

Environment & Health

TI: Air Pollution and Sick-Leaves: A Case Study Using Air Pollution Data from Oslo

AU: Hansen,-Anett-C.; Selte,-Harald-K.

SO: Environmental-and-Resource-Economics; 16(1), May 2000, pages 31-50.

AB: During the last decade an increasing amount of studies have investigated the relationship between air pollution and human health effects. In this study we investigate how these effects in turn induce reduced labour productivity in terms of sick-leaves, which is an important factor in assessment of air pollution costs in urban areas. For this purpose we employ a logit model along with data on sick-leaves from a large office in Oslo and different air pollutants. Our results indicate that sick-leaves are significantly associated with particulate matter (PM₁₀), while the associations with SO₂ and NO₂, are more ambiguous. We also try to estimate the induced social costs in terms of lost labour productivity and increased governmental expenditures, although these estimates are more uncertain.

TI: Cost-of-Illness and Willingness-to-Pay Estimates of the Benefits of Improved Air Quality: Evidence from Taiwan

AU: Alberini,-Anna; Krupnick,-Alan

SO: Land-Economics; 76(1), February 2000, pages 37-53.

AB: We compare cost-of-illness (COI) and willingness-to-pay (WTP) estimates of the damages from minor respiratory symptoms associated with air pollution, using data from a study in Taiwan in 1991-92. A contingent valuation survey was conducted to estimate WTP to avoid minor respiratory illnesses. Health diaries were analyzed to predict the likelihood and cost of seeking relief from symptoms and of missing work. As predicted by economic theory, WTP is greater than the COI estimates, exceeding the latter by 1.61 to 2.26 times, depending on pollution levels. These ratios are similar to those for the United States, despite the differences between the two countries.

TI: The Health Costs of Motor-Vehicle-Related Air Pollution

AU: McCubbin,-Donald-R.; Delucchi,-Mark-A.

SO: Journal-of-Transport-Economics-and-Policy; 33(3), September 1999, pages 253-86.

AB: Motor vehicles have significantly larger health costs than previously reported. Particulates are the most damaging pollutant, while ozone and other pollutants have smaller effects. Diesel vehicles cause more damages per mile than do gasoline vehicles, because of greater particulate emissions. Very fine particles appear more dangerous than larger particles, and combustion particles appear more dangerous than road dust. The possibility cannot be ruled out that ozone is linked to mortality and chronic illness, effects which are costly and would considerably raise the costs of ozone pollution. These results suggest that emphasis should be placed on the regulation of particulates.

TI: The Economics of Air Pollution Health Risks in Russia: A Case Study of Volgograd

AU: Larson,-Bruce-A., et-al.

SO: World-Development; 27(10), October 1999, pages 1803-19.

AB: A combined health risk assessment, cost-effectiveness analysis, and benefit-cost analysis is undertaken for direct particulate emissions from 29 stationary source polluters

in the city of Volgograd, Russia. Annual particulate-related mortality risks from these stationary sources are estimated to be substantial, with an estimate in the range of 960-2,667 additional deaths per year in this city of one million. The majority of these risks are attributed to two major facilities in the northern part of the city. For several emission reduction projects, the cost-per-life saved was estimated to be quite low. The total net benefits to the city of implementing five of the six identified projects, leading to roughly a 25% reduction in mortality risk, are estimated to be at least \$40 million in present value terms.

TI: Air Pollution and Acute Respiratory Illness: Evidence from Taiwan and Los Angeles

AU: Alberini,-Anna; Krupnick,-Alan

SO: American-Journal-of-Agricultural-Economics; 79(5), 1997, pages 1620-24.

AB: This paper explores the appropriateness of concentration-response function transfers by comparing two health studies conducted following a similar format . but years apart- in Los Angeles and Taiwan. Daily records from a diary-type epidemiological study are used to fit logit equations predicting the probability of experiencing minor acute respiratory symptoms as a function of pollution and weather variables, individual characteristics, and health background and proxies for reporting effects.

TI: Valuing Health Effects of Air Pollution in Developing Countries: The Case of Taiwan

AU: Alberini,-Anna et-al.

SO: Journal-of-Environmental-Economics-and-Management; 34(2), October 1997, pages 107-26.

AB: A contingent valuation survey was conducted in Taiwan to elicit willingness to pay (WTP) to avoid a recurrence of the episode of acute respiratory illness most recently experienced by the respondent. We estimate a model in which willingness to pay depends on the attributes of the illness (duration and number of symptoms, and nature of the illness) and on respondent characteristics (such as income and health history), and allow mitigating behavior to be endogenously determined with willingness to pay. WTP of Taiwanese households is compared with benefits transfer extrapolations that adjust WTP for the United States by Taiwan household income, relative to U.S. household income.

TI: Averting Behavior and Urban Air Pollution

AU: Bresnahan,-Brian-W.; Dickie,-Mark; Gerking,-Shelby

SO: Land-Economics; 73(3), August 1997, pages 340-57.

AB: Unique panel data are used to explain defensive responses to air pollution using determinants predicted by an averting behavior model. Empirical results indicate that persons who experience smog-related symptoms spend significantly less time outdoors as ozone concentrations exceed the national standard. Many people also report making other behavioral changes to avoid smoggy conditions and the propensity to do so appears to increase with schooling or if health symptoms are experienced. Results provide evidence that people adjust daily activities to defend against acute health effects of air pollution, though mitigation appears less closely linked to chronic health impairments.

TI: Health Damage of Air Pollution: An Estimate of a Dose-Response Relationship for the Netherlands

AU: Zuidema,-Thijs; Nentjes,-Andries

SO: Environmental-and-Resource-Economics; 9(3), April 1997, pages 291-308.

AB: This paper estimates the dose-response relationship between air pollution and the number of work loss days for the Netherlands. The study is based on illness data (work loss days) for the Dutch labour population and average year concentrations of air pollution in 29 districts. The dose-response relationship has been estimated by means of two different techniques: the ordinary least squares method (OLS) and the one-way fixed-effects method (OWFEM), which we consider to be more adequate. In general health effects are much smaller when OWFEM is applied than if OLS is used. With OWFEM a significant relationship is found between sulphate aerosol (SO_4), ammonia (NH_3) and the number of work loss days (WLDs). Particulates (TSP), O_3 and SO_2 have no significant effect on the number of WLDs. These results differ from those obtained in studies in the United States, which indicate that particulates (TSP) and other small particles, ozone (O_3) and to a lesser extent SO_4 and SO_2 significantly influence the number of WLDs.

TI: Fuel and Location Effects on the Damage Costs of Transport Emissions

AU: Eyre,-N.-J. et-al.

SO: Journal-of-Transport-Economics-and-Policy; 31(1), January 1997, pages 5-24.

AB: The techniques of environmental economics allow monetary values to be placed on the health and environmental impacts of pollution. This paper reports an approach to transferring damage cost results derived in the electricity sector by using simple models of air pollution on local and regional scales. The results are applied to road transport emissions from vehicles using petrol, diesel and natural gas in typical rural and urban locations. Even vehicles meeting current standards produce significant damage. It is concluded that damage is very much greater from urban emissions because of the proximity of large populations. Some policy implications are discussed. Coauthors are E. Ozdemiroglu, D. W. Pearce, and P. Steele.

TI: Ordering Effects in Contingent Valuation Surveys: Willingness to Pay for Reduced Health Damage from Air Pollution

AU: Halvorsen,-Bente

SO: Environmental-and-Resource-Economics; 8(4), December 1996, pages 485-99.

TI: Custos de saude associados a poluicao do ar no Brasil. (With English summary.)

AU: da-Motta,-Ronaldo-Seroa; Mendes,-Ana-Paula-Fernandes

SO: Pesquisa-e-Planejamento-Economico; 25(1), April 1995, pages 165-97.

AB: This study is an attempt to determine a dose-response function which correlates air pollution concentration and mortality cases due to respiratory diseases in the city of Sao Paulo. Based on these econometric results, health costs with hospital expenses and output foregone due to work-day lost and premature deaths are estimated for the cities of Sao Paulo, Cubatao and Rio de Janeiro where this environmental problem is significant. As will be shown, although these estimated costs do not represent the full environmental

costs associated with air pollution, their comparison to similar costs associated to water pollution allows one to set priorities for urban environmental policies in Brazil.

TI: External Health Costs of a Steel Mill

AU: Ransom,-Michael-R.; Pope,-C.-Arden, III

SO: Contemporary-Economic-Policy; 13(2), April 1995, pages 86-97.

AB: Intermittent operation of a steel mill in a mountain valley in central Utah provides a unique opportunity to measure the external health costs of air pollution. A nearby valley provides a control. This paper analyzes data on hospital admissions and daily deaths for the two valleys, using negative binomial regression models of daily hospital admissions and deaths. Hospital admissions for respiratory diseases increase significantly when the mill is in operation. Mortality also increases during mill operation. Estimated excess hospitalization costs are about 2 million dollars per year, and the increased cost of mortality exceeds 40 million dollars per year.

TI: On the Costs of Air Pollution from Motor Vehicles

AU: Small,-Kenneth-A.; Kazimi,-Camilla

SO: Journal-of-Transport-Economics-and-Policy; 29(1), January 1995, pages 7-32.

AB: The authors present estimates of air pollution costs from various types of motor vehicles in the Los Angeles region. The costs are dominated by mortality from particulate matter, including that formed from gaseous emissions through secondary reactions. The best estimate for the air pollution cost of the average car on the road in California in 1992 is \$0.03 per mile, falling to half that amount in the year 2000. A typical heavy-duty diesel vehicle is much more costly. The cost estimates are sensitive to the assumed value of life, to the measured health effects of particulates, and to assumptions about road dust.

TI: Valuation of Pollution Abatement Benefits: Direct and Indirect Measurement

AU: Shechter,-M.; Kim,-M.

SO: Journal-of-Urban-Economics; 30(2), September 1991, pages 133-51.

AB: This paper deals with the valuation of benefits, especially morbidity reduction, associated with air pollution abatement. Two approaches are employed. These are direct, contingent valuation, as gauged by willingness to pay, and indirect valuation through the effect of changes in the provision of a public good (clean air) upon the demand for two market goods, housing and medical services. Both empirical analyses are based on the same set of individuals from a sample survey of households in the city of Haifa in Israel. This strategy enables the derivation of comparable individual valuations. The paper then proceeds to compare and evaluate the estimates of welfare changes obtained under these two distinct approaches.

TI: Central Facility Location and Environmental Health

AU: Malczewski,-J.

SO: Environment-and-Planning-A; 23(3), March 1991, pages 385-95.

AB: Environmental aspects of central facility location problems are considered. First, populations which are hypersusceptible to air pollutants are identified and then the relationships are outlined between central facility location and the quality of the environment in the context of the users' susceptibility to the pollutants. Three segments

of the population are identified as highly sensitive to the adverse effects of air pollution: children, the aged, and sufferers from respiratory and circulatory conditions. Accordingly, some central facilities, such as creches, kindergartens, elementary schools, homes for the aged, and hospitals are recognized as hyper-susceptible to environmental pollution. An illustration of an environmental approach to central facility location is presented. A multicriteria optimization model is developed and applied to the location of pediatric hospitals in the Warsaw region. The trade-off between two criteria--accessibility to hospitals and environmental quality of the sites for hospital locations--is examined.

TI: Air Pollution, Cigarette Smoking, and the Production of Respiratory Health

AU: Mullahy,-John; Portney,-Paul-R.

SO: Journal-of-Health-Economics; 9(2), September 1990, pages 193-205.

AB: Previous studies of the determinants of respiratory health have treated both smoking and air pollution as being exogenous. Using an instrumental variables approach, the authors estimate a simple production technology in which smoking is treated as being endogenously determined. Doing so, they find, increases the predicted absolute effects of smoking on respiratory health; relative to air pollution, smoking becomes a more important determinant when it is treated as an endogenous variable.

TI: Urban Air Quality and Chronic Respiratory Disease

AU: Portney,-Paul-R.; Mullahy,-John

SO: Regional-Science-and-Urban-Economics; 20(3), November 1990, pages 407-18.

AB: Several factors have made it difficult in the past to link urban air quality to chronic illness. These include poor data on long-term air quality, an absence of data on individual health histories, crude measures of individual health, and inadequate control for residential migration and smoking. Using new data sets created for this purpose, this paper explores the links between urban air pollution on the one hand--specifically ozone and particulate matter--and chronic respiratory illness on the other. The results indicate that ambient ozone concentrations may be associated with sinusitis and hay fever, while particulate matter may be associated with more serious respiratory diseases.

TI: An Economic Analysis of Air Pollution and Health: The Case of St. Louis

AU: Gerking,-Shelby; Stanley,-Linda-R.

SO: Review-of-Economics-and-Statistics; 68(1), February 1986, pages 115-21.

TI: The Effects of Air Pollution on Work Loss and Morbidity

AU: Ostro,-Bart-D.

SO: Journal-of-Environmental-Economics-and-Management; 10(4), December 1983, pages 371-82.

TI: Urban Air Pollution and Morbidity: A Retrospective Approach

AU: Ostro,-Bart

SO: Urban-Studies; 20(3), August 1983, pages 343-51.

TI: The Health Effects of Air Pollution: A Reanalysis

AU: Chappie,-Mike; Lave,-Lester

SO: Journal-of-Urban-Economics; 12(3), November 1982, pages 346-76.

TI: What Do We Know about Benefits of Reduced Mortality from Air Pollution Control?

AU: Gerking,-Shelby; Schulze,-William

SO: American-Economic-Review; 71(2), May 1981, pages 228-34.

TI: Air Pollution and Mortality Rates: A Note on Lave and Seskin's Pooling of Cross-Section and Time-Series Data

AU: Christainsen,-Gregory-B.; Degen,-Carl-G.

SO: Journal-of-Environmental-Economics-and-Management; 7(2), June 1980, pages 149-55.

TI: Health and Air Pollution

AU: Lave,-Lester-B.; Seskin,-Eugene-P.

SO: Swedish-Journal-of-Economics; 73(1), March 1971, pages 76-95.

TI: The Effect of Air Pollution upon Mortality: A Consideration of Distributed Lag Models

AU: Wyzga,-Ronald-E.

SO: Journal-of-the-American-Statistical-Association; 73(363), Sept. 1978, pages 463-72.

TI: Exploratory Techniques for the Determination of Potential Dose-Response Relationships between Human Health and Air Pollution

AU: Page,-Walter-P.; Fellner,-William

SO: Journal-of-Environmental-Economics-and-Management; 5(4), Dec. 1978, pages 376-89.

TI: An Empirical Analysis of Air Pollution Dose-Response Curves

AU: Mendelsohn,-Robert; Orcutt,-Guy

SO: Journal-of-Environmental-Economics-and-Management; 6(2), June 1979, pages 85-106.

TI: An Analysis of Some Short-Term Health Effects of Air Pollution in the Washington, D.C. Metropolitan Area

AU: Seskin,-Eugene-P.

SO: Journal-of-Urban-Economics; 6(3), July 1979, pages 275-91.

TI: Air Quality and Episodes of Acute Respiratory Illness in Taiwan Cities: Evidence from Survey Data

AU: Alberini,-Anna; Krupnick,-Alan

SO: Journal-of-Urban-Economics; 44(1), July 1998, pages 68-92.

AB: This paper reports on a unique study that records daily health status for over nine hundred residents of three urban areas in Taiwan and elicits their willingness to pay to avoid episodes of illness. Incidence of illness is related to the ambient concentration

levels of particulate matter but the effects are much less pronounced than would be expected from earlier U.S. studies. Willingness to pay to avoid illness is considerably higher than that predicted by extrapolations of U.S. studies that rely on simple income adjustments. The authors argue that extrapolations from U.S. studies may be inadequate for predicting the benefits of reduced pollution levels in developing countries. (c) 1998 Academic Press

TI: On the Development of a New Methodology for Groundwater-Driven Health Risk Assessment

AU: Maxwell,-Reed-M. et-al.

SO: Water-Resources-Research; 34(4), April 1998, pages 833-47.

TI: Avoiding Health Risks from Drinking Water in Moscow: An Empirical Analysis

AU: Larson,-Bruce-A.; Gnedenko,-Ekaterina-D.

SO: Environment-and-Development-Economics; 4(4), October 1999, pages 565-81.

AB: Casual observation suggests that many households in Moscow boil water, settle water in pans for some periods (e.g., overnight) before consuming, filter water, and buy bottled water. To date, there has been little empirical analysis of such avoidance behavior. Based on a recently completed survey of 615 households in Moscow, this paper investigates the types and amounts of avoidance measures that are used by households in Moscow to adjust drinking water quality. Survey results show that this is clearly the case: over 88 per cent of the sample boil water regularly due to concerns about water quality; 23 per cent filter water regularly; over 30 per cent settle water regularly; and about 13 per cent buy bottled water regularly. On the other hand, residents are generally content with their cold water supply and quality of delivery. Based on a microeconomic model of household avoidance behavior, logit regression results show how avoidance decisions relate to income, opinions of water quality, and location in the city. It is expected that this analysis from Moscow can also be used as a guide for future studies in other cities in Russia to evaluate opinions of quality, avoidance measures, and citizens' willingness to support public infrastructure projects designed to improve water supply.

TI: The Value of Health Benefits from Ambient Air Quality Improvements in Central and Eastern Europe: An Exercise in Benefits Transfer

AU: Krupnick,-Alan et-al.

SO: Environmental-and-Resource-Economics; 7(4), June 1996, pages 307-32.

TI: Benefices de sante lies a la qualite de l'environnement: Peut-on negliger les couts prives? (Health Benefits Induced by Environmental Quality: Are Private Costs Negligible? With English summary.)

AU: Rozan,-Anne

SO: Revue-Economique; 51(3), May 2000, pages 595-608.

AB: For a complete estimation of morbidity effects associated with environmental damages, the paper pleads in favour of the use of two methods: the cost of illness method (COI) and the contingent valuation method (CVM). Indeed these methods are complementary, COI is used to assess the "social cost" (medical expenses, lost wages) and CVM to value the "private cost" (disutility associated with the symptoms, pain, restricted

activity). Moreover we show in the case of light symptoms induced by air pollution that private cost is at least as important as the social cost. Neglecting the private cost leads to an underestimation of health costs. In a cost-benefit analysis point of view, such an underestimation could lead to the opposite public decision.

TI: Health and Environmental Benefits from Air Pollution Reductions in Hungary

AU: Aunan, K et al.,

SO: The Science of the Total Environment, 212: 1998, pages 245-268.

TI: A Study of Social and Economic Implications of Mobile Sources on Air Quality in Lebanon

AU: Chaaban, F.B., I. Nuwayhid, S. Djoundourian

SO: Transportation Research Part D, 6, 2001, pages 347-355.

TI: Particulate Matter in Urban Areas: Health-Based Economic Assessments

AU: El-Fadel, M. and M. Massoud

SO: The Science of the Total Environment, 257,2000, pages 133-146.

TI: Air Pollution Requires Multipollutant Analysis: The Case of Santiago, Chile

AU: Eskelund, Gunnar S

SO: American Journal of Agricultural Economics, 79: 1997, pages 1636-1641.

TI: A Constructive Approach to Air-Quality Valuation in Korea.

AU: Kwak, Seung-Jun, Seung-Hoon Yoo and Tai-Yoo Kim

SO: Ecological Economics., 38, 2001, pages 327-344.

AB: This paper uses a new constructive contingent valuation approach, based on the value-structuring capabilities of multi-attribute utility theory (MAUT) to help respondents construct and express environmental value judgments in monetary terms. The MAUT approach adopts a 'decomposition' procedure, which seems to be more in harmony with the constructive nature of human values and the coping strategies of respondents dealing with complexity. We provide an application of the approach in a survey of random population samples, where we seek valuation of specific damages due to air pollution in Seoul, Korea, a developing country where the economic valuation of environmental impacts remains scarce. A discussion of the results is also presented. The overall results show that although empirical evidence is sparse, there appears to be considerable scope for the use of the approach in environmental valuations.

TI: Cost .Effective Policies to Improve Urban Air Quality in Santiago, Chile

AU: O.Ryan, R. E

SO: Journal of Environmental Economics and Management, 31(3), November 1996, pages 302-313

AB: This paper examines the applicability of market-based incentives for controlling emissions of particulate matter from fixed sources, in a developing-country context. It uses Santiago, Chile as a case study. A linear programming model has been developed to establish the costs of achieving different air quality targets using marketable permits and command-and-control (CAC) policies. The main conclusion is that an ambient permit

system (APS) substantially reduces compliance costs of achieving a given air quality target at each receptor location in the city. Consequently, the use of permits is warranted. However, spatial differentiation of permits is required, thus complicating the design and use of such an instrument. Moreover, the reduction in compliance costs under APS is significantly less when the air quality targets imposed for each receptor location are the same as those achieved by other CAC policies.

TI: Air Pollution and Mortality: Results from a Study of Santiago, Chile

AU: Ostro, B., et al

SO: Journal of Exposure Analysis and Environmental Epidemiology, 6,1996, pages 97-114.

TI: Economic Valuation and Health Damage from Air Pollution in the Developing World

AU: Pearce, David,

SO: Energy Policy, 24(7): 1996, pages 627-630.

TI: Urban Air Pollution in Latin America and Caribbean: Health Perspectives

AU: Romieu, I., H. Weitzenfeld, and J. Finkelman

SO: World Health Statistics Quarterly, vol 43,1990, pp 153-167.

TI: Assessing Health Impacts of Air Pollution from Electricity Generation: The Case of Thailand

AU: Thanh, Bui Duy and Thierry Lefevre

SO: Environmental Impact Assessment Review, 20, 2000, pages 137-158.

AB: They apply the impact pathway approach (IPA) to estimate health impacts and corresponding damage costs of sulfur dioxide (SO₂) and emissions of fine particulate matter (PM₁₀) from four power units using different fuels (lignite, oil, natural gas, and coal) at four locations in Thailand. The results show that the damage cost related to health effects of electricity generation in Thailand are relatively small, but not negligible, ranging from 0.006 U.S. cent to 0.05 U.S. cent per kilowatt-hour (in 1995 dollars). Damage costs to the public health due to SO₂ and PM₁₀ emissions from electricity generation not only depend on fuel and generating technology but also depend strongly on power plant location. This implies that the assessment of adverse health impacts is very important for technology choice and siting of new power plants.

TI: Air Pollution and daily Mortality in Residential Area of Beijing, China

AU: Xu, X. , J. Gao, D. W. Dockery, and Y. Chen,

SO: Archives of Environmental Health, vol 49, Number 4,1994, pp 216-22.

TI: How Much Global Ill Health is Attributable to Environmental Factors?

AU: Smith, K.R., Corvalan, C.F. and T. Kjellstrom

SO: Epidemiology, 10, 1999, pages 573-584.

TI: The Health Benefits of Air Pollution Control in Delhi

AU: Cropper,-Maureen-L. et-al.

SO: American-Journal-of-Agricultural-Economics; 79(5), 1997, pages 1625-29.

AB: This paper reports the results of a study relating levels of particulate matter to daily deaths in Delhi, India, between 1991 and 1994. The focus is on Delhi because it is one of the world's most polluted cities. This study concludes: (a) The impact of particulate matter on total non-trauma deaths in Delhi is smaller than effects found in the United States. (b) The impacts of air pollution on deaths by age-group may be very different in developing countries than in the United States, where peak effects occur among people aged sixty-five and older. In Delhi, peak effects occur between the ages of fifteen and forty-four, implying that a death associated with air pollution causes more life-years to be lost.

TI: Compliance: Regulation and environment

AU: Hutter,-Bridget-M.

SO: Oxford Socio-Legal Studies. Oxford and New York: Oxford University Press, Clarendon Press, 1997, pages xvi, 281.

AB: Considers the regulation of occupational health and safety and the environment in England and Wales in the 1980s, focusing on the enforcement of regulation by field-level inspectors from the Factory Inspectorate, the Industrial Air Pollution Inspectorate, and the Railway Inspectorate. Describes the origins, structure, and aims of the Health and Safety Executive, the largest regulatory body in Great Britain. Examines the legal and administrative framework of compliance; the working definition of compliance; proactive methods used by the inspectors; the response of the inspectors to complaints and accidents; and interactions between inspectors and the regulated. Relates the findings to broader issues of social control and presents policy implications.

TI: Vehicular air pollution: Experiences from seven Latin American urban centers

AU: Onursal,-Bekir; Gautam,-Surhid-P.

SO: Technical Paper, no. 373. Washington, D.C.: World Bank, 1997, pages xx, 282.

AB: Describes the experiences of seven Latin American urban centers with vehicular air pollution. Discusses sources, properties, emission characteristics, dispersion, and environmental and health effects of vehicular air pollutants. Quantifies the health effects of air pollution and provides ambient air quality standards adopted in Latin American and Caribbean countries. Presents the vehicle- and fuel-targeted and transport management measures used to control vehicular air pollution, drawing on examples from the United States, European Union countries, and others. Provides case studies for seven Latin American urban centers: Mexico City, Santiago, Sao Paulo, Belo Horizonte, Buenos Aires, Rio de Janeiro, and Santafe de Bogota. Analyzes ambient air quality, sources of pollution, institutional responsibilities, and the measures implemented to abate vehicular air pollution for each case study. Onursal is a senior environmental specialist in the Environment Unit of the World Bank's Latin America and the Caribbean Region Technical Department.

TI: Health Costs Associated with Air Pollution in Brazil

AU: Seroa-da-Motta,-Ronaldo; Fernandes-Mendes,-Ana-Paula

SO: May,-Peter-H.; da-Motta,-Ronaldo-Seroa, eds. Pricing the planet: Economic analysis for sustainable development. New York: Columbia University Press, 1996, pages 101-22.

TI: Air quality management: Considerations for developing countries

AU: Wijetilleke,-Lakdasa; Karunaratne,-Suhashini-A.-R.

SO: Technical Paper, no. 278. Energy Series. Washington, D.C.: World Bank, 1995, pages xvii, 101.

AB: Addresses issues of air quality management for developing countries. Introduces the growing problem of air pollution. Describes the potential health and environmental effects of major air pollutants: carbon monoxide, hydrocarbons, oxides of nitrogen, suspended particulate matter, and lead. Examines some regional and global air pollution problems, discussing the greenhouse effect and greenhouse gases, acid rain and sulfur oxides, and ozone depletion and chlorofluorocarbons. Considers current and proposed air quality standards in various developed and developing countries and reviews the standards proposed by the World Health Organization (WHO). Addresses the valuation of the benefits of mitigating air pollution and summarizes some recent World Bank research on the potential health benefits of improving ambient air quality in Bangkok. Identifies some options for mitigating air pollution and outlines some essential steps needed to develop cost-effective and timely air quality management programs.

TI: An Economic Analysis of Air Pollution and Health: The Case of St. Louis

AU: Gerking,-Shelby; Stanley,-Linda-R.

SO: Markandya,-Anil; Richardson,-Julie, eds. Environmental economics: A reader.. New York: St. Martin's Press, 1992, pages 194-203. Previously published: [1986].

TI: Benefits of Reduced Morbidity from Air Pollution Control: A Survey

AU: Dickie,-Mark; Gerking,-Shelby

SO: Folmer,-H.; van-Ierland,-E., eds. Valuation methods and policy making in environmental economics: Selected and integrated papers from the Congress "Environmental Policy in a Market Economy," Wageningen, The Netherlands, 8-11 September 1987. Studies in Environmental Science, no. 36, Amsterdam; Oxford; New York and Tokyo: Elsevier Science, 1989, pages 105-22.

TI: Risks, concerns, and social legislation: Forces that led to laws on health, safety, and the environment

AU: Priest,-W.-Curtiss.

SO: Westview Special Studies in Public Policy and Public Systems Management. Boulder, Colo. and London: Westview Press, 1988, pages x, 204.

AB: Provides historical documentation of the social forces that have led to legislation, and reviews values that have been important in shaping government's role as mediator between individual, family, community, and industry. Uses the historical analysis to verify a functionally-based values framework regarding health, safety, and environmental regulations and health policy in general. Studies legislation from 1900 to 1973 in five areas: air pollution, aviation safety, consumer product safety, occupational

health and safety, and pesticide control. Priest is director of the Center for Information Technology and Society, Lexington, Massachusetts. Bibliography; index.

TI: An Assessment of the Benefits of Air Pollution Control: The Case of Infant Health

AU: Joyce,-Theodore-J.; Grossman,-Michael; Goldman,-Fred

SO: National Bureau of Economic Research Working Paper: 1928, May 1986, pages 48.

AB: This paper contains estimates of the impacts of air pollutants on race-specific neonatal mortality rates based on data for heavily populated counties of the United States in 1977. Unlike previous research in this area, these estimates are obtained from a well specified behavioral model of the production of health, which is estimated with the appropriate simultaneous equations techniques. The results suggest that sulfur dioxide is the dominant air pollutant in newborn survival outcomes. There is also evidence that an increase in sulfur dioxide raises the neonatal mortality rate by raising the percentage of low-birth weight births. Based on marginal-willingness-to-pay computations, we estimate that the benefits of a 10 percent reduction in sulfur dioxide levels range between \$54 million and \$1.09 billion in 1977 dollars.

TI: Controlling air pollution in China: Risk valuation and the definition of environmental policy

AU: Feng,-Therese

SO: New Horizons in Environmental Economics. Cheltenham, U.K. and Northampton, Mass.: Elgar; distributed by American International Distribution Corporation, Williston, Vt., 1999, pages xx, 266.

AB: Considers the efficient design of environmental policy for new coal-fired plants in China. Develops an integrated assessment model based on an examination of power-plant emissions and pollution control strategies, including costs and efficiencies; the transport, dispersion, and evolution of emitted pollutants in the atmosphere; and air pollutant effects on human mortality and respiratory health, agriculture, ecosystems, man-made materials, atmospheric visibility, and global warming. Applies the integrated assessment model to the design of abatement policy for a representative Chinese plant sited in two locales in northern and southern China. Presents the base case of a new plant operating without pollution controls and assesses the nature and magnitude of total annual environmental damages. Determines efficient abatement strategies for the current period and evaluates the cost-effectiveness of current and prospective technologies. Conducts a sensitivity analysis of major assumptions of the model and considers the effect of uncertainty on efficient local policy choice. Addresses how environmental policy might ideally be designed to account for variability in the environments and populations affected and in the pollutants regulated. Posits a model of one-time investment in plant controls and explores the welfare consequences of failing to anticipate evolving environmental preferences.

TI: Green accounting in Europe--Four case studies

AU: Markandya,-Anil; Pavan,-Marcella, eds.

SO: Fondazione Eni Enrico Mattei Series on Economics, Energy and Environment, vol. 11. Dordrecht; Boston and London: Kluwer Academic, 1999, pages viii, 369.

AB: Undertakes a monetary valuation of the environmental damages caused by economic activities in four countries: Germany, Italy, the Netherlands, and the United Kingdom. Focuses on various types of air pollution. Uses data that is spatially disaggregated within each country, dose-response functions, and willingness-to-pay methodology to assess the cost to humans by way of damage to health, materials, crops, forests, amenities, and ecosystems. Adopts a pristine environment as a baseline for defining background levels of various types of pollutants and reports results based on a range of plausible background levels. Markandya is at the University of Bath. Pavan is at Fondazione Eni Enrico Mattei, Milan. Index.

TI: Transferability of Air Pollution Control Health Benefits Estimates from the United States to Developing Countries: Evidence from the Bangkok Study

AU: Chestnut,-Lauraine-G.; Ostro,-Bart-D.; Vichit-Vadakan,-Nuntavarn

SO: American-Journal-of-Agricultural-Economics; 79(5), 1997, pages 1630-35.

AB: Countries around the world are experiencing increased level of air pollution as a result of rapid increases in energy consumption and motor vehicle use, a product of rapid population and economic growth. This paper focuses on the benefits to human health through reductions in particulate matter air pollution, a common pollutant in the urban environment. The authors summarize the results of a set of health effects and economic valuation studies conducted in Bangkok, Thailand, concerning particulate matter air pollution and highlight what these results imply regarding how transferable results from other countries are for assessing health benefits of particulate matter reductions in Bangkok. Comparing the willingness-to-pay (WTP) values from Bangkok to U.S. estimates, this study finds that Bangkok residents are willing to pay a higher share of their income to protect their health. A plausible explanation provided for this result is that health may be seen as a basic necessity like food and shelter.

TI: Valuing Health Effects of Air Pollution in Developing Countries: The Case of Taiwan

AU: Alberini,-Anna et-al.

SO: Resources for the Future Discussion Paper: 95-01, October 1994, pages 51.

AB: A contingent valuation survey was conducted in three cities of the Republic of China (Taiwan) to elicit willingness to pay to avoid a recurrence of the episode of illness most recently experienced by the respondent. A hedonic specification of the willingness to pay function--with willingness to pay depending on the attributes of the illness and the respondent's characteristics--reveal that willingness to pay for improved health depends on the duration of the illness, the number of symptoms experienced, and income. The elasticity of willingness to pay with respect to each of these variables is, however, quite low. Willingness to pay (WTP) is also affected by the subject's health history and "taste" for health. We use the fitted WTP function to predict willingness to pay of Taiwan households and compare this prediction with benefits transfer extrapolations that multiply WTP for the U.S. by the ratio of Taiwan household income to U.S. household income.

TI: Short Term Improvements in Public Health From Global Climate Policies on Fossil Fuel Combustion: An Interim Report.

AU: Working Group on Public Health and Fossil Fuel Combustion

SO: The Lancet, 350, 1997, pages 1341-1349.

TI: Communicating about risks to environment and health in Europe

AU: Gray,-Philip-C.-R.; Stern,-Richard-M.; Biocca,-Marco, eds.

SO: Technology, Risk and Society: An International Series in Risk Analysis, vol. 11. Dordrecht; Boston and London: Kluwer Academic on behalf of the World Health Organization Regional Office for Europe, 1998, pages xxii, 409.

AB: Twenty papers, including thirteen case studies, shed light on the process of communication among general decisionmakers, experts, and the public about environmental and health risks, focusing on the European context. Papers discuss the risk management process; the role and nature of risk communication in Europe; risk communication campaigns on AIDS and HIV infection in Europe; communicating the risks of tobacco use; problems and progress in implementing the Seveso directive; risk communication in disputes about waste incineration; risk communication on nuclear energy in the Federal Republic of Germany; risk communication about the risks from radon in buildings; risk communication about power frequency electromagnetic fields; risk communication about urban air pollution; risk communication about Salmonella in eggs; communication about pesticide risks in Italy; risk communication about asbestos; communication issues in small areas of excess health risk; risk communication in Central and Eastern Europe and the role of the environmental movement; risk communication about the rehabilitation of contaminated sites; risk communication in the context of the local risk management setting; risk perception; guidelines for risk communication; and the public debates and issues for further development.

TI: Urban air quality management strategy in Asia: Guidebook

AU: Shah,-Jitendra-J.; Nagpal,-Tanvi; Brandon,-Carter-J., eds.

SO: Washington, D.C.: World Bank, 1997, pages xiv, 171.

AB: Details the steps in an air quality management system and guides planners and engineers in creating an action plan to control air pollution. Outlines the components of an air quality management system. Explains the methods of air quality assessment. Presents procedures to assess air pollution damage and methods to place a monetary value on these damages. Discusses various technical measures to reduce emissions and assesses their costs and benefits. Examines various policy instruments to prevent or combat air pollution, including direct regulation, economic instruments, and communication and awareness-building instruments. Summarizes the components of an action plan. Appendices provide pollutant fact sheets; monitoring-methods fact sheets; questionnaires for collection of point source emission data; additional information on health damage assessment and the assessment of nonhealth impacts of air pollution; and a description of the Environmental Surveillance and Information System that was developed within the Eureka framework of the European Union.