

## Economic Impact Of Traffic Congestion In Metro Manila

Focusing on air pollution, energy efficiency and climate change, this book provides an introduction to Japan's environmental policies and regulations, and offers economic analyses and RIAs (Regulatory Impact Analysis) of environmental regulations implemented or planned by the national and local governments. The opening chapter reviews environmental economics and outlines the current status of RIAs in Japan. Chapter 2 analyzes the NOx-PM Act, which prohibits the use of old and polluting vehicles in metropolitan areas. Chapter 3 examines a Tokyo metropolitan government regulation which requires installation of pollution control equipment in older trucks that fail to meet emission standards. Chapter 4 traces the impact of the NOx-PM Act on the used car market and used vehicle exports. Chapter 5 presents an economic analysis of a highway toll reduction, revealing an unexpected negative social impact: it increased traffic congestion and associated environmental problems. The final three chapters address policies and regulations related to energy efficiency and climate change Chapter 6 evaluates the effectiveness of Japan's Energy Conservation Act, originally introduced in 1979 and amended numerous times to address climate change. Chapter 7 anticipates the impact of a proposed economy-wide carbon tax, using input-output analysis to assess short-term economic impacts in each sector. Also presented here is an examination of the effectiveness of a reduced carbon tax for energy-intensive industries, with a discussion of the impact of the proposal on households. The final chapter discusses the role and limitations of economic models for evaluating Japan's mid-term GHG (Greenhouse Gas) emission target during the post-Kyoto period. This is the first book to evaluate Japanese environmental policies from an economic perspective, using a variety of current quantitative approaches. Its findings and suggestions will benefit students, policy makers and government officials in developing and developed countries where the public faces similar environmental problems.

The Economic Impact of Traffic Crashes

Outdoor air pollution kills more than 3 million people across the world every year, and causes health problems from asthma to heart disease for many more. This is costing societies very large amounts in terms of the value of lives lost and ill health. Based on extensive new epidemiological evidence since the 2010 Global Burden of Disease study, and OECD estimates of the Value of Statistical Life, this report provides evidence on the health impacts from air pollution and the related economic costs.

A Complex Network Method for Traffic Modeling and Control

An Economic Impact Assessment of Toll Roads, with Specific Reference to the Impact on Alternative Roads Between the Pumulani and Hammanskraal Toll Gates

Quantifying Congestion: Final report

Economic Implications of Congestion

The Economic Impact of Restricting Freeway Truck Movements During Commuter Hours in the South Coast Air Quality Management District

The Impact of Increased Trucking on Economic Development, Congestion and Traffic Safety

**Unexpected delays due to traffic incidents represent a significant proportion of overall delay, especially in urban areas. The resulting uncertainty can represent major costs to businesses and travelers, as well as restrict employment opportunities. This study focuses on North Carolina's Interstate facilities and businesses across the State that rely on these facilities for their daily operations and are influenced by traffic congestion due to their shipping needs. The first portion of the study examines the occurrences and costs of unexpected delay for North Carolina businesses, using telephone and face-to-face interviews. Results show that delays due to incident-induced congestion impose significant costs, which may increase over time as expected congestion and the number of incidents on the North Carolina interstates continue to grow. These costs are most severe in the Manufacturing industrial sector and in the Charlotte metropolitan area. Additionally, numerous firms commented on the need for better communication between NCDOT and the business community. The second portion of the study is devoted to developing case studies to simulate the impact of strategies to reduce incident congestion costs in North Carolina. Results show that incident management assistance patrols and advanced traveler information systems can significantly reduce unexpected delays and associated costs. The implications of the findings for economic growth are discussed.**

**Projected increases in the transport of freight by rail and truck may produce economic benefits but also increase traffic congestion in communities. This book addresses among other things, the recent changes in U.S. rail and truck freight flows and the extent to which related traffic congestion is reported to impact communities; the extent to which DOTs efforts to implement MAP-21 address freight-related traffic congestion in communities.**

**Offers policy-oriented, research-based recommendations for effectively managing traffic and cutting excess congestion in large urban areas.**

**Using AASHTO for Traffic Light Adjustment Located in Amioun, North Lebanon**

**ECMT Round Tables Traffic Congestion in Europe**

**Implications for the United States**

**Still Stuck in Traffic**

**Traffic Congestion Effects on Supply Chains: Accounting for Behavioral Elements in Planning and Economic Impact Models**

**Surface Transportation Congestion**

Current studies underestimate the costs of congestion in Canada's major cities, with a focus on time lost in traffic. Governments also need to include the wider economic benefits that are foregone because of urban congestion.

The purpose of this thesis is to quantify the economic costs associated with traffic crashes for 83 of the largest metropolitan areas in the United States and compare those costs to that of congestion. This was done by collecting injury and fatality data for each area and multiplying those by economic cost estimates for each developed by the FHWA. The findings of this analysis show that the economic cost of traffic crashes exceeds the economic costs of congestion in every metropolitan area studied. These results indicate that transportation safety deserves similar consideration to that of traffic congestion when allocation transportation funds.

This Round Table defines congestion and determines the scale of the problem. It addressed the trends in congestion and the consequences of those trends. The Round Table then considered possible solutions to the congestion problem.

Linking Solutions to Problems

Innovations and Case Studies

A Pricing Approach

An Evaluation of Japanese Environmental Regulations

Economic Impacts of Intelligent Transportation Systems

Freight Transportation

The erection of tollgates along the N1 freeway has triggered a great deal of interest. As a result of the toll fees, traffic has been diverted to alternative roads. This study investigates how traffic diverted from the toll road affect the welfare of users of the alternative road. The literature review provides a theoretical framework of economic impact assessment and road pricing. Furthermore, the literature study reviews previous studies of a similar nature and compare them with the findings of this study. There is no conclusive evidence that diversion of traffic from the N1 causes congestion on the R101 and has a negative impact on the economy of the region. On the contrary, evidence suggests that there was an initial diversion of traffic when the toll came into operation but that is slowly filtered back after six months. In the application of the RED model, economic benefits are derived from user benefits, which is a function of savings in VOC's and time of normal and generated traffic on a road or saving due to an improvement in road safety, resulting from improved roads. A decrease in traffic has a measurable effect on vehicle travel speeds and travel time only when the roads are significantly congested. In the case of scenario 1 (including diversion), frequent maintenance needs to be performed under increased traffic. Increased traffic due to diverted traffic causes congestion in accidents and travelling time, which is a cost to the economy. Under scenario 2 (excluding diversion), it is assumed that ADT will return to normal. Due to lower levels of congestion and travelling times would be faster, while maintenance costs and accident rates would decrease. Scenario 2 is selected as being economically the most feasible option. It is clear that the R101 cannot cope with the current levels of traffic and congestion. One can speculate about the causes of the congestion but in order to derive at a solution to the problem more research needs to be done on the cause of the congestion in order to resolve the problem.

Congested roads waste commuters' time, cost them money, and degrade the environment. Most Americans agree that traffic congestion is the major problem in their communities;and it only seems to be getting worse. In this revised and expanded edition of his landmark work *Stuck in Traffic*, Anthony Downs examines the benefits and costs of various anticongestion strategies. Drawing on a significant body of research by transportation experts and land-use planners, he counters environmentalists and road lobbyists alike by explaining why seemingly simple solutions, such as expanding public transit or expanding roads, have unintended consequences that cancel out their apparent advantages. He argues that while there might be some measurable gains from increasing housing densities, most other land-use strategies have little effect. Indeed, the most powerful solutions, including higher gasoline taxes, increased public funding for transit, and highway tolls, are also the least palatable politically. *St ill Stuck in Traffic* contains new material on the causes of congestion, its dynamics, and its relative incidence in various parts of the country. In clear and realistic terms, Downs seeks to explore why traffic congestion has become part of modern American life and how it can be kept under control.

Traffic congestion at arterial intersections and freeway bottlenecks degrades the air quality and threatens the public health. Conventionally, air pollutants are monitored by sparsely-distributed Quality Assurance Air Monitoring Sites. Sparse mobile crowd-sourced data, such as cellular network and Global Positioning System (GPS) data, contain large amount of traffic information, but have low sampling rate and penetration rate due to the cost limit on data transmission and archiving. The sparse mobile data provide a supplement or alternative approach to evaluate the environmental impact of traffic congestion. This research establishes a framework for traffic-related air pollution evaluation using sparse mobile data and traffic volume data from California Performance Measurement System (PeMS) and Los Angeles Department of Transportation (LADOT). The proposed framework integrates traffic state model, emission model and dispersion model. An effective tool is developed to evaluate the environmental impact of traffic congestion for both arterials and freeways in an accurate, timely and economic way. The proposed methods have good performance in estimating monthly peak hour fine particulate matter (PM 2.5) concentration, with error of 2 ug/m3 from the measurement from monitor sites. The estimated spatial distribution of annual PM 2.5 concentration also matches well with the concentration map from California Communities Environmental Health Screening Tool (CalEnviroScreen), but with higher resolution. The proposed system will help transportation operators and public health officials alleviate the risk of air pollution, and can serve as a platform for the development of other potential applications.

Freight Transportation Flows

Trends, Impacts, and Mitigation Efforts

Peak-Period Fees to Relieve Traffic Congestion -- Special Report 242

Economic Impacts of Access Management

The Economic Impact of Traffic Crashes

*Economic growth and globalisation create traffic growth, leading to congestion, which again increases travel times and costs. Road pricing is an instrument that may efficiently reduce the negative impacts. This volume is a collection of research papers on the use of road pricing. The focus is on passenger transport, and the papers cover a wide range of approaches, including theoretical modelling and empirical studies of road pricing experience from different cities.*

*Today, the Bay Area is home to the most successful knowledge economy in America, while Los Angeles has fallen progressively further behind its neighbor to the north and a number of other American metropolises. Yet, in 1970, experts would have predicted that L.A. would outpace San Francisco in population, income, economic power, and influence. The usual factors used to explain urban growth—luck, immigration, local economic policies, and the pool of skilled labor—do not account for the contrast between the two cities and their fates. So what does? The Rise and Fall of Urban Economies challenges many of the conventional notions about economic development and sheds new light on its workings. The authors argue that it is essential to understand the interactions of three major components—economic specialization, human capital formation, and institutional factors—to determine how well a regional economy will cope with new opportunities and challenges. Drawing on economics, sociology, political science, and geography, they argue that the economic development of metropolitan regions hinges on previously underexplored capacities for organizational change in firms, networks of people, and networks of leaders. By studying San Francisco and Los Angeles in unprecedented levels of depth, this book extracts lessons for the field of economic development studies and urban regions around the world.*

*In recent years more emphasis has been placed in transport research on using existing roads as efficiently as possible in order to diminish the impact of traffic congestion. This book describes new theoretical, empirical and simulation models to analyse the impact of information provision to drivers and road pricing on congestion levels. It is the first publication presenting a wide variety of economic models to study information and road pricing effects jointly.*

*Road Pricing, the Economy and the Environment*

*Curbing Gridlock*

*Lessons from San Francisco and Los Angeles*

*Developing National Strategy Would Benefit from Added Focus on Community Congestion Impacts*

*Information and Pricing in Road Transportation*

*Road Pricing and Public Transport Finance*

This book on road traffic congestion in cities and suburbs describes congestion problems and shows how they can be relieved. The first part (Chapters 1 - 3) shows how congestion reflects transportation technologies and settlement patterns. The second part (Chapters 4 - 13) describes the causes, characteristics, and consequences of congestion. The third part (Chapters 14 - 23) presents various relief strategies - including supply adaptation and demand mitigation - for nonrecurring and recurring congestion. The last part (Chapter 24) gives general guidelines for congestion relief and provides a general outlook for the future. The book will be useful for a wide audience - including students, practitioners and researchers in a variety of professional endeavors: traffic engineers, transportation planners, public transport specialists, city planners, public administrators, and private enterprises that depend on transportation for their activities.

Surface transportation congestion most likely will be a major issue for Congress as it considers reauthorization of the Safe, Accountable, Flexible, Efficient Transportation Equity Act -- A Legacy for Users (SAFETEA), P.L. 109-59, which is set to expire on 30 September 2009. By many accounts, congestion on the nation's road and railroad networks, at seaports and airports, and on some major transit systems is a significant problem for many transportation users, especially commuters, freight shippers, and carriers. Indeed, some observers believe congestion has already reached crisis proportions. Others are less worried, believing congestion to be a minor impediment to mobility, the by-product of prosperity and accessibility in economically vibrant places, or the unfortunate consequence of over reliance on cars and trucks that causes more important problems such as air pollution and urban sprawl. Trends underlying the demand for freight and passenger travel -- population and economic growth, the urban and regional distribution of homes and businesses, and international trade -- suggest that pressures on the transportation system are likely to grow substantially over the next 30 years. Although transportation congestion continues to grow and intensify, the problem is still geographically concentrated in major metropolitan areas, at international trade gateways, and on some intercity trade routes. Because of this geographical concentration, most places and people in America are not directly affected by transportation congestion. Consequently, in recent federal law, Congress, for the most-part, has allowed states and localities to decide the relative importance of congestion mitigation vis-a-vis other transportation priorities. This has been accompanied by a sizeable boost in funding for public transit and a more moderate boost in funding for traffic reduction measures as part of a patchwork of relatively modest federally directed congestion programs. Congress may decide to continue with funding flexibility in its reauthorization of the surface transportation programs. States and localities that suffer major transportation congestion would be free to devote federal and local resources to congestion mitigation if they wish. Similarly, congestion-free locales would be able to focus on other transportation-related problems, such as connectivity, system access, safety, and economic development. Alternatively, Congress may want to more clearly establish congestion abatement as a national policy objective, given its economic development impact, and take a less flexible and, in other ways, more aggressive approach to congestion mitigation. Three basic elements that Congress may consider are (1) the overall level of transportation spending, (2) the prioritization of transportation spending, and (3) congestion pricing and other alternative ways to ration transportation resources with limited government spending. Congress also may want to consider the advantages and disadvantages of specific transportation congestion remedies. Hence, this book discusses the three basic types of congestion remedies proposed by engineers and planners: adding new capacity, operating the existing capacity more efficiently, and managing demand.

Projected increases in the transport of freight by rail and truck may produce economic benefits but also increase traffic congestion in communities. The Moving Ahead for Progress in the 21st Century Act (MAP-21), which contains provisions designed to enhance freight mobility, is currently before Congress for reauthorization. This report reviewed trends in freight flows and any related traffic-congestion impacts. It addresses among other things: (1) recent changes in U.S. rail and truck freight flows and the extent to which related traffic congestion is reported to impact communities; and (2) the extent to which the Department of Transportation's (DOT's) efforts to implement MAP-21 address freight-related traffic congestion in communities. Tables and figures. This is a print on demand report.

Trends, Measures, and Effects

Submitted to the Federal Railroad Administration, U. S. Dept. of Transportation

A New Approach to Evaluating Government Infrastructure Investment

The Cost of Air Pollution

Urban Traffic Congestion in Europe

The Problem and how to Deal with it

*Transportation systems are the economic foundation of any regional development. Our reliance on transportation to move goods and resources and to ensure access to labor to increase productivity, all have tremendous impact on revenue generation and growth. Traffic congestion is an inevitable byproduct of economic growth; the costs of traffic is not just time wasted, but also include the financial loss and environmental impacts of fuel being wasted. As an effort to understand congestion formation, this project investigates modeling traffic as a network and uses a percolation model to identify a normal traffic pattern as exhibited by the inhabitants of the region. Using real street maps from the OpenStreetMap project, morning, noon, and evening rush-hour traffic zones in Westwood Village were created to simulate the travel behavior of the inhabitants. The street bottlenecks identified for a 24-hr period were then compared to those formed from a uniform traffic flow. The results from this study may provide the foundation for a reasonable starting configuration for a self-organizing traffic light network that can dynamically adapt to unexpected demand in real-time.*

*... this book is an interesting collection of papers on the topic of road congestion pricing. . . The reader should find this collection to be both interesting and informative, but also quite thought-provoking. . . The papers also provide some very useful information about projects that have not worked or have not been implemented for various reasons and lessons that can be learnt from failures to implement and failures of pricing schemes. Peter R. Stopher, International Planning Studies In February 2003, the London Congestion Charging Scheme was introduced and in 2006 a similar policy was introduced in Stockholm. In both cases automobile traffic entering the cordon declined by about 20 percent. This book evaluates these and other similar programs exploring their implications for the United States. While there is increasing interest in road pricing in the US in many individual states, the motivation is often highway financing rather than*

congestion relief. *The contributors argue that the prospects for extensive implementation in the US remain uncertain. Nevertheless, this book illustrates that the European experience suggests political feasibility is much less of a hurdle than was once considered and that congestion pricing would have a significant impact in reducing traffic as it did in Europe. This study's value lies in the fact that it examines road pricing in the real world and not simply from a theoretical viewpoint. As a comparative study it will appeal to both policymakers and academics in transportation economics and planning, urban economics, planning and economic geography.*

*The Federal Highway Administration and Federal Transit Administration requested that the Transportation Research Board and the Commission on Behavioral and Social Sciences and Education of the National Research Council conduct a study of congestion pricing for congestion management. To conduct this study, the National Research Council established the Committee for Study on Urban Transportation Congestion Pricing. The committee's deliberations were supplemented by liaison representatives from several groups concerned about the benefits and costs of congestion pricing. After a review of the literature, and drawing from its expertise, the committee commissioned papers on a variety of topics. Volume 1 contains the committee's overview of the material contained in the commissioned papers, its conclusions, and its recommendations regarding the potential of congestion pricing, the need for evaluation of early demonstrations, and other research needs. Volume 2 provides a rich array of information about individual case studies from around the nation and thoughtful analyses by individual scholars about many of the critical issues surrounding congestion pricing, as revised by their authors after the symposium.*

*Cars, Congestion and Costs*

*Health Impacts of Road Transport*

*Economic Impact Analysis : Trinity Parkway Corridor*

*Environmental impacts and potential of the sharing economy*

*The Impact of Declining Mobility in Major Texas and Other U.S. Cities*

*Managing Urban Traffic Congestion*

With a growing dependence on broader regional and global markets, the value of transportation connections becomes increasingly important for business competitiveness. To address this concern, the Portland Business Alliance, Port of Portland, Metro and Oregon DOT collaborated in a unique public-private cooperative effort. The group hired Economic Development Research Group to conduct a study of the economic impact of congestion and its stakes for the region's economy. The study included analysis of the region's economic clusters, the economic dependence on traded industries and transportation connections, and the economic role of the region's port/gateway and hub transportation facilities. Interviews were conducted with executives in all sectors of the economy to identify how their business is affected by traffic congestion. The findings included examples of how congestion had affected the breadth of delivery markets, distribution warehouse locations, inventory levels, shift scheduling, overtime costs and technology worker recruitment.

The Trinity Parkway Corridor MTIS was initiated to identify traffic alternatives through the Dallas Central Business District, improving traffic flow and providing hazard and congestion relief. Insight was retained to prepare economic, employment and tax impacts for the multi-phased Trinity Parkway Corridor MTIS for one alignment scenario.

Projected increases in the transport of freight by rail and truck may produce economic benefits but also increase traffic congestion in communities. MAP-21, which contains a number of provisions designed to enhance freight mobility, is currently before Congress for reauthorization. GAO was asked to review trends in freight flows and any related traffic-congestion impacts. This report addresses among other things: (1) recent changes in U.S. rail and truck freight flows and the extent to which related traffic congestion is reported to impact communities, and (2) the extent to which DOT's efforts to implement MAP-21 address freight-related traffic congestion in communities. GAO analyzed rail data from 2007 through 2012 and highway data from 2010 and 2012 and reviewed 24 freight-related traffic congestion mitigation projects at 12 locations selected on the basis of different geographical locations and sizes. The results are not generalizable. GAO also reviewed federal laws and interviewed freight stakeholders.

Major Traffic Investment Study - Dallas, Texas

Traffic Congestion

Coping with Peak-Hour Traffic Congestion

Traffic Congestion and Its Economic Impact in Dhaka City

What Can We Do about Urban Traffic Congestion?

Final Report

There are unique complexities associated with the economic valuation of Intelligent Transportation Systems (ITS) and telematics. Traditional methods of quantitative analysis may not be appropriate in accurately and reliably assessing the economic impacts of these technologies. Although advanced transportation and related technologies are being planned and deployed at an increasingly rapid pace, many of the technologies are still relatively new, and their use may not be widespread. Much of the initial information and statistics gathered have been anecdotal and have focused more on benefits rather than costs. Therefore, difficulties arise due to the lack of historical data and 'lessons learned' from which to draw upon. In addition, compared with traditional transportation infrastructure, ITS technologies have different life cycles, cost structures, and a number of interrelated elements. This book addresses these concerns and proposes new economic assessment techniques as well as modifications to existing ones. Included are case studies from a multitude of North American, European, and Asian nations and major metropolitan areas covering a wide range of ITS technologies including freeway management, electronic toll collection, advanced driver assistance systems, and traveller information systems.

The various sharing initiatives seen in the Nordic countries over the last years within transportation, housing/accommodation, sharing/renting of smaller capital goods and personal services could yield considerable benefits for consumers due to better quality and/or lower prices of the services. They also have a potential for emissions reductions of CO2 and local pollutants. However, savings from lower prices could lead to increased emissions from increased demand of the services (particularly transport) and increased spending on other goods and services. Depending on how consumers spend their savings, these changes could partly, wholly or more than offset the initial emission reductions. The impacts on overall CO2 emissions depend on whether the emissions are taxed, part of the emissions trading system EU ETS or not regulated at all.

Road Traffic Congestion: A Concise Guide

Economic Impact of Traffic Incidents on North Carolina's Interstate Facilities

America's Rolling Warehouses

Quantitative Approaches from Environmental Economics

The Wisconsin State Rail Plan

Cost of Congestion to the Portland Region