

Chapter Summaries

Chapter 18: Tax Incidence - Theoretical Issues

Economists distinguish between the impact and the incidence of a tax. The impact refers to the levying of the tax; who pays the tax to the government. The incidence refers to who bears the burden of the tax. The two differ because governments tax market transactions and markets react to taxation. Chapter 18 develops a number of principles related to determining the incidence of a tax. It begins with the *standard supply and demand analysis* of a per-unit excise tax levied on the producers of some good.

1. A per-unit excise tax shifts up the supply curve by the full amount of the tax and establishes two prices, whereas before there was only one price. The gross-of-tax price is the new market price, the price that is relevant to the consumers. The net-of-tax price subtracts the tax from the gross-of-tax price and is the price that is relevant to the producers for paying their factors of production and earning a return on their capital.
2. In the general case, the market distributes the burden of the tax between the producers and consumers. Relative to the no-tax equilibrium, consumers bear a burden because they pay a higher price and buy less – they lose some of their former consumer surplus; producers bear a burden because they receive a lower price and sell less – they lose some of their former producer surplus.
3. *Principle:* The more inelastic is demand (supply) relative to supply (demand), the greater the proportion of the burden is borne by the consumers (producers). In the limit of perfectly inelastic demand (supply), consumers (producers) bear the entire burden of the tax.
4. *Principle:* The impact equals the incidence of the tax (i.e., the tax revenues equal the burden of the tax) if:
 - a. The side of the market being taxed has a perfectly inelastic supply or demand curve. *Caveat:* If the tax is on the individual, then the compensated demand

(factor supply) curve must be perfectly inelastic for the impact to equal the incidence of the tax.

- b. A tax is a non-distorting lump-sum tax.
5. *Principle*: The side of the market that is taxed, the impact of the tax, is irrelevant to determining the incidence of the tax. Practical considerations may lead the government to tax one side or the other, however. For example, it is easier to take into account the personal characteristics of individuals under an income tax than under a value added tax.
6. *Concluding principle from the supply and demand analysis*: The market, not the government, determines the incidence of a tax.

The next section considers tax incidence in a *general equilibrium framework*. The partial equilibrium supply and demand analysis is useful for showing how price changes affect the incidence of the tax. A general equilibrium framework is ultimately necessary for determining the incidence of a tax because usually many prices change as a result of a tax and one has to consider what happens to the tax revenues. The section is organized around different assumptions regarding the *disposition of the tax revenues*.

7. *Balanced budget incidence*: considers the incidence of the entire government budget, both the taxes and the expenditures financed by the taxes (under the assumption that the budget balances). The advantage of this approach is its realism, but it has the disadvantage of moving away from the question of the incidence of a single tax or a set of taxes. Also, the incidence of many public services such as nonexclusive goods is very difficult to determine.
8. *Principle*: If a tax is considered a benefits-received tax, then its incidence is not an issue. People are assumed to get what they pay for.
9. *Single tax incidence*: Harberger pioneered the approach of analyzing the incidence of a single tax by assuming that the government spends the tax revenue exactly as the individuals would have, which is equivalent to returning the tax revenue lump-sum to the individuals. (For taxes on business, the relevant individuals are the owners of the firm.)
10. Harberger's assumption equates tax burden with tax inefficiency, since the only burden to individuals if they receive the revenues back lump-sum is the deadweight loss from the tax.
11. *Principle*: Economists measure the incidence of a single tax in two ways using Harberger's method:
 - a. Equate the incidence of the tax with the deadweight loss from the tax; or
 - b. Note how relative prices change with the tax and lump-sum return and make heuristic statements about who gains or loses from the price changes. This was

Harberger's choice in his seminal study of the incidence of the corporation income tax, which is described in Chapter 19.

12. *Principle*: Harberger's method for the incidence of a single tax can be used only for distorting taxes, since returning a non-distorting tax lump-sum has no effect on anything. Therefore, assume that the tax revenues measure the burden of the tax for lump-sum taxes.
13. *Differential tax incidence*: measure the burden of switching from one tax to another while holding tax revenue constant. This is equivalent to employing Harberger's method for the incidence of a single tax twice: Levy the first tax and return the revenues lump sum and measure the burden of the tax, and then levy the second tax and return its revenues lump sum and measure the burden of the second tax, and note how the burdens differ under the two taxes.

The final section of the chapter develops some principles related to the incidence of general taxes.

14. A general tax has two properties:
 - a. If the tax is levied on one side of a market, then all agents on that side of the market are subject to the tax; and
 - b. If the tax is levied on a number of goods or factors, then all the goods or factors are taxed at the same rate.
15. *Principle*: If two taxes give rise to the same pattern of relative prices, then they have the same incidence. This is true by definition under the relative price measure of tax incidence. It is also true if tax incidence is equated to deadweight loss, since loss depends only on substitution effects resulting from the tax, and substitution effects depend only on changes in relative prices.
16. *Principle*: In a baseline model consisting of identical consumers, constant returns to scale production (no pure profits), perfect competition in all markets, and a single time period (no saving), the following principle holds – The incidence of a general *ad valorem* tax at rate t on one set of goods and factors can be duplicated by a general *ad valorem* tax at rate t^* on the remaining set of goods and factors, with $(1+t)(1+t^*) = 1$.
17. The principle on general taxes, combined with the principle that the side of the market taxed is irrelevant, implies that the following general taxes have the same incidence in the baseline model: a personal income tax, a personal expenditures (consumption) tax, a value added tax, and a general sales tax. For example, a 100% sales tax on all goods ($t = 1$) is equivalent to a 50% income tax on all factors ($t^* = -1/2$; a minus sign because income taxes lower the prices received by individuals below the market price paid by the firms).

18. The four general taxes do have different incidences in practice, but the *differences are in the details*, some of which are considered in Chapter 19. For example, Chapter 13 demonstrated in a 2-period model with saving that an income tax is equivalent to a personal expenditures (consumption) tax if the returns to saving are excluded from the income tax base.