

## **Baumol, William J.**

William Baumol was born February 26, 1922 in New York City. After receiving his BSc from the College of the City of New York in 1942, he undertook graduate study at the London School of Economics, earning his PhD in 1949. He taught at Princeton University for 43 years, where he is now Professor Emeritus and Senior Research Economist. He has also taught at New York University for over 36 years, where he currently holds the Harold Price Professorship of Entrepreneurship in the Stern School of Business. Professor Baumol is the author of more than 40 scholarly books, and has written over 500 articles published in peer-reviewed journals as well as the popular media. Among his many honors and awards, he was elected Fellow of the Econometric Society in 1953, Fellow of the American Academy of Arts and Sciences in 1971, and Distinguished Fellow of the American Economic Association in 1982.

Baumol's research in economics has covered diverse areas of the discipline, including, among others: entrepreneurship and innovation, economic growth, industrial organization, and antitrust economics and regulation. His seminal contributions include a model of the transactions demand for money, the sales-revenue maximization model, an analysis of cost disease, the theory of contestable markets and the concept of super-fairness. Most recently, Baumol has focused on entrepreneurship and innovation, *The Economist* magazine remarking that, "...Thanks to Mr. Baumol's own painstaking efforts, economists now have a bit more room for entrepreneurs in their theories..." (March 9, 2006)

In the field of environmental economics, Professor Baumol is best known for his textbook on the theory of environmental policy, co-authored with Wallace Oates (Baumol and Oates, 1988). First published in 1975, this book has become a standard reference in many graduate-level classes in environmental economics due to its comprehensive coverage of both the theory

of externalities and the design of environmental policy, with chapters on topics such as imperfect competition and externalities, optimal pricing of exhaustible resources, marketable emissions permits and international environmental issues.

Specifically, Chapter 8 of the book, drawing on his joint work with David Bradford (Baumol and Bradford, 1972) concerns Professor Baumol's major contribution to environmental economics – understanding the relationship between externalities and the technical concept of non-convexities in production sets. If an industry imposes a large enough negative externality on another industry, the normal conditions for maximizing social welfare break down due to the fact that the production set becomes non-convex, i.e., the production possibilities frontier is no longer concave in shape. Instead of the normal unique equilibrium where market-clearing prices ensure that a concave production possibilities frontier is tangent to a convex community indifference curve, there are potentially many local equilibrium outcomes in the presence of externalities. In such a setting, market processes may not result in a socially optimal outcome, instead the point at which an economy ends up will have to be chosen collectively. As a consequence, Pigouvian taxes, designed to internalize the social costs of an externality, may actually move the economy away from a social optimum.

*Ian Sheldon*

**See Also:** Externality; Oates, Wallace; Pigouvian Tax; Welfare

**References:**

- Baumol, W.J. and Bradford, D.F. 1972. "Detrimental Externalities and Non-Convexity of the Production Set," *Economica* XXXIX: 160-176.
- Baumol, W.J. and Oates, W.E. 1988. *The Theory of Environmental Policy*, Cambridge: Cambridge University Press (second edition).