

Pareto Efficiency

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Imagine you and a friend are walking down the street and a \$100 bill magically appears. You would likely share the money evenly, each taking \$50, deeming this the fairest division. According to Pareto efficiency, however, any allocation of the \$100 would be optimal — including the distribution you would likely prefer: keeping all \$100 for yourself.

Pareto efficiency says that an allocation is efficient if an action makes some individual better off and no individual worse off. The concept was developed by Vilfredo Pareto, an Italian economist and sociologist known for his application of mathematics to economic analysis, and particularly for his *Manual of Political Economy* (1906).

Pareto used this work to develop his theory of pure economics, analyze “ophelimity,” his own term indicating the power of giving satisfaction, and introduce indifference curves. In doing so, he laid the foundation of modern welfare economics.

Because the two individuals in the opening example will not lose any of the money they originally held, they cannot end up worse off than they started. Any additional amount of money that they receive will make them better off. If one individual keeps all \$100, the other will be as well off as he was before the money appeared. Whether the money is split evenly or one individual keeps more than the other, Pareto efficiency is achieved.

Consider another example: the sale of a used car. The seller may value the car at \$10,000, while the buyer is willing to pay \$15,000 for it. A deal in which the car is sold for \$12,500 would be Pareto efficient because both the seller and the buyer are better off as a result of the trade. In this case, they are better off by the same amount: \$2,500. However, any price between \$10,000 and \$15,000 is Pareto efficient because the seller receives more value in money than the value he places on the car, and the buyer values the car more than the money he pays for it.

Pareto efficiency has applications in game theory, multicriteria decisionmaking, engineering, and many of the social sciences. It is a central principle in economics.

In general, an economic allocation problem has several possible Pareto efficient outcomes. In the marketplace, the

competitive equilibrium is typically included among them. A major drawback of Pareto efficiency, some ethicists claim, is that it does not suggest which of the Pareto efficient outcomes is best.

Furthermore, the concept does not require an equitable distribution of wealth, nor does it necessarily suggest taking remedial steps to correct for existing inequality. If the incomes of the wealthy increase while the incomes of everyone else remain stable, such a change is Pareto efficient.

Martin Feldstein, an economist at Harvard University and president of the National Bureau of Economic Research, explains that some see this as unfair. Such critics, while conceding that the outcome is Pareto efficient, might complain: “I don’t have fewer material goods, but I have the extra pain of living in a more unequal world.” In short, they are concerned about not only a person’s absolute position but also his relative position, and argue that, as a result, Paretian analysis has little to offer.

Feldstein rejects this argument and maintains that Pareto efficiency is a good guiding principle for economists, even if some actions that promote Pareto efficiency lead to increases in income inequality. Instead, Feldstein argues that we should focus on poverty, and to do this

we should not stifle changes that would increase the total economic pie just because they would also produce outcomes that would initially increase inequality.

In general, rich societies can more effectively deal with such problems than poor ones. For instance, would you rather live in a country that has almost perfect income equality but is desperately poor or one that has quite a bit of income inequality but is rich enough to help out its most unfortunate citizens? Most people would choose the latter.

That said, Pareto efficiency may not be the only benchmark that a society may wish to use in choosing between alternative public policies. It can be a very helpful guide — and, indeed, has enriched economic analysis a great deal — but as Pareto himself wrote, “Political economy does not have to take morality into account. But one who extols some practical measure ought to take into account not only the economic consequences, but also the moral, religious, political, etc., consequences.”

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