

# Chapter Summaries

## Chapter 2: Market Failures

In order to understand how markets fail, the chapter begins by approaching the issue from the opposite direction, and asking how one would design a baseline market economy that works as well as it possibly can. A set of market assumptions and technical assumptions are required.

1. *The market assumptions* are those that generate a perfectly competitive economy. Every market would be characterized by: large numbers of buyers and sellers, homogeneous products from all the firms in an industry, no barriers to entry or exit in the long run (equal opportunity), and perfect information so that consumers and producers can confidently engage in exchange.
2. The three sets of *technical assumptions* are:
  - a. Consumers' preferences are well-behaved, meaning that they have a complete ordering of preferences over the goods and services, their preferences are transitive, and their marginal rates of substitution are diminishing the more one good is consumed.
  - b. Production is well-behaved in the sense that the firm's isoquants have the usual shape. In addition, production must be either constant or decreasing returns to scale. Increasing returns to scale – decreasing cost – is ruled out because it is incompatible with perfect competition.
  - c. There can be no externalities, in which consumption by some individual or production by some firm directly affects (alters) the utility function or production function of at least one other consumer or firm.
3. If all these market and technical assumptions hold, then the allocation of resources is efficient. A perfectly competitive economy operates on its utility possibilities frontier. This is the *First Fundamental Theorem of Welfare Economics*.
4. The *Second Fundamental Theory of Welfare Economics* is that all the feasible utility combinations on the utility possibilities frontier can be achieved by a perfectly

competitive economy with a suitable initial distribution of resources among the individuals.

The chapter then asks if there would be anything for the government to do in such an economy.

5. Richard Musgrave thought of the functions of government as occurring in three branches: the distribution branch, in charge of pursuing end-results and process equity; the allocation branch, in charge of correcting for any inefficiencies that arise; and the stabilization branch, in charge of pursuing macroeconomic policy goals such as full employment and price stability. The textbook is concerned only with the microeconomic functions of government, those under the direction of the distribution and allocation branches.
6. There would be nothing for the allocation branch to do in this economy because it would operate efficiently on the utility possibilities frontier. The only possible exception might be the need for a legal and judicial system to enforce contracts and define private property rights. Virtually everyone concedes that governments must do this, at very least.
7. The distribution branch would come into play, however, because society would have to make an end-results equity judgment: Is the distribution of income fair? If not, society has to make a collective decision about how to redistribute resources to reach a different point on the frontier, and the government would carry the policy out through some kind of tax and transfer program. The market takes the initial distribution of resources as a given; it does not redistribute. The need for making an end-results equity judgment is fundamental in the sense that it cannot reasonably be assumed away.  
The allocation branch comes into play because the market and technical assumptions underlying the well-functioning economy do not hold in practice. When they do not, the economy is driven below its utility possibilities frontier and action by the government is almost always required to bring the economy back to the frontier.

#### **VIOLATIONS OF THE TECHNICAL ASSUMPTIONS LEADING TO:**

8. Externalities – Many market transactions give rise to externalities, both harmful (e.g. pollution) and beneficial (e.g. a minimal level of education in a democratic society) third party effects. The example given was air pollution resulting from the production of paper. Left to its own devices, the market selects a supply and demand equilibrium that equates the marginal value of paper to consumers with the private

marginal cost to the firms of producing paper. The efficient equilibrium is the one that equates the consumers' marginal value of paper to the full social marginal cost of producing paper, equal to the firms' private marginal cost plus the sum of the marginal damages to all parties affected by the pollution.

9. Nonexclusive public goods – A nonexclusive good, such as national defense or national security, has the property that if anyone buys the good, everyone automatically consumes the full services of the good whether they want to or not. These goods would lead to a free-rider problem if they were marketed – everyone waits for one person to buy the good so that no one buys it. The government has to provide nonexclusive goods.

## VIOLATIONS OF THE MARKET ASSUMPTIONS:

10. Decreasing costs/economies of scale – Production is often characterized by substantial economies of scale or decreasing costs at the level of the firm. At its worst, a single firm's average cost curve declines all the way to market demand. This is called a natural monopoly, since a single producer should supply the market to save on resource costs. The producer must then be regulated or the government must take over the provision of the service to ensure that it operates efficiently. Natural monopolies are characterized by high set up costs and relatively low operating costs. There are many important examples: the electric, water, and sewage public utilities; recreational facilities such as parks and beaches; transportation, such as highways, bridges, tunnels, and mass (rail) transit; TV and radio broadcasting and other forms of telecommunications; and software, a truly global natural monopoly.
11. Private or asymmetric information, in which individuals or firms have information about themselves that others, including the government, cannot know, or cannot know without undertaking considerable effort and costs to find out. Private information has three implications for governments.
  - a. It leads to many kinds of market failures that require government intervention. Examples include: Bureaus of Weights and Measures and agencies such as the Federal Drug Administration that test and monitor products to certify that the claims firms make about their products are true; and markets for many kinds of insurance, such as unemployment insurance and medical insurance. In insurance markets, private information leads to moral hazard, in which the insured can increase the probability that the event being insured against occurs, unbeknownst to the insurance company, and to adverse selection, in which the insurance company is forced to set one premium for everyone when it cannot distinguish

- who among the insured are the more risky and less risky. Firms are reluctant to provide insurance if they can be victimized by moral hazard and adverse selection.
- b. Private information strains the ideal of the government acting as an agent on behalf of the people, since people often have an incentive to use their private information to conceal important information from the government. Examples include people not declaring some income under an income tax that they know is taxable, or hiding income so that they become eligible for transfer programs that are not meant for them. The attempt to preserve the government as agent ideal is called the mechanism design problem, in which the goal is to design mechanisms or policies such that the utility-maximizing behavior for individuals is to tell the truth about themselves. Most truth-revealing mechanisms designed by economists to date are either unrealistic or they involve an uncomfortable amount of coercion to force people to participate.
  - c. Private information can be viewed as the ultimate source of all allocation activity, because if people had perfect information they would use any and all methods to move back to the frontier. Any point under the utility possibilities frontier is dominated by points on the frontier such that everyone is better off, and the assumption of rational behavior is that people pursue all opportunities that make them better off.
12. Table 2.1 shows that U.S. federal, state, and local governments are clearly responding to the kinds of market failures described in the chapter.

The chapter closes with brief discussions of the theory of taxation and the theory of fiscal federalism.

13. *The Theory of Taxation* – The design of taxes is clearly part of a society’s pursuit of end-results equity because the necessary redistributions to achieve equity are made through taxes and transfer payments. The goal of efficiency in taxation takes on a negative slant since taxes invariably introduce inefficiencies into markets. Therefore the goal is to raise a given amount of tax revenue with the minimum amount of efficiency loss. There is often a trade-off between equity and efficiency in taxation.
14. *The Theory of Fiscal Federalism* – A federalism system of governments leads to two sorting problems: how to assign the functions of governments to the various levels of governments in the fiscal hierarchy and how people should sort themselves among the various state and local governments when choosing where to live. The assignment of functions is important to prevent governments from working at cross-purposes with one another. Charles Tiebout thought the ability of people to move to find localities with more desirable tax and expenditure packages would prevent the free rider problem with nonexclusive goods by allowing people to vote with their feet, and that this would also lead to better matches between publicly supplied goods

and people's preferences. Unfortunately, economists have discovered that the movement of people (and capital) across jurisdictions itself gives rise to new sources of inefficiencies in an economy.

15. *Grants-in-aid* from higher to lower level governments in the fiscal hierarchy are an important fiscal device in most countries.