

## **APPENDIX**

**Table 1—Introductory Economics Textbooks\***

<b>Author</b>	<b>Book</b>	<b>Pigouvian Tools</b>	<b>Negative Externalities</b>	<b>Pigouvian Reasoning</b>	<b>Policy Proposals</b>	<b>Explicit Pigou References</b>
Samuelson, Paul A.	<i>Economics: An Introductory Analysis</i> (1948, 1955, 1961, 1964, 1970)	External diseconomies, marginal private and social costs	Factory smoke, smog in urban areas (cars and factories), sulfur dioxide, radioactivity due to nuclear bombs	MSC>MPC → prima facie, clear case for some form of government intervention	Taxes, subsidies, public control, coercive ordinances	✓
Bach, George Leland	<i>Economics. An Introduction to Analysis and Policy</i> (1954, 1963)	Social vs. private costs, hidden costs, socially justifiable output, ideal resource allocation	Industrial smoke and dirt	MSC>MPC→ raises interesting issues as to government intervention		
McConnell, Campbell R.	<i>Elementary Economics: Principles, Problems and Policies</i> (1960, 1966, 1969)	Social vs. private costs, misallocation of resources, optimal output	Air (smoke and dust) and water pollution, increased risk of explosions	MSC>MPC →justifiable penalties (guilty polluters)	Plausible policies: prohibition, taxes, and subsidies; all subject to Pigouvian qualifications	
Abbott, Lawrence	<i>Economics and the Modern World</i> (1960, 1967)	Social vs. Private Costs, misallocation of resources	Factory smoke and Soot	MSC>MPC→ The government should intervene	Smoke tax, unspecified other methods	

Alchian, Armen A. and Allen, William R.	<i>University Economics</i> (1964)	Social vs. private costs, externality	Factory smoke, ashes, soot, airborne acids, smog	$MSC > MPC \rightarrow$ no definitive conclusion	Government action may inflict more harm than good.	
Ferguson, Charles and Krep, Juanita	<i>Principles of Economics</i> (1965)	Marginal social vs. private costs, external diseconomies, maximum social welfare	Industrial oil or coal smoke, smog	$MSC > MPC \rightarrow$ no conclusion regarding policy		
Lipsey, Richard C. and Steiner, Peter O.	<i>Economics</i> (1966)	Social vs. private costs, resource misallocation	Smog, water pollution	If $MSC > MPC \rightarrow$ government intervention (if discrepancy large)	State regulation, operation, ownership, or control	
Reynolds, Lloyd	<i>Economics: A General Introduction</i> (1966)	Social vs. private costs, efficient resource allocation	Air and water pollution, traffic congestion	$MSC \neq MPC \rightarrow$ can often be resolved by government action	Compulsory education, health regulation, tolls and parking costs equal to externality	

\* Parenthetical dates in column two refer to the dates of textbook editions.

**Table 2—Environmental Economics Texts\***

<b>Author</b>	<b>Book</b>	<b>Pigouvian Tools</b>	<b>Negative Externalities</b>	<b>Pigouvian Reasoning</b>	<b>Policy Proposals</b>	<b>Explicit Pigou References</b>
Krutilla, John V. and Eckstein, Otto	<i>Multiple Purpose River Development</i> (1958)	Marginal private and social product, social marginal productivity, negative externalities, inefficient resource allocation	Smoke and gas emissions, water pollution	MPP>MSP→ opportunity to equalize the two	Non-market devices through collective action; mindful of the social cost of public funds	
Kneese, Allen V.	<i>The Economics of Regional Water Quality Management</i> (1964)	External (technological) diseconomies, private vs. social costs, inefficient resource allocation	Water pollution, smoke nuisance, aesthetic pollution	SC>PC→ Alternative public interventions in important cases	Coasean solutions (limited usefulness), effluent charges, subsidies, quality standards (assuming the cost of public intervention < its benefit); predisposition toward a system of charges	
Jarett, Henry (ed.) [Kenneth Boulding; Ralph Turvey]	<i>Environmental Quality in a Growing Economy</i> (1966)	External diseconomies; economic welfare; price system failure (Boulding); market failure; social vs. private costs; external diseconomy; efficient resource allocation (Turvey)	Atmospheric pollution; pollution of lakes and oceans (Boulding); overfishing; traffic congestion; noise, water, and air pollution (Turvey)	Market failure→ “need” for special legislation (Boulding); additional mechanisms “may” be used to improve resource allocation (Turvey)	Tort law (ineffective for widespread social damages affecting each individual by a small amount), special corrective tax legislation. mindful of equity considerations (Boulding); regulation, contractual arrangements, legal action, per unit/time nuisance taxes; policy choice dependent on case-by-case analyses of merits, mindful of equity considerations and political feasibility (Turvey)	

Wolozin, Harold (ed.) [Edwin Mills]	<i>The Economics of Air Pollution. A Symposium</i> (1966)	External diseconomies, misallocation of resources, market failure (Mills)	Smoke, air pollution caused by automobiles (Mills)	Externalities call for flexibility in the choice of remedies (Mills)	Regulation, subsidies, charges/fees/taxes (strong presumption in favor of the latter)	
Kneese, Allen V. and Bower, Blair T.	<i>Managing Water Quality: Economics, Technology, Institutions</i> (1968)	External diseconomies, externalities, inefficient resource allocation	Water and Air Pollution	When $SC > PC \rightarrow$ alternative ways of addressing externalities	Coasean solutions (substantially inefficient), basin-wide firm (unworkable), subsidies, effluent charges (bias in favor of charges), quality standards	
Freeman, A. Murck III; Haverman, Robert H.; and Kneese, Allen V.	<i>The Economics of Environmental Policy</i> (1973)	Economic welfare, social vs. private values, market failure, inefficient resource allocation, ideal output	Water pollution, smog, soot, congestion	When $MSC > MPC \rightarrow$ alternative ways of addressing externalities	Coasean solutions, standards, regulation, smog tax, per pound sulfur tax a la Rand Corporation	
Baumol, William J. and Oates, Wallace E.	<i>Economics, Environmental Policy, and the Quality of Life</i> (1979)	Incidental injuries, externality, market failure, private and social costs	Air pollution (a variety of GHGs, fumes, smog), noxious water pollutants	Externalities $\rightarrow$ a wide range of policy instruments	Moral suasion, direct controls, market solutions (taxes, subsidies, auctioned permits, refunds, property rights assignment). Policy choice to be determined on a case-by-case basis. Mindful of measurement, distributive, administrative, political, and public awareness dimensions.	✓

\* Parenthetical dates in column two refer to the dates of textbook editions.

**Table 3—Urban Economics Textbooks\***

<b>Author</b>	<b>Book</b>	<b>Pigouvian Tools</b>	<b>Negative Externalities</b>	<b>Pigouvian Reasoning</b>	<b>Policy Proposals</b>	<b>Explicit Pigou References</b>
Thompson, Wilbur	<i>A Preface to Urban Economics</i> (1965)	Private vs. social costs, external diseconomies	Traffic congestion due to cars, dirt, noise, odors, delays	SC>PC→ estimate these costs	Enlarge the local government to do social cost pricing by assigning user charges roughly equal to the externality	
Perloff, Harvey S. and Wingo, Lowdon Jr. (eds) [Alan Campbell and Jesse Burkhead]	<i>Issues in Urban Economics</i> (1968)	Private vs. social costs, externalities (Campbell and Burkhead)	Congestion, accidents, and air pollution due to automobiles (Campbell and Burkhead)	SC>PC→ externalities need to be addressed.		✓
Netzer, Dick	<i>Economics and Urban Problems. Diagnoses and Prescriptions</i> (1970)	External costs, market failure	Air pollution due to cars, water pollution, noise, congestion	SC>PC→ local, state, and federal government must try to internalize important externalities	Prohibition, Regulation, standards, subsidies, charges on waste	
Richardson, Harry W.	<i>Urban Economics</i> (1971)	Externalities, diseconomies, misallocation of resources, (marginal) private and social costs	Water pollution, congestion (noise, lost time, accidents, discomfort to residents and pedestrians, air pollution)	MSC→ a variety of policy alternatives	Do nothing (politically unacceptable), prohibition, road (shadow) pricing equal to MSC (the case for this is very strong); measurement problems	

Mills, Edwin S.	<i>Urban Economics</i> (1972)	External diseconomies, misallocation of resources, Long run marginal cost (inclusive of external costs), social costs	Air, water, and solid waste pollution;	LRM(S)C>P → Policy subject to the proviso that MB of abatement> MC of abatement	Regulation, legal proceedings (poor solution); material disposal tax (on all types of discharge); congestion tax	
Hirsch, Werner Z.	<i>Urban Economic Analysis</i> (1973)	External effects, social and private net products, allocative efficiency	Congestion, pollution (air, water, noise), smog, economic instability	MSC>MPC→ often justify government action	State ownership, regulation (standards), taxes (polluter's fees), subsidies, zoning; measurement of social costs necessary for determining charges.	✓
Button, K.J.	<i>Urban Economics: Theory and Policy</i> (1976)	Negative externalities, optimal allocation of resources, marginal private and social costs	Air pollution due to transportation (noise, vibration, dirt, loss of sunlight, accidents, and congestion)	MSC>MPC→ policy can create a shadow price for externalities	Standards, taxes (more efficient than subsidies); mindful of distributive, administrative, and measurement problems.	✓

\* Parenthetical dates in column two refer to the dates of textbook editions.

**Table 4—Public Finance Textbooks\***

<b>Author</b>	<b>Book</b>	<b>Pigouvian Tools</b>	<b>Negative Externalities</b>	<b>Pigouvian Reasoning</b>	<b>Policy Proposals</b>	<b>Explicit Pigou References</b>
Musgrave, Richard A.	<i>The Theory of Public Finance. A Study in Public Economy</i> (1959)	Private and social products, social costs, optimal (efficient) allocation of resources, market failure, external diseconomies;	Factory air pollution, smoke nuisance	$MSNP \neq MNP \rightarrow$ corrective action may be desirable and feasible in some cases; alternative techniques are possible	Controls, tax-subsidy schemes; the choice of technique determined by economic, political, social, and cultural variables.	✓
Buchanan, James M.	<i>The Public Finances: An Introductory Textbook</i> (1960, 1965)	Social cost, inefficient allocation of road services	Traffic congestion	State action for solving congestion	Variable user taxes as prices (simplest, most consistent with freedom of choice), controls, license/registration fees	
Due, John F.	<i>Government Finance. An Economic Analysis</i> (1963, 1968)	Marginal social and private costs, external diseconomies, economic welfare, optimum resource allocation	Liquor consumption, air and water pollution, increasing cost industries	$MSC > MPC \rightarrow$ government intervention may be used	Per unit tax may be effective, prohibition, regulation, public production	✓



Eckstein, Otto	<i>Public Finance</i> (1964, 1973)	Market failure, external diseconomies, social vs. private costs, optimal market results	Water pollution	$SC \neq PC \rightarrow$ If the discrepancy large enough, it may fall in government territory	Regulation or taxes	✓
Herber, Bernard P.	<i>Modern Public Finance</i> (1967)	External diseconomies, externalities, social vs. private costs, optimal allocation of resources	Air pollution, traffic congestion	$SC > PC \rightarrow$ governments must play a role to achieve optimal allocation		✓
Musgrave Richard A. and Musgrave, Peggy B.	<i>Public Finance in Theory and Practice</i> (1973)	External costs, social vs. private costs, inefficient resource allocation, optimal output	Air pollution (factory smoke and odor, automobile and household pollution), water pollution, traffic congestion	$MSC > MPC \rightarrow$ policy warranted if the number of parties large	Coasean solutions (unworkable with large number of victims), per unit tax, subsidies; mindful of measurement and administrative problems	✓

\* Parenthetical dates in column two refer to the dates of textbook editions.

**Table 5—Authors’ Degrees and Institutions**

Author	Undergraduate Degree Institution (Year)	Master’s Degree Institution (Year)	Ph.D. Degree Institution (Year)
Abbott, Lawrence	Harvard University (1924)	Columbia University (1945)	Columbia University (1951)
Alchian, Armen A.	Stanford University (1936)		Stanford University (1943)
Allen, William R.	Cornell College (1948)		Duke University (1953)
Bach, George Leland	Cornell University (1936)		University of Chicago (1940)
Baumol, William J.	City University of New York (1942)	Graduate work at the University of Wisconsin	London School of Economics (1949)
Boulding, Kenneth	Oxford University (1931)	Postgraduate work at Chicago and Harvard (1930s)	
Bower, Blair T.			
Buchanan, James M.	Middle Tennessee State Teachers College (1940)	University of Tennessee (1941)	University of Chicago (1948)
Burkhead, Jesse			
Button, Kenneth J.	University of East Anglia (1970)	University of Leeds (1971)	Loughborough University (1981)
Campbell, Alan K.	Whitman College (1947)	Wayne University (1949) Harvard University (1950)	Harvard university (1952)
Due, John F.			University of California (1938)
Eckstein, Otto	Princeton (1951)	Harvard (1952)	Harvard University (1955)
Herber, Bernard P.	Loyola Marymount University-Los Angeles (1954)		University of Washington (1960)

Ferguson, Charles	Hendrix College (1949)	University of North Carolina (1951)	University of North Carolina (1957)
Freeman, Myrick A. III	Cornell University (1957)	University of Washington (1964)	University of Washington (1965)
Haverman, Robert H.	Calvin College (NA)		Vanderbilt University (1963)
Hirsch, Werner Z.	Hebrew University of Jerusalem and University of California—Berkeley (1947)		University of California—Berkeley (1949)
Jarrett, Henry			
Kneese, Allen V.	South West Texas State College (1951)	University of Colorado (1953)	Indiana University (1956)
Kreps, Juanita	Berea College (1942)	Duke University (1944)	Duke University (1948)
Krutilla, John V.	Reed College (1949)	Harvard University (1951)	Harvard University (1952)
Lipsey, Richard	University of British Columbia (1951)	University of Toronto (1953)	London School of Economics (1956)
McConnell, Campbell R.	Cornell College (1950)	University of Illinois (1951)	University of Iowa (1953)
Mills, Edwin	Brown University (1951)		University of Birmingham (1956)
Musgrave, Peggy B.	University of Cambridge (1944) and American University (1960)	American University (1960)	Johns Hopkins (1962)
Musgrave, Richard A.	Heidelberg University (1933)	Harvard University (1936)	Harvard University (1937)
Netzer, Richard	University of Wisconsin (1946)	Harvard University (1948)	Harvard University (1952)
Oates, Wallace E.	Stanford University (1958)		Stanford University (1965)

Perloff, Harvey S.	University of Pennsylvania (1933?)		Harvard University (1940)
Reynolds, Lloyd	University of Alberta (1931)	McGill University (1933)	Harvard University (1936)
Richardson, Harry W.**	Manchester University (1959)	Manchester University (1961)	
Samuelson, Paul A.	University of Chicago (1935)	Harvard University (1936)	Harvard University (1941)
Steiner, Peter O.	Oberlin College (1943)		Harvard University (1950)
Thompson, Wilbur R.			
Turvey, Ralph	London School of Economics (1947)	Uppsala University (Post-Graduate work 1947-48)	London School of Economics (DSc, 1971)
Wingo, Lowdon Jr.			
Wolozin, Harold	Tufts (1942)		Columbia University (1955)

\*Parenthetical dates refer to years of graduation (or in some cases, study).

\*\* We are grateful to Emeritus Professor James E. Moore, II, at the University of Southern California for information on Richardson.