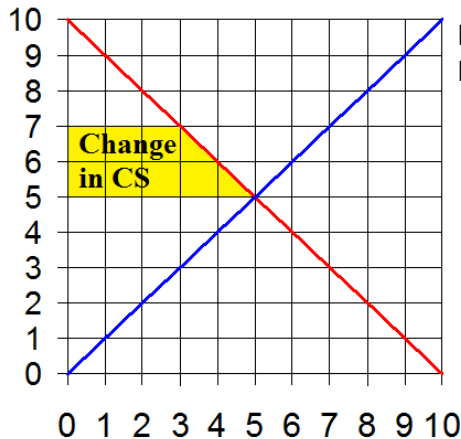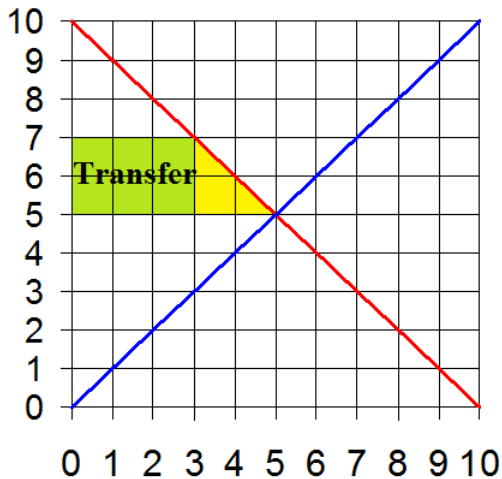

CS=3x3/2 = 4.5
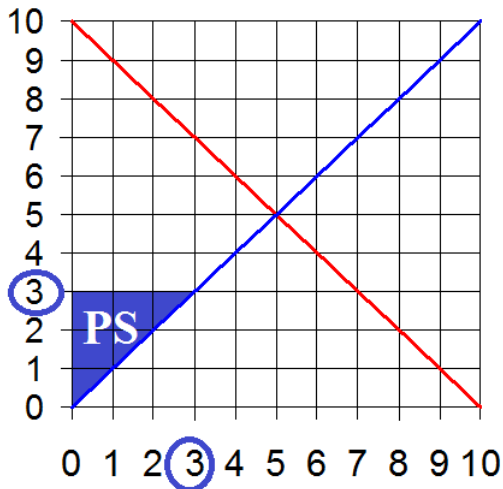
Putting Together

Change in Consumer Surplus

Loss in CS is the yellow trapezoid
It has two parts

- A square that is due to the increse in price for units still consumed (transfer to the gov)
- A small triangle due to the loss in CS of output no longer consumed (destruction of social surplus)
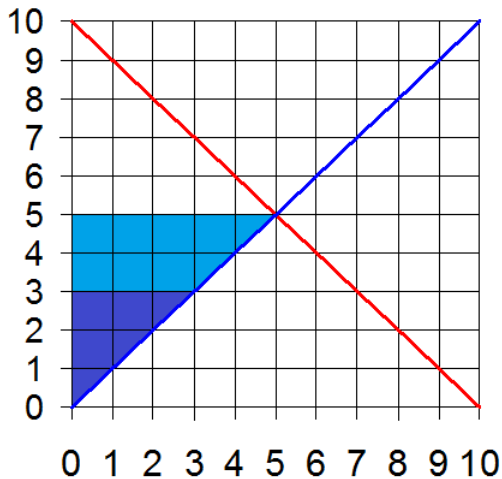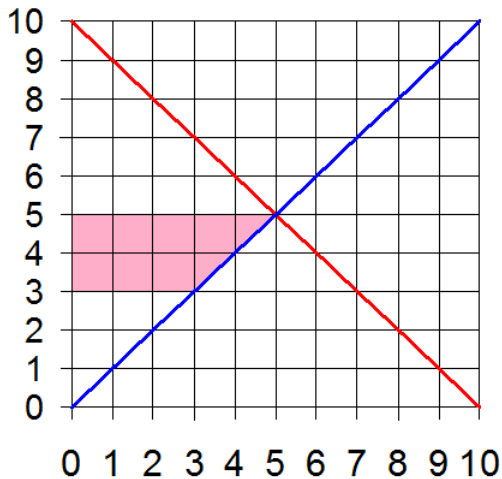
Change in Consumer Surplus

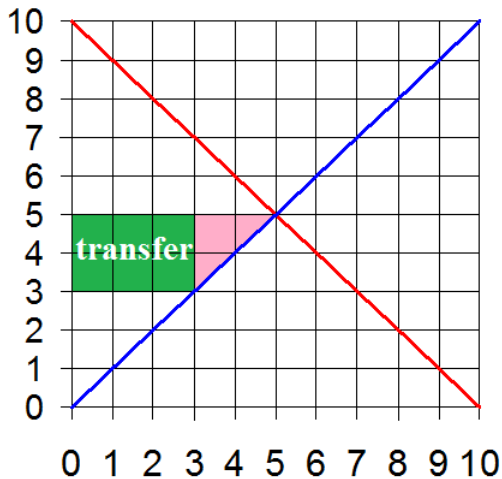# Similarly for Producer Surplus

PS=3x3/2 = 4.5

Change in Producer Surplus

Change in Producer Surplus

Change in Producer Surplus

Government Surplus
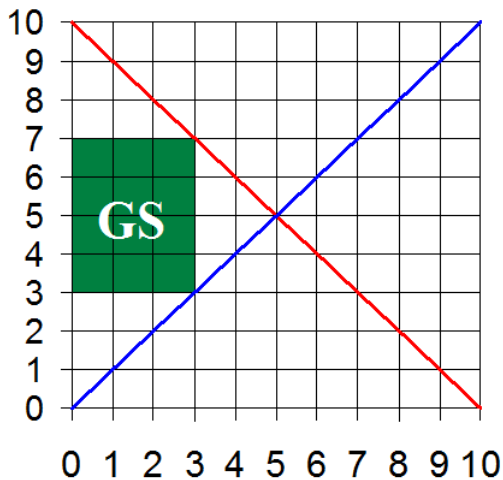
GS= tax x quantity
GS=4x3=12

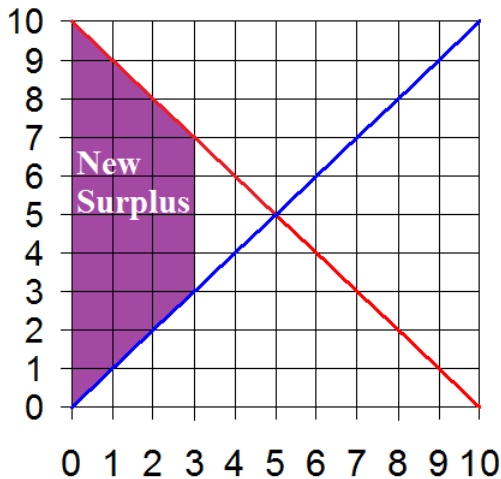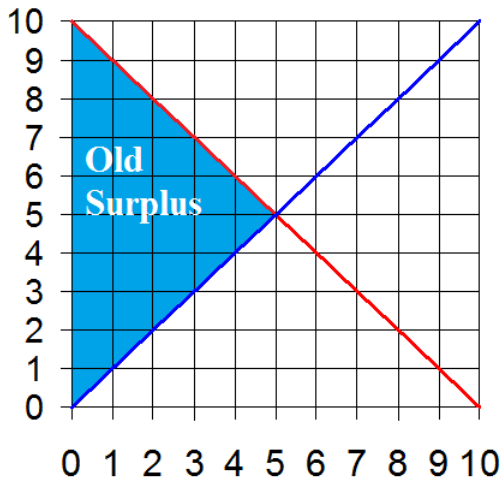# Government Surplus
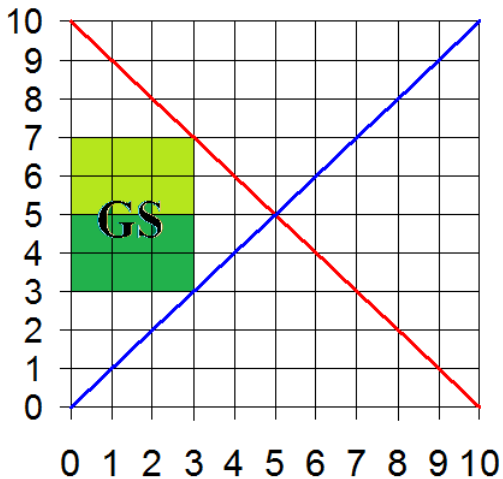
Total Surplus increased or decreased?
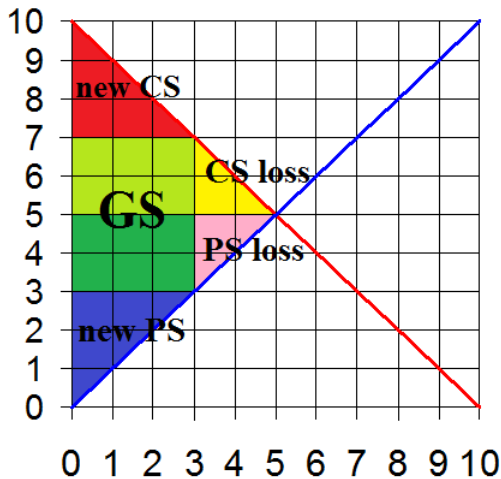
Total Surplus comparing with Free Market

Total Surplus comparing with Free Market

Total Surplus decreased: DWL
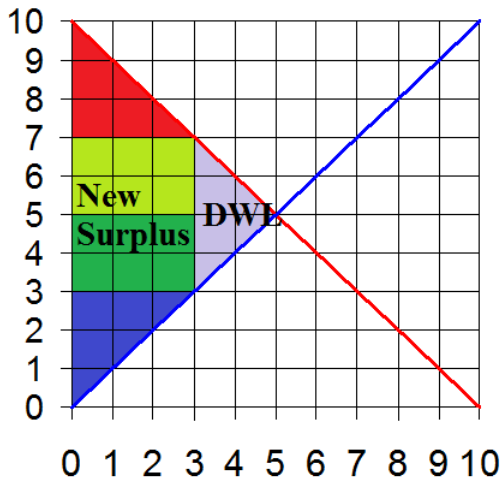
ECON 1101 Lecture 4.2

3. Special Taxes

Special Taxes - Lump Sum

Suppose the goverment (in econland) was raising money for D10 and S10, senior citizens that need medicare of cost $12.

- The widget tax program raises money but at a cost of a deadweight loss (DWL)
- Is there an alternative to raise money and finance medicare without causing DWL?

Alternative1: Head tax (lump-sum tax) $0.6 a person

- Government can tax D1-D10, S1-S10 (20 people) for a total of $12
- There will be no distortion

Why Not?

Special Taxes - Lump Sum

With a head tax there will be no distortion, why?

- Taxing widgets (products, in general) affects our decision making behavior (via prices) which is the underlying cause of inefficency
- Head (lump-sum) taxes do not change my desire to buy (it may affect how much of it I can buy or sell)
- Generally, taxes that distort decision making behavior reduce the social pie in the form of deadweight losses

Lump sum vs widget taxes

Alternative 2: Tax of \$2 for S1-S3, D1-D3

How does this compares with the \$4 widget tax (on the right)?

It is a pareto improvement: everyone is as good off as under the widget tax or better:

- S4, S5, D4,D5 are happier because they can engage in trade as they normally would
- S1-S3, D1-D3 are as good off as under the widget tax:
  - They loose \$2 in taxes, but
  - Make at least that much back (CS, PS) from having prices back to \$5