

AAE 875: Fundamentals of OOP and Data Analytics

Week 3, part 1: Classes

Example 1: A market

Let's write a class for a simple one good market where agents are price takers

The market consists of the following objects:

- A linear demand curve $Q = a_d - b_d p$
- A linear supply curve $Q = a_z + b_z (p - t)$

Here

- p is price paid by the consumer, Q is quantity and t is a per-unit tax parameter
- Other symbols are demand and supply parameters

The class provides methods to compute various values of interest, including:

- competitive equilibrium price and quantity
- tax revenue raised
- consumer surplus
- producer surplus
- inverse demand
- inverse supply
- inverse supply w/o tax

Tasks:

1. Write code to implement the class following the instructions above
2. Create an instance of the class called *market1* with `baseline_params = 15, 0.5, -2, 0.5, 3`
3. Print price in *market1*
4. Print consumer surplus in *market1*
5. Repeat steps 1-4 above to create another instance of the class called *market2*. Choose your own `baseline_params`.

Source: T. Sargent and J. Stachurski, https://lectures.quantecon.org/py/python_oop.html, accessed July 15, 2019