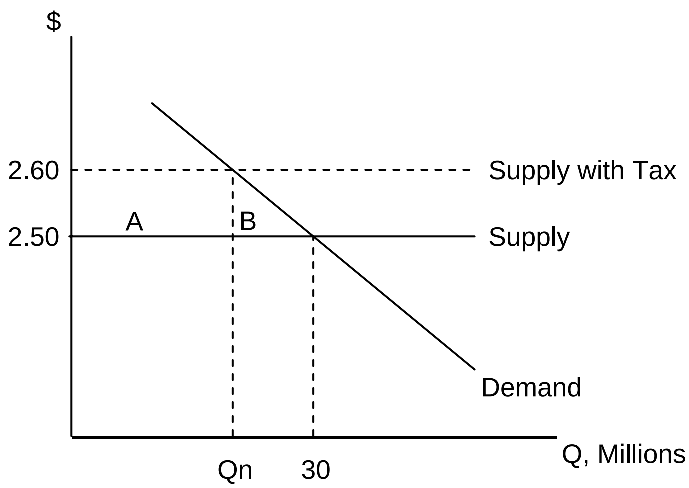
Espresso Tax
Notes on Solution

1 Supply curve perfectly elastic:



demand elasticity = -0.5

old price = 2.50
new price = 2.60
change in P = 0.10
pct chg in P = 4.0%
pct chg in Q = pct change in P * demand elasticity
pct chg in Q = -2.0%
Qn = 30*(1+pct chg in Q)
Qn = 29.4 million
change in Q = -0.6 million

Change in CS = -(A+B)
Change in PS = 0
Revenue = A

A = 2.94 million
B = 0.03 million

Loss of CS	=	2.97
Loss of PS	=	0
Tax Revenue	=	2.94
DWL	=	0.03

DWL per dollar of revenue = 0.010

2 Higher demand elasticity

demand elasticity = -2.0

pct chg in Q = pct change in P * demand elasticity
pct chg in Q = -8.0%
Qn = 30*(1+pct chg in Q)
Qn = 27.6 million
change in Q = -2.4 million

Change in CS = -(A+B)
Change in PS = 0
Revenue = A

A = 2.76 million
B = 0.12 million

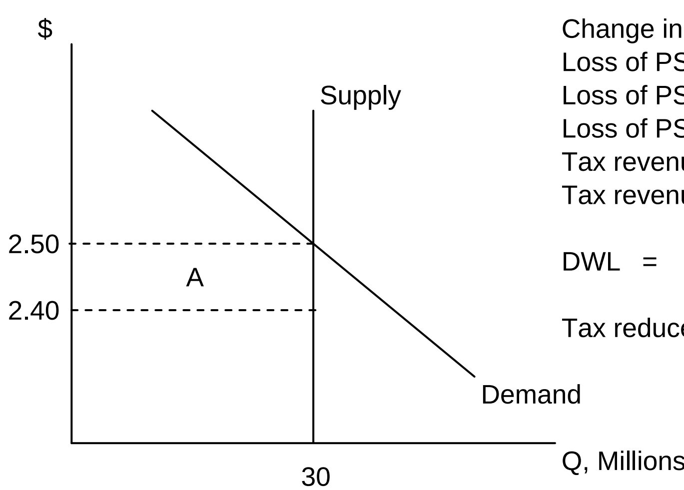
Loss of CS	=	2.88
Loss of PS	=	0
Tax Revenue	=	2.76
DWL	=	0.12

DWL per dollar of revenue = 0.043

DWL per dollar is about 4x larger because demand is more elastic.

3 Supply perfectly inelastic

In this circumstance, producers will end up paying the tax; none of it will be passed on to consumers. Here's the diagram:



Change in CS	=	0
Loss of PS	=	A
Loss of PS	=	0.10 * 30 million
Loss of PS	=	3 million
Tax revenue	=	0.10 * 30 million
Tax revenue	=	3

DWL = 0

Tax reduces PS but does not create any DWL.

The price will remain at $2.50 so there will be no change in CS.