Application of Welfare Analysis: The Costs of Taxation

A tax causes the after-tax price paid by consumers to go up, and the after-tax price received by sellers to go down.

The tax causes consumer surplus and producer surplus to go down. However, the tax revenue provides the government with surplus.

Note: From Chapter 6, we saw that the equilibrium quantity and the after-tax prices paid by consumers and producers did not depend on who the tax is levied upon.

Therefore, we can see the effect of a tax on the demand-supply diagram based on the original curves, by finding the quantity at which the difference between willingness to pay and willingness to sell equals the tax.

How does the loss of consumer and producer surplus compare with the revenue received by the government?

Answer: the revenue received by the government (government surplus) is *less* than the loss of surplus by consumers and firms.

Total surplus, of consumers, producers, and the government, falls due to the tax.

This net loss in total surplus due to the tax distortion is called the *deadweight loss*.

Deadweight loss reflects the lost gains from trade as the equilibrium quantity falls, due to the wedge between the price paid by buyers and the price received by producers. Some beneficial trades will not occur:

Joe cleans Jane's house for $100 per week.

Joe has an opportunity cost (willingness to sell) of $80, and Jane receives a benefit (willingness to pay) of $120, so they each receive a surplus of $20.

Now the government imposes a tax of $50. There is no price at which both are better off after paying the tax. If Jane pays $120 (after-tax), Joe is only receiving $70 (after-tax).

They cancel the arrangement, so the government receives no tax revenues from Joe and Jane! Total surplus falls by $40.

Tax Distortions and Elasticities

If either demand or supply is inelastic, then the tax will not reduce the equilibrium quantity much, and the deadweight loss is small.

For the labor market, many workers will work about 40 hours a week, no matter what wage they can earn. Inelastic supply.

However, labor supply is highly elastic for the following segments:

1. Those who can choose to work overtime.
2. Families with either 1 or 2 workers.
3. Elderly, who can work or retire.

Deadweight Loss and Tax Revenue as Tax Rate Varies

For low tax rates, the deadweight loss will be small relative to the tax revenue.

As the tax rate increases, the ratio of deadweight loss to tax revenue grows.

For very high tax rates, revenues are actually falling as the tax rate increases further. The Laffer curve.

Conclusions about Taxation

Taxes affect incentives and cause beneficial trades not to occur. It is *more* than just a redistribution from the private sector to the government sector.

Add to the deadweight loss any inefficiencies in the way government spends the money.

Taxes on labor income and capital income distort the decision to supply labor and invest in capital.

Reaganomics (also called supply-side economics) wants tax cuts, not to transfer money from the government to people, but to reduce deadweight loss distortions.

Some use the Laffer curve to say that a tax cut will increase revenues and lower budget deficits.