References

Acton, J. and I. Vogelsang, 1989, "Introduction," Symposium on Price Cap Regulation, *Rand Journal of Economics*, Vol. 20, No. 3, pp. 369–372.

Averch, H., and L. Johnson, 1962, "Behavior of the Firm Under Regulatory Constraint," *American Economic Review*, Vol. 52, No. 5, pp. 1053–1069.

Bailey, E., 1973, *Economic Theory of Regulatory Constraint*, Lexington Books, Lexington, MA.

Bailey, E., and R. Coleman, 1971, "The Effect of Lagged Regulation in the Averch-Johnson Model," *Bell Journal of Economics and Management Science*, Vol. 2, No. 1, pp. 278–292.

Bailey, E., and J. Malone, 1970, "Resource Allocation and the Regulated Firm," *Bell Journal of Economics and Management Science*, Vol. 1, No. 1, pp. 129–142.

Baron, D., and D. Besanko, 1984, "Regulation, Asymmetric Information, and Auditing," *Rand Journal of Economics*, Vol. 15, No. 4, pp. 447–470.

Baron, D., and R. Myerson, 1982, "Regulating a Monopolist with Unknown Costs," *Econometrica*, Vol. 50, No. 4, pp. 911–930.

Baumol, W., 1982, "Contestable Markets: An Uprising in the Theory of Industry Structure," *American Economic Review*, Vol. 72, No. 1, pp. 1–15.

Baumol, W., E. Bailey, and R. Willig, 1977, "Weak Invisible Hand Theorems on the Sustainability of Multiproduct Natural Monopoly," *American Economic Review*, Vol. 67, No. 3, pp. 350–365.

Baumol, W., and D. Bradford, 1970, "Optimal Departures from Marginal Cost Pricing," *American Economic Review*, Vol. 60, No. 3, pp. 265–283.

Baumol, W., and A. Klevorick, 1970, "Input Choices and Rate-of-Return Regulation: An Overview of the Discussion," *Bell Journal of Economics and Management Science*, Vol. 1, No. 1, pp. 162–190.

Baumol, W., J. Panzar, and R. Willig, 1982, *Contestable Markets and the Theory of Industry Structure*, Harcourt Brace Jovanovich, San Diego.

Bawa, V., and D. Sibley, 1980, "Dynamic Behavior of A Firm Subject to Stochastic Regulatory Review," *International Economic Review*, Vol. 21, No. 3, pp. 627–642.

Boiteux, M., 1960, "Peak-Load Pricing," *Journal of Business*, Vol. 33, No. 2, pp. 157–179.

Brennan, T., 1989, "Regulating by Capping Prices," *Journal of Regulatory Economics*, Vol. 1, No. 2, pp. 133–147.

Cabral, L., and M. Riordan, 1989, "Incentives for Cost Reduction Under Price Cap Regulation," *Journal of Regulatory Economics*, Vol. 1, No. 2, pp. 93–102.

Coase, R., 1946, "The Marginal Cost Controversy," *Economica*, Vol. 13, pp. 169–189.

Courville, L., 1974, "Regulation and Efficiency in the Electric Utility Industry," *Bell Journal of Economics and Management Science*, Vol. 5, No. 1, pp. 53–74.

Das, S., 1980, "On the Effect of Rate of Return Regulation under Uncertainty," *American Economic Review*, Vol. 70, No. 3, pp. 456–460.

Davis, E., 1973, "A Dynamic Model of the Regulated Firm with a Price Adjustment Mechanism," *Bell Journal of Economics and Management Science*, Vol. 4, No. 1, pp. 270–282.

Demsetz, H., 1968, "Why Regulate Utilities?" *Journal of Law and Economics*, Vol. 11, No. 1, pp. 55–65.

Dreze, J., 1964, "Some Postwar Contributions of French Economists to Theory and Public Policy, with Special Emphasis on Problems of Resource Allocation," *American Economic Review*, June, Vol. LIV, No. 4, Supplement, Part 2.

Faulhaber, G., 1975, "Cross-Subsidization: Pricing in Public Enterprises," *American Economic Review*, Vol. 65, No. 5, pp. 966–977.

Finsinger, J., and I. Vogelsang, 1981, "Alternative Institutional Frameworks for Price Incentive Mechanisms," *Kyklos*, Vol. 34, pp. 388–404.

Finsinger, J., and I. Vogelsang, 1982, "Performance Indices for Public Enterprises," in L. P. Jones et al., eds., *Public Enterprise in Less-Developed Countries*, Cambridge University Press, Cambridge.

Finsinger, J., and I. Vogelsang, 1985, "Strategic Management Behavior under Reward Structures in a Planned Economy," *Quarterly Journal of Economics*, Vol. C, No. 1, pp. 263–269.

Heyman, D., J. Lazorchak, D. Sibley, and W. Taylor, 1987, "An Analysis of Tapered Access Charges for End Users," Bell Communications Research, Economics Discussion Paper #31.

Hobson, M., and R. Spady, 1987, "Demand for Local Telephone Service un-

der Optional Local Measured Service," Technical Memorandum, Bell Communications Research.

Houthakker, H., 1958, "Electricity Tariffs in Theory and Practice," *Economic Journal*, Vol. 61, No. 1, pp. 1–25.

Kafoglis, M., 1969, "Output of the Restrained Firm," *American Economic Review*, Vol. 59, No. 4, pp. 553–559.

Keeler, T., and K. Small, 1977, "Optimal Peak-Load Pricing, Investment, and Service Levels on Urban Expressways," *Journal of Political Economy*, Vol. 85, No. 1, pp. 1–25.

Klevorick, A., 1973, "The Behavior of A Firm Subject to Stochastic Regulatory Review," *Bell Journal of Economics and Management Science*, Vol. 4, No. 1, pp. 57–88.

Kling, J., 1985, "Estimation of Local Exchange Elasticities," Report, Michigan Bell Telephone Service.

Kling, J., and S. van der Ploeg, 1989, "Estimating Local Telephone Call Elasticities with a Stochastic Model of Class of Service and Usage Choice," paper presented at the Seventh International Conference of the International Telecommunications Society, MIT.

Laffont, J.-J., and J. Tirole, 1986, "Using Cost Observation to Regulate Firms," *Journal of Political Economy*, Vol. 94, No. 3, pp. 614–641.

Lee, D., 1974, "Cost Components for Selected Public Transportation Modes in the San Francisco Bay Area," Institute of Urban and Regional Development, University of California, Berkeley.

Loeb, M., and W. Magat, 1979, "A Decentralized Method for Utility Regulation," *Journal of Law and Economics*, Vol. 22, pp. 399–404.

Logan, J., R. Masson, and R. Reynolds, 1989, "Efficient Regulation with Little Information: Reality in the Limit?" *International Economic Review*, Vol. 30, No. 4, pp. 851–862.

McFadden, D., 1975, "The Measurement of Urban Travel Demand," *Journal of Public Economics*, Vol. 3, pp. 303–328.

Merewitz, L., and R. Pozdena, 1974, "A Long-Run Cost Function for Rail Rapid Transit Properties," Working Paper Number 240, Institute of Urban and Regional Development, University of California, Berkeley.

Mohring, H., 1970, "The Peak Load Problem with Increasing Returns and Pricing Constraints," *American Economic Review*, Vol. 60, No. 4, pp. 693–705.

Panzar, J., 1977, "The Pareto Dominance of Usage Insensitive Pricing," in H. Dorick, ed., *Proceedings of the Sixth Annual Telecommunications Policy Research Conference*, Lexington Books, Lexington, MA.

Panzar, J. and R. Willig, 1977, "Free Entry and the Sustainability of Natural Monopoly," *Bell Journal of Economics*, Vol. 8, No. 1, pp. 1–22.

Peles, Y., and J. Stein, 1976, "The Effect of Rate of Return Regulation is Highly Sensitive to the Nature of Uncertainty," *American Economic Review*, Vol. 66, No. 3, pp. 278–289.

Peterson, H., 1975, "An Empirical Test of Regulatory Effects," *The Bell Journal of Economics*, Vol. 6, No. 1, pp. 111–126.

Posner, R., 1969, "Natural Monopoly and Its Regulation," *Stanford Law Review*, Vol. 21, No. 3, pp. 548–643.

Posner, R., 1970, "Natural Monopoly and Its Regulation: A Reply," *Stanford Law Review*, Vol. 22, No. 3, pp. 540–546.

Posner, R., 1972, "The Appropriate Scope of Regulation in the Cable Television Industry," *Bell Journal of Economics and Management Science*, Vol. 3, No. 1, pp. 98–129.

Posner, R., 1974, "Theories of Economic Regulation," *Bell Journal of Economics and Management Science*, Vol. 5, No. 2, pp. 335–358.

Ramsey, F., 1927, "A Contribution to the Theory of Taxation," *Economic Journal*, Vol. 37, No. 1, pp. 47–61.

Riordan, M., 1984, "On Delegating Price Authority to a Regulated Firm," *Rand Journal of Economics*, Vol. 15, No. 1, pp. 108–115.

Riordan, M., and D. Sappington, "Awarding Monopoly Franchises," *American Economic Review*, Vol. 77, No. 3, pp. 375–387.

Robinson, J., 1933, *Economics of Imperfect Competition*, Macmillan, London.

Sappington, D., 1980, "Strategic Firm Behavior Under a Dynamic Regulatory Adjustment Process," *Bell Journal of Economics*, Vol. 11, No. 1, pp. 360–372.

Sappington, D., 1983, "Optimal Regulation of a Multiproduct Monopoly with Unknown Technological Capabilities," *Bell Journal of Economics*, Vol. 14, No. 3, pp. 453–463.

Sappington, D., and D. Sibley, 1988, "Regulating without Cost Information: The Incremental Surplus Subsidy Scheme," *International Economic Review*, Vol. 29, No. 2, pp. 297–306.

Schmalensee, R., 1981, "Output and Welfare Implications of Monopolistic Third-Degree Price Discrimination," *American Economic Review*, Vol. 71, No. 1, pp. 242–247.

Schwartz, M., and R. Reynolds, 1983, "Contestable Markets: An Uprising in the Theory of Industry Structure: Comment," *American Economic Review*, Vol. 73, No. 3, pp. 488–490.

Sharkey, W., 1981, "Existence of Sustainable Prices for Natural Monopoly Outputs," *Bell Journal of Economics*, Vol. 12, No. 1, pp. 144–154.

Sharkey, W., 1982, *The Theory of Natural Monopoly*, Cambridge University Press.

Sibley, D., 1989, "Asymmetric Information, Incentives, and Price-Cap Regulation," *Rand Journal of Economics*, Vol. 20, No. 3, pp. 392–404.

Spann, R., 1974, "Rate of Return Regulation and Efficiency in Production: An Empirical Test of the Averch-Johnson Thesis," *The Bell Journal of Economics and Management Science*, Vol. 5, No. 1, pp. 38–52.

Steiner, P., 1957, "Peak Loads and Efficient Pricing," *Quarterly Journal of Economics*, Vol. 71, No. 4, pp. 585–610.

Takayama, A., 1969, "Behavior of the Firm under Regulatory Constraint," *American Economic Review*, Vol. 59, No. 3, pp. 255–260.

Taylor, L., 1980, *Telecommunication Demand: A Survey and Critique*, Ballinger, Cambridge, MA.

Townsend, R., 1979, "Optimal Contracts and Competitive Markets with Costly State Verification," *Journal of Economic Theory*, Vol. 21, pp. 265–293.

Train, K., 1977, "Optimal Transit Prices under Increasing Returns to Scale and a Loss Constraint," *Journal of Transport Economics and Policy*, Vol. 11, No. 2, pp. 185–194.

Train, K., 1989, "Self-Selecting Tariffs under Pure Preferences Among Tariffs," Working Paper, Department of Economics, University of California, Berkeley.

Train, K., 1990, "Pareto Dominating Optional Time-of-Use Prices," Working Paper, Department of Economics, University of California, Berkeley.

Train, K., D. McFadden, and M. Ben-Akiva, 1987, "The Demand for Local Telephone Service: A Fully Discrete Model of Residential Calling Patterns and Service Choices," *Rand Journal of Economics*, Vol. 18, No. 1, pp. 109–123.

Train, K., and N. Toyama, 1989, "Pareto Dominance through Self-Selecting Tariffs: The Case of TOU Electricity Rates for Agricultural Customers," *Energy Journal*, Vol. 10, No. 1, pp. 91–109.

Varian, H. R., 1985, "Price Discrimination and Social Welfare," *American Economic Review*, Vol. 75, No. 4, pp. 870–875.

Vogelsang, I., and J. Finsinger, 1979, "A Regulatory Adjustment Process for Optimal Pricing by Multiproduct Monopoly Firms," *Bell Journal of Economics*, Vol. 10, No. 1, pp. 157–171.

Williamson, O., 1966, "Peak-Load Pricing and Optimal Capacity under Indivisibility Constraints," *American Economic Review*, Vol. 56, No. 4, pp. 810–827.

Williamson, O., 1976, "Franchise Bidding for Natural Monopolies—In General and With Respect to CATV," *Bell Journal of Economics*, Vol. 7, No. 1, pp. 73–104.

Willig, R., 1978, "Pareto Superior Non-linear Outlay Schedules," *Bell Journal of Economics*, Vol. 9, pp. 56–69.

Zajac, E., 1970, "A Geometric Treatment of Averch-Johnson's Behavior of the Firm Model," *American Economic Review*, Vol. 60, No. 1, pp. 117–125.

Zajac, E., 1978, *Fairness or Efficiency*, Ch. 7, Ballinger, Cambridge, MA.

Index

This index is intended primarily as a guide to locating definitions of terms and references to authors' work.

Access charge, 191
Acton and Vogelsang, 317, 326
AISS. *See* Approximate incremental surplus subsidy scheme
A-J. *See* Averch and Johnson
Allowance under access/usage tariff, 194
Allowed profit, 37
Approximate incremental surplus subsidy scheme, 187–188
Asymmetry
  informational, xi, 147
  in treatment of uncertainty, 96
Auction of monopoly franchise, 298, 299
  repeated, 302
Averch and Johnson, xi, 19
  effect, 40

Bad luck, 98
Bad-luck profit hill, 99
Bailey, xi, 2n, 20, 65, 69, 298. *See also* Bailey and Coleman; Bailey and Malone; Baumol, Bailey, and Willig
Bailey and Coleman, 19n
Bailey and Malone, 2n
Baron and Besanko, xii, 167, 168n
Baron and Myerson, 180n
Baumol, 297, 298, 304, 304n. *See also* Baumol and Bradford; Baumol and Klevorick; Baumol, Bailey, and Willig; Baumol, Panzar, and Willig
Baumol and Bradford, xii, 116
Baumol and Klevorick, xi, 2n, 19n, 20
Baumol, Bailey, and Willig, 297, 308
Baumol, Panzar, and Willig, xiii
Bawa and Sibley, 19n
Ben-Akiva. *See* Train, McFadden, and Ben-Akiva
Besanko. *See* Baron and Besanko
Block rates tariff, 192
  declining, 192, 213
  inverted, 192, 221
Boiteux, xiii, 241n
Bradford. *See* Baumol and Bradford
Brennan, 323
Budget constraint
  under block rates tariffs, 214, 221
  under self-selecting tariffs, 269

Capacity, 241
  optimal, 252
Capital, nonproductive, 53
Capture theory, 4
Coase, 196, 197
Coleman. *See* Bailey and Coleman
Collection point, 224
Competition, 1, 8, 16n, 297
Congestion, 246
Constant returns to scale, 47n
Constraint plane, 36
Consumer surplus, 13
Contestability, xiii, 1n, 298, 303
Costless exit, 303
Costs
  fixed, 6
  transaction, 195
Courville, 61

Das, xi, 96
Davis, 19n
Deadweight loss, 185
Declining block rates tariff, 192, 213
Demand, elastic/inelastic portion of, 32
Demand elasticity, 122
  relation to marginal revenue, 31
Demand function, 26, 26n
Demsetz, xiii, 297, 298

Dependent risk, 100
Discount rate, 171
Discrimination, price, 72
Diseconomies of scale, 6
Duopoly, natural, 8

Economic profits, 34
Economies of scale, 5, 5n
  pecuniary/nonpecuniary, 5n
Economies of scope, 8
Elasticity of demand, 122
  net, 139
  relation to marginal revenue, 31
Elastic portion of demand, 32
Entry
  free, 303
  hit-and-run, 304
Erikson, 4
Excess profits, 34
Exit, costless, 303
Expansion path, 24
Expected profit, 98
Expected profit hill, 99, 100

Fair rate of return, 20, 34n
Faulhaber, 299, 311
Feasible profit, 37
Finsinger and Vogelsang, xii, 178, 178n, 187–190. *See also* Vogelsang and Finsinger
First-best outcome, 16, 69
Fixed costs, 6
Fixed proportions production, 55n
Flat-rate bias, 211
Flat-rate service, 192
Franchise, monopoly, xiii, 298
Free entry, 303

Goldplating, 53
Good luck, 98
Good-luck profit hill, 99

Hit-and-run entry, 304
Homothetic production function, 47, 47n
Houthakker, 241n

ISS. *See* Incremental subsidy surplus scheme
Incentive compatible, 3n
Incremental subsidy surplus scheme, xii, 182–183
Independent risk, 100
Inelastic portion of demand, 32
Informational asymmetry, xi, 147
Inframarginal price, 193
Inverted block rates tariff, 192
Invisible hand, 1. *See also* Visible hand

Isobenefit contour, 129
Isocost-isoquant mapping, 22
Isocost line, 23
Isoprofit contour, 29
Isoquant, 23, 23n

Johnson. *See* Averch and Johnson
Joskow, 19n

Kafoglis, 2n
Keeler and Small, 241n
Klevorick, 19n. *See also* Baumol and Klevorick

Laffont and Tirole, 180n
Laspeyres index, 318, 323
Lee, 141
L-M. *See* Loeb and Magat
Loeb and Magat, 178–182, 203
Logan et al., 19n
Luck, good/bad, 98

McFadden, 141. *See also* Train, McFadden, and Ben-Akiva
Magat. *See* Loeb and Magat
Malone. *See* Bailey and Malone
Marginal price, 193
Marginal product of labor/capital, 62
Marginal rate of technical substitution, 23, 61, 62
Marginal revenue, 30
  relation to demand elasticity, 31
Measured service, 192
Merewitz and Pozdena, 141
Mohring, 241n
Monopoly, natural, 1, 12
Monopoly franchise, xiii, 298
MRTS. *See* marginal rate of technical substitution
Multipart tariff, xiii, 191
Myerson. *See* Baron and Myerson

Natural duopoly, 8
Natural monopoly, 1, 12
Nonpecuniary economies of scale, 5n
Nonproductive capital, 53

Off-peak period, 244
One-part tariff, 191, 191n
Optimal outcome, 13
  first-best/second-best, 16
Optional tariffs. *See* Self-selecting tariffs
Outlay schedule, 213

Panzar, xiii, 230, 298. *See also* Baumol, Panzar, and Willig; Panzar and Willig
Panzar and Willig, 299

Pareto improvement/dominance, 228
Peak period, 244
Pecuniary economies of scale, 5n
Peles and Stein, 96
Permissible prices under V-F, 149, 156
Peterson, 61n
Posner, xiii, 4, 297, 298, 302
Pozdena. *See* Merewitz and Pozdena
Present value, 171
Price caps, 317
Price discrimination, 72, 88
Prices
 marginal/inframarginal, 193
 permissible under V-F, 149, 156
 Ramsey, xii, 116
 sustainable, 306
 time-of-use, xii, 239
Price schedule, 213
Principal-agent problem, 3n
Production function, 26
 fixed-proportions, 55n
 homothetic, 47, 47n
Profit, 13
 allowed, 37
 economic, 34
 excess, 34
 feasible, 37
Profit hill, 28, 28n, 36
 expected, 99, 100
 good luck/bad luck, 99
 silhouette, 39
 sliced-off, 37
Pseudorevenue, 151
Public utilities, 3. *See also* Natural monopoly

Ramsey, xii, 116
Ramsey prices, xii, 116
Ramsey rule, 126
Rate of return, 33
 fair, 20, 34n
Rate-of-return regulation, 33
Resale markets, 91
Return-on-cost regulation, 71, 81–82, 82n
Return-on-output regulation, 70, 72, 72n
Return-on-sales regulation, 71, 80–81, 80n
Returns to scale, constant, 47n
Reynolds. *See* Schwartz and Reynolds
Riordan, xiii, 239, 240, 247–252, 258–261
Riordan and Sappington, 181n
Risk, independent/dependent, 100
ROC. *See* Return-on-cost regulation
ROO. *See* Return-on-output regulation
ROR. *See* Rate-of-return regulation
ROS. *See* Return-on-sales regulation

Sappington, xii, 148, 156n, 180n. *See also* Riordan and Sappington; Sappington and Sibley
Sappington and Sibley, xii, 178, 178n, 182–187, 187n, 203
Scale
 diseconomies of, 6
 economies of, 5, 5n
Schmalensee, 88
Schwartz and Reynolds, 298, 305
Scope, economies of, 5, 5n, 8
Second-best outcome, 16, 70
Self-selecting tariffs, xiii, 263
Sharkey, 297, 299, 308, 311
Sibley, xiii, 263–266, 284–291. *See also* Bawa and Sibley; Sappington and Sibley
Small. *See* Keeler and Small
Spann, 61n
S-S. *See* Sappington and Sibley
Stein. *See* Peles and Stein
Steiner, 241n
Strategic response, 164
Subadditivity, 11
Surplus
 consumer, 13
 improvement, 228
 total, 4, 12, 69
Surplus subsidy schemes, 177–178
 approximate incremental, 187
 incremental, xii, 182
Sustainable prices, 306

Takayama, 19n
Tariff, xii, 191
 block rates, 192, 214
 multipart, xiii, 191
 one-part, 191, 191n
 Pareto-dominating, 230
 self-selecting, xiii, 263
 time-of-use, xii, 239
 usage/access, 191, 197
Taylor, 198n
Threshold under block rates tariff, 217
 optimal, 227
Time-of-use prices, xii, 239
Tirole. *See* Laffont and Tirole
Townsend, xii, 166
Train, 141, 208, 278. *See also* Train, McFadden, and Ben-Akiva
Train, McFadden, and Ben-Akiva, 209, 211
Transaction costs, 195

Uncertainty, 15
Usage/access tariff, 191, 197
Usage charge, 192

Varian, 88
V-F. *See* Vogelsang and Finsinger
Visible hand, 2. *See also* Invisible hand
Vogelsang. *See* Acton and Vogelsang; Finsinger and Vogelsang; Vogelsang and Finsinger
Vogelsang and Finsinger, xii, 147–175, 202
Voluntary tariffs. *See* Self-selecting tariffs

Waste, 169
  pure, 53
Williamson, xiii, 241n, 298, 301, 314
Willig, xiii, 230, 298. *See also* Baumol, Bailey, and Willig; Baumol, Panzar, and Willig; Panzar and Willig

Zajac, 2n, 20, 309
Zero-profit contour, 29, 128