

Young, Michael W. (2004). *Malinowski: Odyssey of an Anthropologist, 1884–1920*. New Haven, CT: Yale University Press.

MARKET FAILURE

Market failure theories underlie most economic arguments for government intervention in the economy. When markets operate in accordance with standard economic assumptions, no person can be made better off except by making someone else worse off. The range of government activity in such a world consequently is constrained. However, when markets fail to operate in accordance with the standard model, government policy may improve economic outcomes by ameliorating the market failure.

Efficient Markets: The First and Second Welfare Theorems

Economists define market failure against a theoretical, ideally operating economy. When individuals are free to trade in a competitive marketplace where no externalities in production or consumption exist, the resulting distribution of resources in the economy is Pareto efficient: no person can be made better off without making some other person worse off. At this equilibrium, the price system has coordinated the activities of all market participants such that all resources have moved to their most highly valued uses. Work by Kenneth Arrow, Gerald Debreu, and Francis Bator in the 1950s provided formal proof of the conditions under which market equilibrium is Pareto efficient: the first fundamental theorem of welfare economics.

The first welfare theorem refers only to the efficiency of the equilibrium; it says nothing about whether the resulting allocations are fair or just. However, many potential allocations satisfy Pareto efficiency. The second welfare theorem shows that any efficient equilibrium is achievable through the operation of competitive markets with redistribution of individual endowments or wealth. Consequently, if one deems the results of a market process inequitable, economists would argue that any correction should be implemented via changes

in endowments rather than through interventions in the workings of the price system. For example, if certain individuals were unable to afford decent housing, the second welfare theorem would suggest that the appropriate corrective measure, if someone desired it, is to increase those individuals' incomes (funded via a nondistortionary tax) rather than to provide targeted housing subsidies or impose price controls. Such policy would not work to correct any market failure; rather, it would work to select among efficient outcomes for reasons of equity.

When the conditions underlying the first welfare theorem fail to hold, we can expect market failure. Market failure consequently has a very precise meaning for economists, despite its often loose usage elsewhere: it requires a failure of the first welfare theorem rather than simple dissatisfaction with market outcomes.

When markets fail, government intervention may improve outcomes; however, one cannot guarantee such improvement. Economists define market failure relative to a norm of Pareto efficiency rather than in comparison with a potential policy intervention. For purposes of policy analysis, identification of market failure is not sufficient to require government intervention; rather, one should base policy intervention on sound comparative institutional analysis that balances the imperfections of markets and politics.

Ways Markets Fail: Competition, Externalities, and Public Goods

When markets are not competitive, market failure may result. A monopolist has an incentive to restrict output and raise price, creating deadweight losses. Where monopolists can engage in price discrimination, they reduce such losses. Antitrust policy works to mitigate losses due to lack of competition; however, the costs of such policy need careful weighing against potential benefits.

Externalities can also generate market failure. When an activity generates external costs, we expect that the market outcome will involve too much of the externality-generating activity when compared with a Pareto optimum; conversely, activities generating

external benefits will be underprovided. Externalities that do not result in resource misallocation cause no market failure. The losing bidder at an auction imposes a pecuniary externality on the winning bidder by forcing payment of a higher price; however, the loss to the buyer matches exactly the gain to the seller.

A public good produces external benefits and has the particular characteristic of being both nonrival in consumption and nonexcludable. Once the good is produced, it is impossible to prevent anyone from enjoying its benefits, and any one person's enjoyment of those benefits does not diminish the like enjoyment of any other person. Radio transmissions are a public good: once the signal transmits, any number of receivers can listen simultaneously without harming other users, and one cannot exclude others within the transmission range from listening. Because the good is nonexcludable, economists typically predict the good will not be produced at all since no one will incur the costs of production where those costs cannot be recouped. Moreover, because the good is nonrivalrous, the marginal cost of any additional user consuming the good is zero; any price charged that prevents someone from using the good would consequently be inefficient even if one could force the payment.

Ways Markets Fail: Information Asymmetry

Seminal work in the 1970s by Bruce Greenwald and Joseph Stiglitz demonstrated that when relevant information is dispersed asymmetrically across players in the economy, markets could fail to produce efficient outcomes. In moral hazard models, workers shirk, insurance consumers take too many risks, and borrowers default. Individuals take individually rational but externality-generating action after having agreed to an employment, insurance, loan, or other contract. In adverse selection models, information asymmetry causes market failure before the signing of contracts. Employers offer high salaries to induce better-quality workers to apply for the job, raising overall wages and inducing inefficient equilibrium unemployment. Risk lovers purchase insurance, driving up prices and forcing risk-averse individuals out of the market. High-risk

firms bid up the loan interest rate, keeping less risky firms out of the borrowing market. Parties may work to mitigate moral hazard or adverse selection problems, but solutions will remain inefficient relative to the first best, where all agents have the same information. While examples here focus on employment, insurance, and credit markets, Greenwald and Stiglitz show asymmetric information to be a pervasive cause of market failure.

Mitigating Failure

When markets fail, potential gains from trade exist but remain unrealized due to some imperfection in the market. Any firm able to find even a partial solution to the market failure can reap large profits by doing so. A strict application of public goods theory might suggest that radio transmissions will not develop, but firms quickly learned that the combination of advertising and public broadcast works well. In other cases, government action proves the best remedy to market failure. Comparative institutional analysis weighing the losses due to both market and governmental imperfections should precede policy intervention seeking to remedy market failure.

Ronald Coase demonstrated that where property rights are well defined, parties could efficiently bargain to solve externality problems. If engaging in the externality-generating activity is efficient, the party engaging in the activity either can have the right to do so or can pay those adversely affected and buy from them the right to engage in the activity. If it is inefficient, the party will not be able to afford to compensate the offended parties if they have the right to stop the activity, or the transgressed parties will pay the individual to cease the activity if that individual otherwise has the right to do it. High transaction costs may prevent some such bargains. A person driving a polluting car would have a difficult time finding all the people who might be affected by the car's emissions. Government regulation or taxation of negative externalities is more likely to be the efficient solution when the number of parties to the transaction is high or where property rights cannot readily be assigned. Many economists have suggested that a Pigouvian tax

on carbon emissions may be the most efficient solution to global warming, for instance.

Public goods problems can be solved privately if a private tied good can be found (as in the radio example), if any party would derive private benefits from creating the public goods in excess of the costs of producing the good, or if technology can be developed to render the good excludable. Scrambling television signals can exclude those who do not pay a subscription fee. The marginal cost of providing the signal to an additional user is zero, so the subscription price is inefficiently high relative to a theoretical ideal, but where the alternative is that no one provides the good at all, the efficiency losses are comparatively small. Government can more efficiently provide other public goods, like national defense.

Similarly, when asymmetric information prevents buyers and sellers from interacting, one can earn profits by bridging the gap between the parties and facilitating trade. George Akerlof's "lemon" model of the used-car market predicts that only poor-quality used cars will sell when buyers cannot verify the quality of used cars. By contrast, an extensive market in used cars exists where reputable agents test and certify vehicle quality. Credit reporting agencies sell lenders information on borrower default risk.

Identifying appropriate legislative or regulatory solutions to market failures caused by asymmetric information is difficult. The same informational problems that cause market failure in the first place also make it more difficult for government agents to improve outcomes.

—Eric Crampton

See also Coase Theorem; Economics, Law and; Efficiency; Externalities and Social Costs; Information; Markets; Resource Allocation; Utility Maximization

Further Readings

- Akerlof, George. (1970). "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism." *Quarterly Journal of Economics* 84: 488–500.
- Arrow, Kenneth, and Gerald Debreu. (1954). "Existence of an Equilibrium for a Competitive Economy." *Econometrica* 22: 265–90.

Bator, Francis. (1958). "The Anatomy of Market Failure."

Quarterly Journal of Economics 72: 351–79.

Coase, Ronald. (1960). "The Problem of Social Cost."

Journal of Law and Economics 3: 1–44.

Greenwald, Bruce, and Joseph Stiglitz. (1986). "Externalities in Economies with Imperfect Information and Incomplete Markets." *Quarterly Journal of Economics* 101: 229–64.

MARKETS

Historically, markets were places where numerous sellers and buyers met to exchange goods against payment of a quid pro quo. This implied the physical presence in the marketplace of the parties to a sales transaction as well as of the goods sold. Such markets are in existence still today. Due to the development of transportation and communication technologies, however, markets are no longer necessarily attached to specific places. They no longer require the physical presence of the market participants, and they are no longer limited to exchange transactions involving goods.

Present day markets are delocalized in nature. The parties to an exchange transaction may contact each other by using modern means of telecommunication (the Internet) and the market transaction's subject matter is no longer limited to physical products (goods) but may also include any kind of intangible product (such as services) as well as factors of production (such as capital and labor). All of these may be moved with relative ease from one place to another, even across national borders if necessary; and payment of the quid pro quo may be effected by means of a worldwide banking network that offers its services. Consequently, one may define markets today in much more abstract terms as virtual places where there is a meeting of supply and demand as well as a meeting of the minds of the parties, based on offer and acceptance, related to the market transactions.

Even though this notion of markets is theoretically devoid of any geographical considerations, in practice the territorial scope of markets may still be limited. The geographical extension of markets depends on the transaction costs as well as on the particular transportation