

Case 2: New Sales Tax

Set the tax:

$$T = 200$$

Find P^d and P^s :

$$Q_M^D = Q_M^S$$

$$\frac{2000 - P^d}{5} = \frac{P^s}{15}$$

$$P^d = P^s + 200$$

$$\frac{2000 - (P^s + 200)}{5} = \frac{P^s}{15}$$

$$\frac{2000}{5} - \frac{P^s}{5} - \frac{200}{5} = \frac{P^s}{15}$$

$$360 = \frac{4P^s}{15}$$

$$P_2^s = \$1350$$

$$P_2^d = \$1350 + \$200 = \$1550$$

⚠ $P_2^d \neq P_1^d + 200$ [would be \$1700]
Generally **can not** just add the tax to the old price to get the new price.

Both prices change relative to BAU:

$$\Delta P^d = P_2^d - P_1^d = 1550 - 1500 = +50 \quad \blacktriangle = \text{Bad for buyer}$$

$$\Delta P^s = P_2^s - P_1^s = 1350 - 1500 = -150 \quad \blacktriangledown = \text{Bad for seller}$$

Tax burden:

Portion of a tax borne by an agent; here, it's the portion of the \$200:

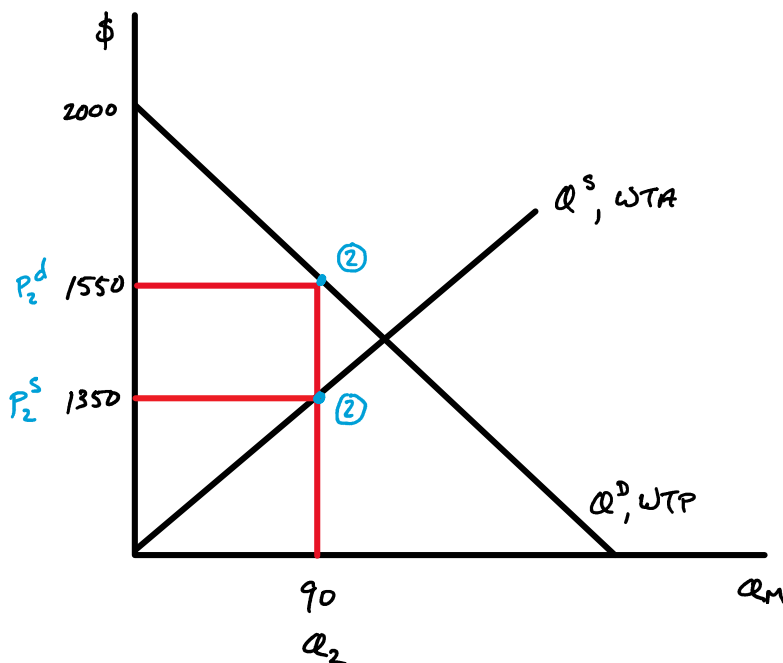
Agent	Cost to agent, \$	Burden, % of T
Buyer	\$50	$50/200 = 25\%$
Seller	\$150	$150/200 = 75\%$

Now find Q_M^D and Q_M^S :

$$Q_M^D = \frac{2000 - 1550}{5} = 90$$

$$Q_M^S = \frac{1350}{15} = 90$$

Graphing:



Practice finding an equilibrium with a tax:

Economic Skills Project exercise MT-101

<https://wilcoxen.maxwell.insightworks.com/esp/mt101/>

Daily exercise