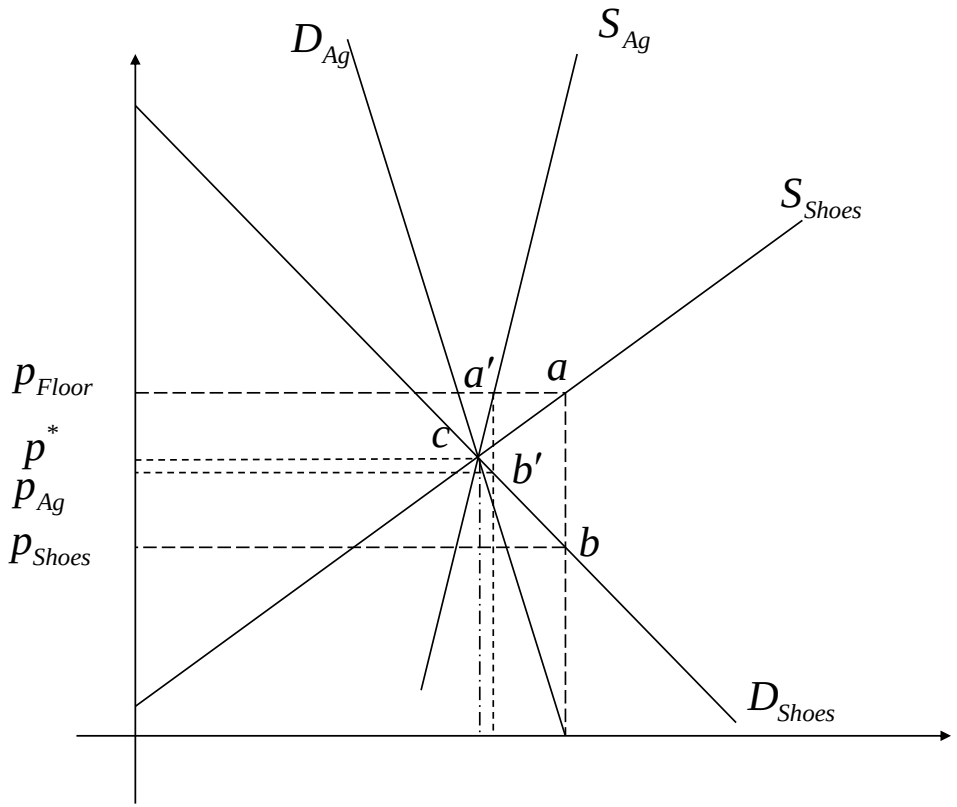
Lecture XVII: Efficiency of Economic Transfer and Theory of Regulation

Charles B. Moss [1]

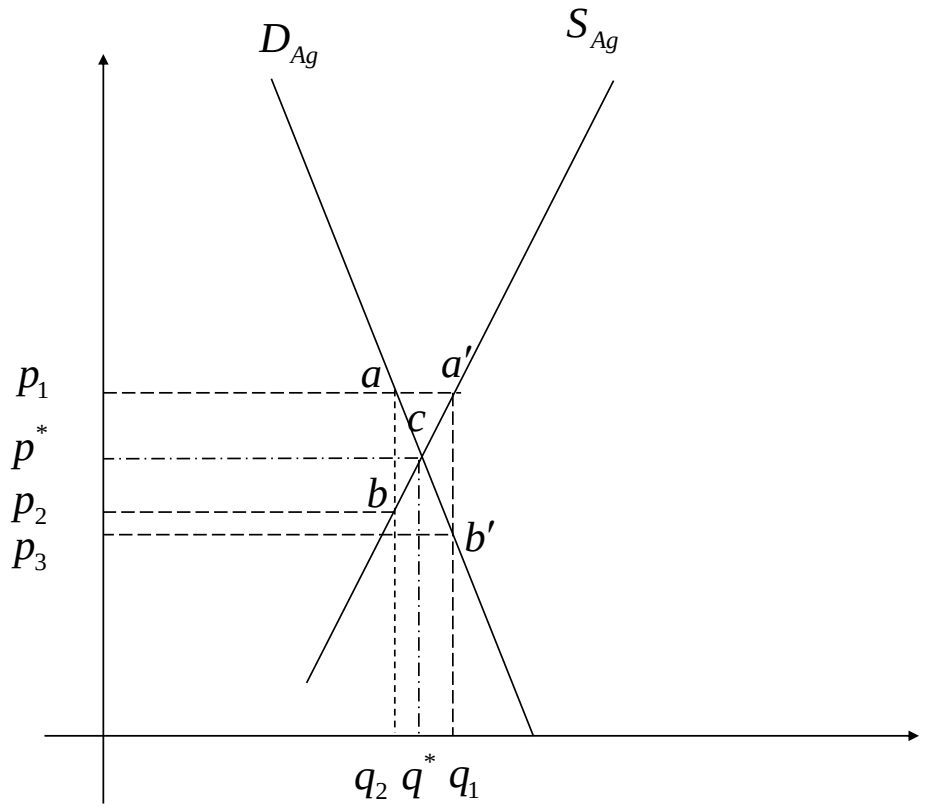
[1] University of Florida

October 15, 2018

Inelastic Supply and Demand



Comparing Quota and Price Floor



Gardner and Efficiency of Transfers

- First, consider the economic gains and losses to the a quota program

$$\begin{aligned} CS &= \int_0^{q_2} D(q)\,dq - D(q_2)\,q_2 \\ PS &= S(q_2)\,q_2 - \int_0^{q_2} S(q)\,dq \end{aligned} \quad . \tag{1}$$

- Next, consider the economic gains and losses to the price floor (or deficiency) program

$$\begin{aligned} CS &= \int_0^{q_1} D(q)\,dq - D(q_1)\,q_1 \\ PS &= S(q_1)\,q_1 - \int_0^{q_1} S(q)\,dq \end{aligned} \quad . \tag{2}$$

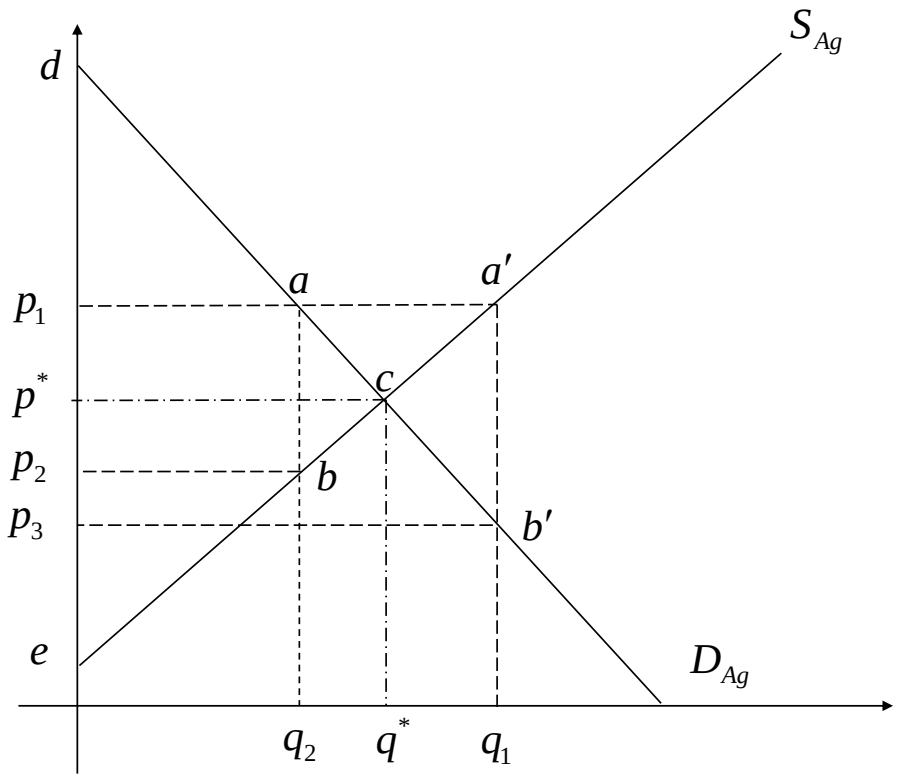
Gardner and Efficiency of Transfers, Continued

- What we want to consider is that the producer surplus is a function of the Dead-Weight-Loss (DWL) and the level of consumer surplus generated

$$PS = f(CS) \tag{3}$$

- What we are interested in generated is the Surplus Transformation Curve (STC). This is the combination of producer and consumers surpluses that can be generated from each program.
- Take the price floor solution as an example – gain in producer surplus is $p_1 a' c p^*$ while the consumer surplus is $p^* c b' p_3$.
- However, let us consider the complete consumer and producer surplus.

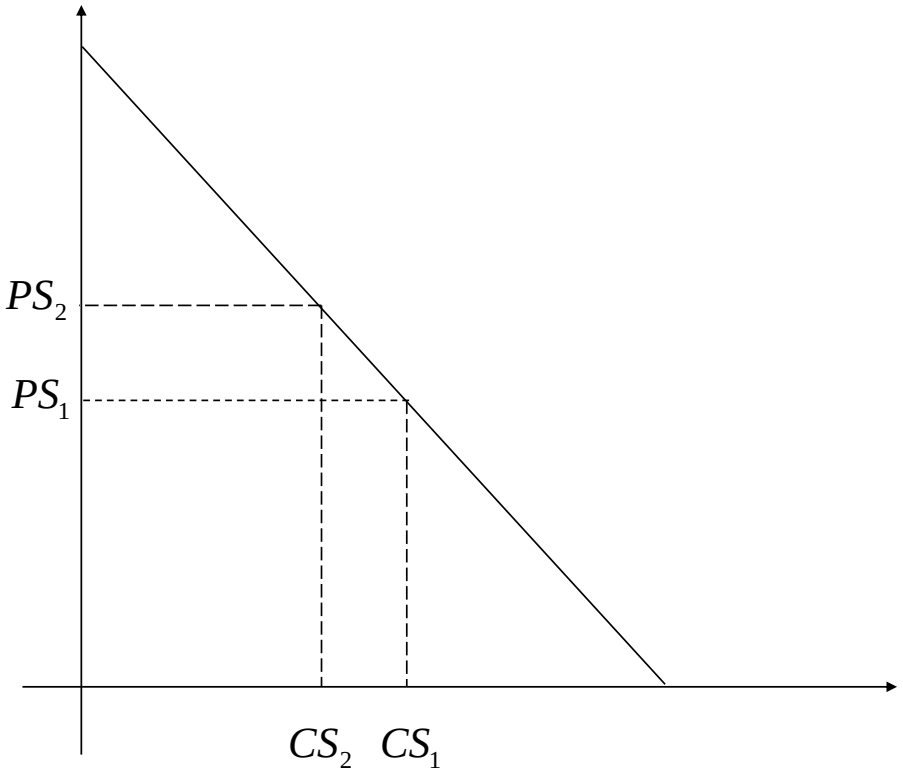
Gardner and Efficiency of Transfers, Continued



Gardner and Efficiency of Transfers, Continued

- The complete consumer surplus(CS_1) for the price floor is $db'p_3$ and the complete producer surplus (PS_1) for the price floor is $p_1a'e$.
- The complete consumer surplus (CS_2) for the price quota is dap_1 while the complete consumer surplus for producers (PS_2) is p_1abe.
- We could envision these two outcomes as two points on a policy Surplus Transformation Curve

Gardner and Efficiency of Transfers, Continued



Gardner and Efficiency of Transfers, Continued

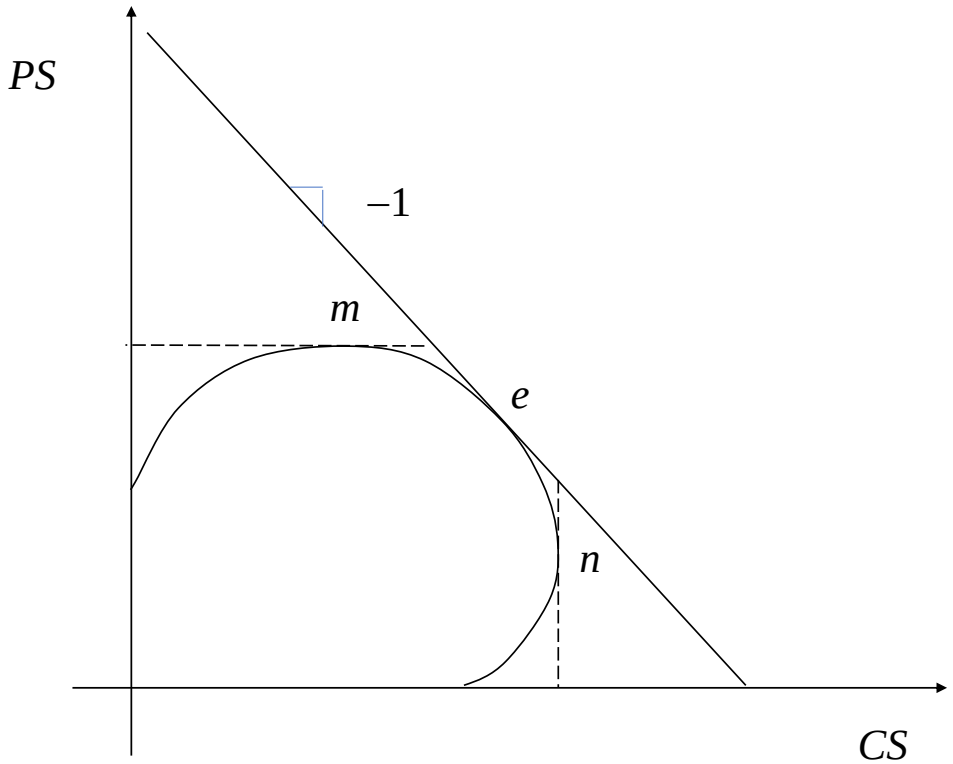
- Taking a slightly different approach – Assume that we compute the producer surplus associated with a particular consumer surplus under a given program

$$PS = f(CS) \tag{4}$$

- Taken together, these results imply a Surplus Transformation Curve

$$STC = f(CS, PS) \tag{5}$$

Gardner and Efficiency of Transfers, Continued



Gardner and Efficiency of Transfers, Continued

- What is the slope between producer surplus and consumer surplus along the policy line

$$\frac{d\,PS}{d\,S} = \frac{\frac{d\,PS}{d\,q}}{\frac{d\,CS}{d\,q}} \tag{6}$$

- Production quotas $A = 1/\epsilon - 1/\eta$

$$\frac{d\,PS}{d\,CS} = -\eta \left[1 - \left(\frac{q}{q_0} \right)^A \right] - 1 \tag{7}$$

Gardner and Efficiency of Transfers, Continued

- Deficiency payments (δ is the marginal cost of raising money by taxes)

$$\frac{d\,PS}{d\,(CS+TS)} = \frac{1}{-\epsilon + \epsilon\left(\frac{q_0}{q}\right)^{A} - 1} - \delta \tag{8}$$

Theory of Regulation

- Originally, regulation was seen as a good produced at no cost by government that was used as a response to some market failure.
- George Stigler (1971) proposes an alternative view of regulation as a form of rent-seeking behaviour that has since changed the way many economists model the government.
- At times, governments have introduced regulations that have forced firms with market power to price as if the firms were in a competitive industry.
- It is possible for the regulators to be captured by the regulated.

Theory of Regulation, Continued

- This is interest-group theory in which concentrated groups of individuals affected by legislative decisions have an incentive to influence those decisions.
- Interest groups spend resources to lobby policymakers (Becker 1983).