

## Intro

Change in allocative efficiency:

$$\Delta SS = \underset{\substack{\downarrow \\ \text{Output}}}{\Delta SS_0} + \underset{\substack{\downarrow \\ \text{Input}}}{\Delta SS_I} + \underset{\substack{\downarrow \\ \text{Secondary Markets}}}{\Delta SS_S}$$

## 5.1 Shadow Pricing

When no market price exists or it is obscured, shadow pricing exists

## 5.2 Valuing Impacts in Efficient Markets

5.2.1 Direct increase in supply available to consumers

5.2.2 Direct reduction in costs to producers

## 5.3 Valuing Impacts in Distorted Markets

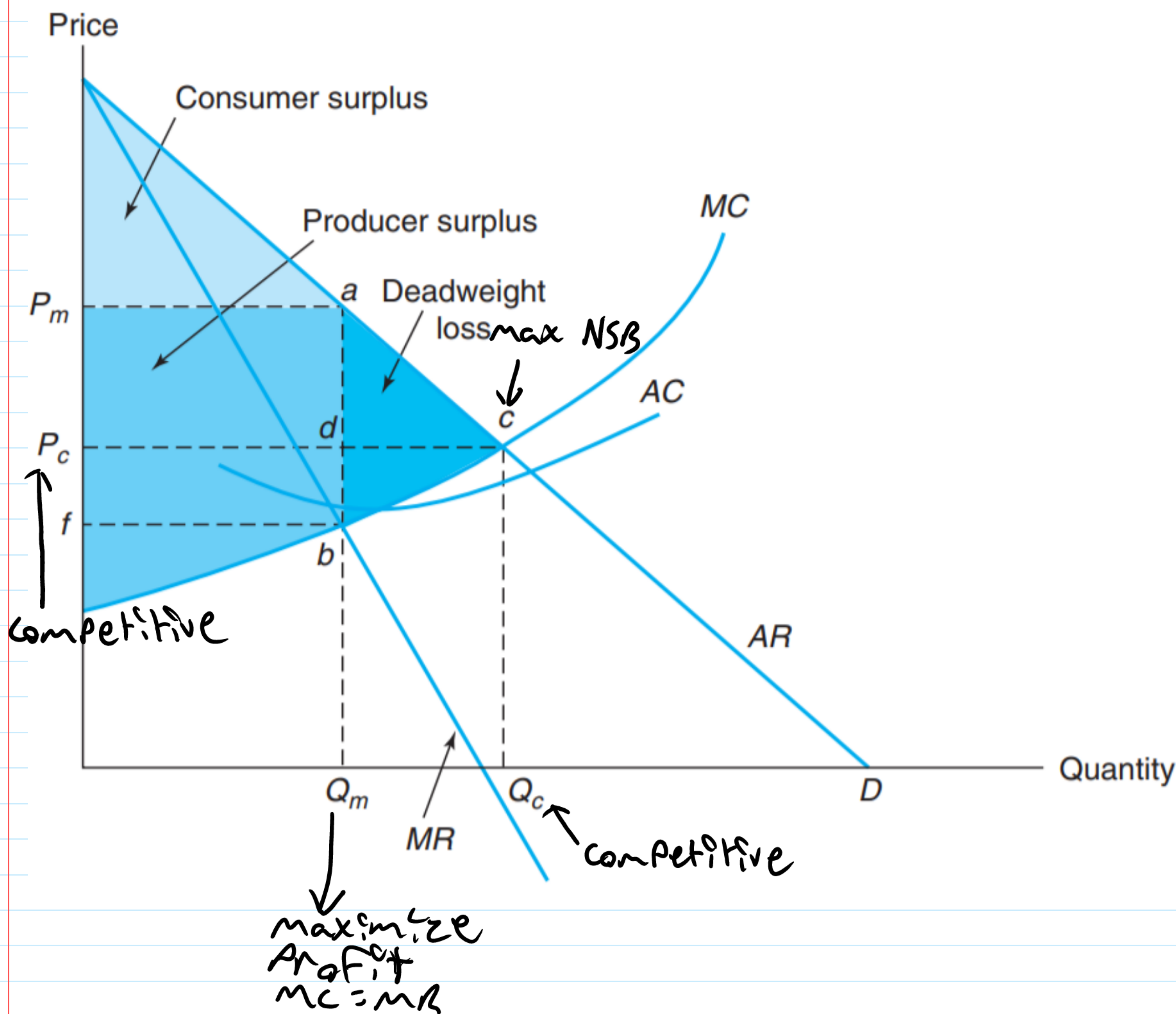
If output market becomes distorted, hard to determine correct surplus changes

Five types of failures:

- monopoly
- information asymmetry
- externalities
- public goods
- addictive goods

### 5.3.1 Monopoly

results in DWL and reduces SS  
Marginal Revenue (MR) is below demand (AR)



$$SS = CS + PS$$

Monopolist maximizes profits

### 5.3.2 Natural monopoly

Natural monopoly enjoys economies of scale over a wide range of outputs

Large fixed costs relative to variable costs

$MC < AC$  over range