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# **RCF**

**Economic and Financial Consulting, Inc.**

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## *RCF Overview*

Founded in 1978, RCF is an economic and financial consulting firm led by internationally renowned economists. The firm has worked on a wide variety of projects and applies high level economic and statistical analyses to solve important problems. Results are used to advise clients on strategic business decisions, to provide policy analyses for businesses and public agencies, and to provide support for litigation and regulatory proceedings including expert testimony.

### **Market Economics**

Emphasizing sound economic principles, RCF often applies sophisticated statistical and econometric techniques to the analysis of demand and supply factors in diverse product and service markets. RCF has provided sales forecasts to the U.S. Postal Service and testimony before the Postal Regulatory Commission for over two decades. RCF has performed a wide variety of studies including product demand and sales forecasting, evaluation of financing strategies, regional and local economic forecasting, economic impact studies, zoning studies, local tax policy analysis, analyses of labor economics, studies of real estate markets, and business damage assessments and lost wages analyses. RCF economists have provided litigation support and testimony in official proceedings, including those involving lost earnings, lost profits, and impacts of regulatory actions.

### **Energy Economics**

RCF has extensive experience in energy economics including electric power, fuels, and the utility industry. Economists at RCF have been retained by utilities, large electric energy consumers, and the U.S. Department of Energy to perform a wide variety of studies ranging from resource planning and rate design, to demand side management and evaluation of energy conservation programs. RCF has assisted in a wide variety of negotiations and has provided key expert testimony in numerous regulatory proceedings. RCF recently led a 4-company team to prepare a report to Congress for the Department of Energy on the employment impacts of a transition to a hydrogen economy.

### **Environmental Economics**

RCF experts helped pioneer the multidisciplinary analysis of the costs and benefits of activities affecting the environment and have extensive experience in direct and indirect damage estimation utilizing methodologies such as contingent valuation, hedonic estimation, travel cost measurements, and input-output analysis. RCF has participated extensively in environmental regulatory proceedings and litigation. RCF is also able to offer clients planning support for compliance with developmental, zoning, and planning regulation from an environmental perspective. This service has been very useful to clients in formulating long-term policy, as well as settling disputes during litigation.

### *RCF Expert Staff*

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**For each assignment, RCF selects a team from its staff of experienced professionals to achieve the client's objectives.**

<b>Experience</b>	RCF economists and other staff have extensive experience in economics, statistics, finance, litigation, policy and regulations, and project management.
<b>Technical Staff</b>	RCF employs a staff of full time statisticians and econometricians versed in the most modern data analysis techniques. In addition, RCF employs other staff with business, strategy, market survey, and management expertise.
<b>Multidisciplinary</b>	RCF has developed professional affiliations with other leading professional consultants.
<b>Prominently Cited Work</b>	Economists associated with RCF have completed studies that have been quoted widely, and have published industry recognized books.
<b>Affiliations</b>	Staff members and associates maintain teaching and research affiliations with The University of Chicago and several other of the finest institutions in the nation.
<b>Tools</b>	RCF professionals have developed powerful analytical tools to provide the highest quality service to clients.

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## *Consulting Services*

### **RCF has worked in a variety of contexts, including:**

#### **Market Analyses**

RCF has analyzed demand and supply factors and prepared forecasts for a variety of products and services. RCF has completed detailed evaluations of market consequences of proposed or anticipated changes in market conditions for businesses in many industries. RCF analyzes demographic trends and evaluates regional economic changes using input-output and econometric techniques.

#### **Economic Development**

RCF has performed many economic development studies including local economic forecasting, economic impact studies, zoning studies, local tax policy analysis, labor economics studies, analyses of real estate markets, business damage assessments and lost wages analyses.

#### **Policy Evaluation**

RCF has analyzed a wide variety of policy initiatives and regulations proposed by state and federal agencies.

#### **Strategic Planning**

RCF provides economic analysis of alternative strategies, and estimation and forecast of product demand and costs.

#### **Analysis to Support Financing**

RCF economists have prepared market studies and revenue and cash flow forecasts to support financing requests and a variety of land use projects.

#### **Expert Testimony**

RCF economists have prepared and delivered expert witness testimony in a wide variety of civil and regulatory proceedings.

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## *RCF Clients*

**RCF has served a very wide range of clients:**

**State and Federal Agencies**

**Law Firms**

**City and County Agencies**

**Financial Institutions**

**Developers**

**Businesses**

**Utility Companies**

**Industry Associations**

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A.T. Kearney  
 American Petroleum Institute  
 AMEX International  
 Argonne National Laboratory  
 Arthur Andersen  
 Baker, Botts  
 Bank of America  
 BetaSoft  
 Bollinger, Ruberry, & Garvey  
 Center for Naval Analysis  
 Chicago Board of Trade  
 Chicago Milwaukee Corporation  
 City of Chicago  
 City of Saint Louis  
 Commonwealth Edison  
 Corporate Governance Service  
 Covington and Burling  
 Delta  
 Domaine  
 Employment Policies Institute  
 Fitzpatrick, Cooper & Clark  
 Field Museum of Chicago  
 Foley and Lardner  
 ETA Engineering  
 Exxon Corporation  
 Florida Fish & Wildlife Conservation  
 Commission  
 Foley & Lardner  
 Furabo Technologies  
 Gary Skoog Enterprises

Greater Houston Partnership  
 Greater Providence Chamber of  
 Commerce  
 Hannoch & Weissman  
 Harding Lawson Associates  
 The Haymarket Group  
 Inland Real Estate Development Corp.  
 Illinois Dept of Energy and Natural  
 Resources  
 Illinois Environmental Protection  
 Agency  
 Illinois Institute of Natural Resources  
 Illinois Pollution Control Board  
 Illinois Retail Merchants Association  
 Jasculca-Terman and Associates  
 Jerome Smith Associates  
 Kansas City Power & Light Company  
 Landrum & Brown, Inc.  
 LaSalle National Bank  
 Lewis & Clark  
 Liberty Prairie Foundation  
 Lindquist & Vennum  
 Mid-North Financial Services, Inc.  
 Ira Miller  
 Monsanto Corporation  
 Motorola  
 National Coal Conference  
 National Commission on Air Quality  
 National Energy Technology  
 Laboratory

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Oak Ridge National Laboratory  
Olympic Savings and Loan  
Pacific Gas & Electric Company  
Palmer-Bellvue  
Peoples Gas Light & Coke  
Pomper and Goodman  
Potomac Electric Power Company  
PRC Planning & Economics  
Prudential Capital  
Public Building Commission  
Resource Insight, Inc.  
Robert L. Stone  
Saudi Aramco  
Sidley and Austin  
Sills, Cummis, Radin, Tischman,

Epstein & Gross, P.A.  
Spectrum Economics  
Stone Container Corporation  
Supply Association of New Zealand  
TIG Insurance  
Underwriters Laboratory  
U.S. Department of Commerce  
U.S. Department of Energy  
U.S. Department of Justice  
U.S. Environmental Protection Agency  
U.S. Fish & Wildlife Service  
U.S. Postal Service  
Village of Willow Springs  
Westpac Banking Corp.



## *Market Economics & Economic Development*

RCF has performed market studies including econometric and statistical forecasting, regional and local economic forecasting, demographic analysis, economic impact studies, zoning studies, local tax policy analysis, labor economics studies, analyses of real estate markets, business damage assessments and lost wages analyses. RCF has provided sales forecasts to the U.S. Postal Service and testimony before the Postal Regulatory Commission for over two decades.

To assist client decision making, RCF has analyzed demand and supply factors and prepared forecasts for a variety of products and services. RCF has completed detailed evaluations of market consequences of proposed or anticipated changes in market conditions for businesses in many industries and for agencies at all levels of government.

RCF has extensively studied the effects of regulations, including taxation policy, on federal, state, and local government agencies, and on local businesses and labor pools.

RCF is experienced in the analysis of demographic trends and the evaluation of regional economic changes. This work has involved the extensive use of input-output and econometric techniques.

Economists from RCF have provided expert testimony based on thorough economic analysis of events under litigation. Cases have involved lost earnings, lost profits, and anti-trust issues in a variety of industries.

## *Market Economics Consulting Services*

RCF has provided economic analysis to assist clients in many areas, including:

- **Econometric and statistical forecasting**
- **Product demand analysis & forecasting**
- **Regional employment forecasting & labor economics**
- **Local economic forecasting**
- **Economic base analysis**
- **Economic impact studies & zoning analysis**
- **Local tax policy analysis**
- **Real estate markets**
- **Business damage assessment and lost wages**
- **Demographic trend analysis**
- **Real estate financial feasibility analysis**
- **Development impact mitigation strategies**
- **Tax incremental financing analysis (TIF)**
- **Evaluation of public/private financing strategies for development**
- **Analysis of condemnations involving unusual rights**
- **Urban housing policy evaluation**
- **Questionnaire design and survey analysis**

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## *Market Economics Experience*

### **Quarterly Report on US Economy Prudential Capital Group, 2003-present**

RCF Economists prepare a quarterly report on the outlook for the US economy for Prudential Capital Group, which is then in turn distributed to Prudential's clients. The report presents an overview of recent economic trends affecting interest rates, economic growth, and employment and includes analysis and projections of Federal Reserve policy and a variety of economic indicators. On an annual basis, RCF also provides an in-depth analysis of a particular key issue. Past issues have included the long-term outlook for inflation, the ongoing decline in the US dollar, and the housing market slump.

### **Sales Forecasting and Expert Support U.S. Postal Service, 1978-present**

Under contract to the United States Postal Service, RCF uses econometric, statistical and other quantitative techniques to analyze and forecast the sales volume of over twenty classes of domestic mail and seven classes of international mail. RCF has supplied the Postal Service volume testimony and oral cross examination witnesses in every general rate case before the Postal Rate Commission since 1980. RCF's mail volume forecasts are used by the Postal Service for many aspects of planning including pricing, budgeting, resource allocation and marketing. Our service to the Postal Service includes specialized demand studies and custom computer software.

### **Advertising Expenditures and Effectiveness U.S. Postal Service, 1995-present**

RCF economists apply economic models to advertising industry expenditures and econometrically estimate specific effects of developments in electronic communication and electronic commerce, changes in the regulatory regime of financial institutions, and declining readership rates for print media. RCF provides forecasts for advertising trends, and analyzes the effectiveness of direct mail advertising.

### **The Economic Impact of Oil Production in Illinois Illinois Oil & Gas Association, 2009**

RCF conducted the first comprehensive study of the economic impacts of the oil production industry on the Illinois economy using input-output modeling, extensive research, and interviews with industry leaders. Employment, income and output impacts were presented and mapped by legislative districts. Results of the study were presented at the 2009 IOGA Conference.

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## **The Economic Impact of Residential Property Sales in Illinois** **Illinois Association of Realtors, 2008**

RCF conducted an analysis of the economic impacts of buying and selling residential property on the overall Illinois economy. In addition, impacts were calculated for 11 individual metropolitan statistical areas (MSA) throughout the state.

## **Effects of Proposed Illinois Gross Receipts Tax (GRT)** **Illinois Association of Realtors, 2007**

RCF analyzed proposed legislation which would have fundamentally changed the business tax structure in Illinois. RCF estimated the magnitude of the cascade effect of a gross receipts tax on the price of a house in Illinois. Employment impacts on the construction industry also were analyzed. RCF presented results in testimony before a special full session of the Illinois House of Representatives.

## **Litigation Support in a Discrimination Case in Kyle, Texas** **City of Kyle, Texas, 2007**

In a case defending the City of Kyle's new zoning ordinances against charges of racial discrimination, RCF corrected impact calculations conducted by expert witnesses for the plaintiff and showed that any differential impact on housing affordability by ethnic group was minimal.

## **Retail Chain Stores and Economic Development in Chicago** **Illinois Retail Merchant Association (IRMA), 2004**

RCF testified before the Chicago City Council on the relation between retail chain stores and economic development in various Chicago neighborhoods. The testimony documented the absence of large retail stores in low income communities, and the corresponding lack of retail employment opportunities for residents of those communities. The experience of Chicago's low income communities was contrasted with other areas of the city where existing retail chains were found to be economic magnets, spurring increases in employment and business activity.

## **Analysis of Financial Market Innovations and Regulations** **Chicago Board of Trade, 2004**

RCF analyzed the effects of call-around markets on the information quality of derivatives prices for one of the nation's foremost financial markets. A call-around market is an off-exchange trading venue where trades are arranged by telephone instead of through a central exchange and then cleared through exchange facilities and serve as an adjunct to the main trading venue, but the results of the trades are not necessarily reported immediately. A prime example of a call-around market is Eurex's futures-options trading on German debt instruments. As electronic trading becomes

more prevalent, questions arise as to the desirability of allowing call-around trading. RCF's report evaluated the benefits and costs of call-around practices.

### **Local Economic Forecasting for Business Planning**

**Bank of America, 2003**

As part of one Chicago bank's acquisition program, RCF was asked to examine the demographic and economic trends for communities in the southern suburbs of the Chicago metropolitan area. Historical trends were identified using Census Bureau data at the census tract level. Community characteristics examined included population, employment, income, housing and racial composition. Factors affecting trends in these characteristics were identified, including local influences such as geography, transportation systems and major employers as well as external influences such as population and economic growth in the larger metropolitan area, income displacement, and racial displacement. RCF also prepared predictions of demographic trends for each community in the area.

### **Bankrupt Condominium Development**

**Bank of America, 2003**

RCF assisted one of the nation's three largest financial institutions defend itself in the penalty phase of an \$80 million lawsuit regarding responsibility for the bankruptcy of a large, oceanfront condominium in Atlantic City, New Jersey. RCF's analysis and testimony resulted in an out-of-court settlement for a small fraction of the original claim.

### **Earnings Loss**

**Confidential Client, 2002**

RCF provided litigation support for a lost earnings case filed by a professional football player against the NFL and its insurance company. RCF economists provided an extensive analysis of the present value of lost earnings, as well as the statistical length of the player's career, based on NFL player data. These reports were used by the NFL's insurance provider as the basis for settlement.

### **Guidelines for Foreign Businessmen in the United States**

**Samsung Corporation, 2002**

George Tolley developed and presented a lecture for Korean businessmen on the structure of and operation of the U.S. economy and its institutions as part of the 2002 Samsung Global Expert Program.

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## **Impact of Zoning Regulations on Labor Supply and Metropolitan Growth**

**Mid-North Financial Services, Inc., 2000**

Down-zoning regulations in the City of Chicago have restricted residential densities below what would have been achieved by the market. RCF showed the impact of these regulations on prices and the supply of moderately priced housing affordable by entry-level workers, the subsequent job loss for the city, and the multiplier losses of income for the city. These regulations were subsequently struck down.

## **Race and the Cost of Housing**

**Confidential Client, 2000**

RCF economists offered testimony in deposition before a U.S. District Court on the effects of race on housing prices and mortgage interest rates.

## **Tax Increment Financing**

**City of Chicago, 1998**

RCF has worked extensively in the area of Tax Increment Financing (TIF), performing economic impact studies, and forecasting likely effects of TIFs in several areas. Most recently, RCF economists assisted the City of Chicago in determining which areas in Chicago would most benefit in the short and long terms from application of Tax Increment Financing.

RCF economists recommended methods of estimating the revenue effects of using tax increment financing and applied the proposed methods in evaluating the technique for financing the North Loop Redevelopment Program in Chicago. RCF has analyzed the important complexities of TIFs: whether application of TIFs will cause temporary vs. permanent employment increases, and if business created in TIFs will result in overall additions to the urban economy, or simply shift economic activity from some other part of the city.

## **Urban Taxation Policy**

**Fitzpatrick, Cooper and Clark, 1998**

For the City of Yonkers, New York, RCF analyzed proposed tax initiatives and examined the tax effects upon employment, firm location decisions, and public service provisions. RCF also provided an analysis of finance projections for the Yonkers public schools. RCF economists provided expert testimony based on the analyses.

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## **Airport In-Flight Passenger Survey Study**

**Landrum & Brown, 1997**

For the City of Chicago, RCF conducted a survey of more than 7,500 in-flight passengers at Chicago O'Hare International Airport. RCF designed the questionnaire with stratified sampling techniques to ensure that the survey matched the characteristics of all scheduled departures. The questionnaire enabled facility planners to understand passenger trends, evaluate airport services, and model future terminal building facilities.

## **International Market Study of Telecommunications**

**Motorola, 1997**

RCF analyzed the market penetration of two-way radio in Germany to estimate market potential in the developing countries of Eastern Europe, Northern Africa, and the Middle East. RCF economists estimated the increases in GNP due to worker productivity increases made possible by the use of two-way radio, and forecast potential gains for different regulatory regimes. The client used this report to negotiate with government agencies for greater access to their nation's radio spectrum.

## **Regional Housing Supply**

**United States Navy, 1996**

RCF provided an analysis on the effects upon regional housing markets of discontinuing the provision of on-base housing. The study analyzed regional employment and residential patterns, housing supply and demand elasticities, and the effects upon new housing construction.

## **Regional Employment Effects 1996**

**City of Chicago, 1996**

RCF analyzed the employment effects of a proposed minimum wage ordinance for the city of Chicago. RCF economists analyzed the public sector labor markets for the city and suburb municipal governments. RCF also examined the effects of changes in government employment patterns on the non-government labor market.

## **Analysis of Living Wage Ordinances**

**City of Chicago, 1996**

RCF analyzed the effects of the proposed "Living Wage" (minimum wage increase) ordinance for Chicago employees and contractors. This study included an in-depth investigation of the direct effects of such a policy proposal on budgets and labor supply activity. Furthermore, the study analyzed the indirect effects, and ultimate consequences of creating this new wage policy. The predicted costs to the Chicago economy in terms of direct labor costs, lost business, and decreases in employment were presented in the RCF study "Economic Analysis of a Living Wage"

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Ordinance.” The City of Chicago used this study to help them find alternative approaches to satisfying the advocates of the living wage ordinance.

## **Tax Policy**

### **Amex International, Inc., 1993**

A study was undertaken advising the Gambian government on tax reforms. Policy advice was given on reduction in the company profits tax, taxation of fringe benefits and taxation of rental income. Recommendations were made for improving tax analysis capabilities.

## **Chicago Casino Complex**

### **Jasculka-Terman, 1991**

Estimates were made of effects of the proposed Chicago casino complex on the Illinois economy based on gaming dollars attracted into the state, dollars retained because residents would travel less to other states, and diversion of dollars from other activities within the state. Econometric predictions were made of effects on horse racing attendance.

## **Regional Economic Activity Analysis**

### **The Haymarket Group, 1990**

To assist efforts by Olympic Savings and Loan to avoid takeover by the FDIC's Resolution Trust Corporation, RCF prepared an analysis documenting the depressed economic development of southern Illinois. The report supported qualification of the association for over \$100 million of federal aid by considering theoretical and generally accepted methods of evaluating regional economic conditions. It centered on the definition of depressed regions and showed that the association should qualify as an institution with operations within depressed areas.

## **Zoning and Local Economic Development**

### **Heartland Partners, 1990**

RCF developed estimates of the economic impacts of alternative zoning proposals for Goose Island on Chicago's near northwest side. To forecast tax revenue consequences, RCF analyzed income consequences of industrial retention versus mixed use residential and retail development. The study showed that mixed use zoning was preferable, from the point of view of both employment and tax revenues. RCF presented the results before the Chicago Plan Commission.

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## **Housing and Urban Policy**

**George S. Tolley, 1990**

RCF economists presented testimony before the Presidential Commission on Affordable Housing. A fundamental analysis of the effects of taxation and inflation on home ownership was undertaken for the Department of Housing and Urban Development and support was provided for a re-examination of the relation between the location of jobs and housing.

**Antitrust Testimony****City of Grayslake, 1984**

In a well-known Grayslake antitrust case in which a developer sued local governments over denial of water services, RCF estimated the effects of national and local real estate trends on the ability of the developer to sell houses if he had been allowed to build. RCF economists provided expert trial testimony in this matter.

**Tax Policy****United States Department of the Treasury, 1978**

A study estimating effects of capital taxation on levels and growth of income in OECD countries was completed for the U.S. government. The results were presented at an American Enterprise Institute Conference and edited by Professor John Kendrick.



## *Energy Economics*

RCF has extensive experience in energy economics including electric power, fuels, and the utility industry. Economists at RCF have been retained by utilities, large electric energy consumers, and the U.S. Department of Energy. RCF has assisted in a wide variety of negotiations and has provided key expert testimony in numerous regulatory proceedings.

RCF recently completed a fundamental study of the national and regional employment effects of transitioning from an oil-based economy to a hydrogen-based economy for the U.S. Department of Energy. In addition, RCF is leading a multi-firm effort in modeling the introduction of hydrogen infrastructure.

RCF has also been an important participant in the policy dialogue on issues affecting the electric industry. In 1990, under the auspices of The Harris Graduate School for Public Policy at The University of Chicago, RCF economists helped to convene a conference of utility industry experts concerning the critical issues facing the industry.

## *Energy Economics Consulting Services*

RCF has provided economic analysis to assist clients in many areas:

- **Electric utility regulatory testimony**
- **Asset valuation, credit analysis, and financial modeling**
- **Innovative pricing and rate design**
- **Evaluation of incentive regulation issues**
- **Cost/benefit analysis**
- **Evaluation of demand side management and energy conservation**
- **Analysis of thermal energy storage for utility load management**
- **Acquisition analysis**
- **Integrated least cost planning**
- **Management performance evaluation**
- **Production cost simulation**
- **Load forecasting and capacity planning**
- **Cogeneration finance and viability**

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## *Energy Economics Experience*

### **Agent-Based Modeling for the Introduction of Hydrogen Infrastructure**

**United States Department of Energy, 2006-present**

RCF is leading a multi-firm effort modeling the introduction of hydrogen infrastructure, from the early transition period to a mature hydrogen economy. The agent-based approach models individual actors in the system (vehicle purchasers/drivers and infrastructure investors) and allows detailed investigation of boundedly rational agents, risk perception, risk aversion, expectations formation and learning, and alternative hydrogen infrastructure technologies.

### **Employment Impacts of Transitioning to a Hydrogen Economy**

**United States Department of Energy, 2006-2007**

RCF led a 4-company team to prepare a report to Congress for the U.S. Department of Energy on the employment impacts of a transition to a hydrogen economy in the U.S. This project was executed on an accelerated, 3-month schedule to meet legislative requirements facing DOE. Engineering analysis of new technologies identified sectoral locations (5-digit NAICS industries) of initial impacts, and input-output analysis yielded estimates of secondary and induced impacts. Impacts on five regions were also estimated. Separate analysis estimated effects on U.S. international competitiveness.

### **The Economic Future of Nuclear Power in the United States**

**United States Department of Energy, Argonne National Lab, 2004**

George Tolley and Donald Jones led a team of University of Chicago students and recent graduates, and staff members of Argonne National Laboratory, in an analysis requested by the Undersecretary of Energy of the cost of electricity from new nuclear reactor designs in the United States. The study's findings have been influential in recent legislation and administration policy recommendations, as well as in major utilities' decisions to begin actively considering new nuclear power plants. Donald Jones testified twice on the findings before U.S. House of Representatives committees.

### **Incentive Rate Issues**

**Pacific Gas & Electric, 1992**

RCF developed a series of statistical tests to evaluate alternative schemes of incentive regulation. The goal of the work was to determine whether an improved incentive scheme could be practically implemented in a rate structure. This work

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required the development of a comprehensive database including relevant FERC cost data.

### **Cost/Benefit Analysis**

**City of Chicago, 1990 & 1992**

RCF performed an extensive cost/benefit analysis for the City of Chicago on various alternative scenarios to the City's franchise agreement with Commonwealth Edison Company. The report included in-depth studies of the existing rate structure, demand growth, and energy usage patterns, as well as a comprehensive analysis of the cost and benefits of acquisition of facilities by the City of Chicago.

### **Production Cost Simulation**

**Public Utilities Fortnightly article, 1990**

George Tolley co-authored a paper evaluating different production costs associated with alternative rate-making structures, cost estimates and economic forecasts.

### **Acquisition Analysis of Utility Companies**

**Northern States Power Company, 1988**

RCF evaluated and recommended an acquisition price for a municipal utility including debt versus equity financing, generation asset, regulatory structures, rates structure and design, and valued the utility using engineering, accounting, and economic methods.

### **Evaluation of Energy Conservation Programs**

**Peoples Gas Light and Coke Company, 1987**

RCF assessed the costs and benefits of its energy conservation programs. To do this, RCF managed the collection, organization and analysis of household energy use data both before and after the creation of the conservation programs. A focus of the study was measuring the effects of "free riders," those households who would have undertaken their own conservation measures without any conservation program.

### **Commercial Cool Building Decision Guide**

**Electric Power Research Institute, 1983**

RCF prepared a report detailing the costs and benefits of cool storage in commercial buildings to reduce peak electricity load demand and energy costs.

## **Thermal Energy Storage for Utility Load Management Potomac Electric Power Company, 1980**

RCF addressed the economic attractiveness and marketability of thermal energy storage. This study assessed electric utility load management for commercial building applications within the PEPCO service territory. RCF calculated rates of return on investment for commercially available storage systems and estimated market penetration under alternative assumptions about future load curves and electricity pricing schedules.

## **Economic Effects of Changes in Operating Procedures Commonwealth Edison Company, 1978**

RCF evaluated the overall effects to the Illinois economy of changing from Illinois-based high-sulfur coal to Western low-sulfur coal versus installing air pollution control equipment in order to meet the air pollution control regulations. Findings included increased unemployment for Illinois coal miners, reduced pollution, and lower overall costs to customers.



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## *Environmental Economics*

RCF economists are widely published in the environmental field. Several RCF economists prepared and edited the landmark 1981 four volume treatise, *Environmental Policy*, which provided a multidisciplinary analysis of all areas of environmental policy, including environmental analysis, air quality, water quality, solid wastes, and recreation and aesthetics.

Economists at RCF have written extensively on economic issues and the environment, and in many areas, have been key contributors to the formulation of federal, state, and city policy. Staff members contributed to the conceptualization of a market for emission credits, which is a key element of the 1990 amendments to the Clean Air Act. This continuing policy work has given RCF an advantage in successfully advising clients involved in environmental litigation or settlement discussions.

RCF has participated extensively in environmental regulatory proceedings and litigation. RCF experts helped pioneer the multidisciplinary analysis of the costs and benefits of activities affecting the environment. RCF economists have extensive experience in direct and indirect damage estimation. RCF economists have performed over 100 cost/benefit analyses, utilizing methodologies such as contingent valuation, hedonic estimation, travel cost measurements, and input-output analysis.

RCF is also able to offer clients planning support for compliance with developmental, zoning, and planning regulation from an environmental perspective. This service has been very useful to clients in formulating long-term policy, as well as settling disputes during litigation.

*Environmental Economics Consulting Services*

RCF has provided economic analysis to assist clients in many areas, including:

- Evaluating statutory and regulatory initiatives
- Environmental impact assessment
- Contingent valuation and analysis
- Water and other resource planning
- Remediation cost and benefit analysis
- Compliance planning
- Management of conservation programs
- Valuation of emission reduction credits
- Costs of pollution control technologies
- Cost of compliance delay
- Litigation support and damage analysis
- Solid and hazardous waste siting and waste management systems

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## *Environmental Economics Experience*

### **Economic Impacts of Green Energy In Illinois**

**Environmental Law and Policy Center, 2008**

To help the Environmental Law and Policy Center (ELPC) update its 2001 study, *Repowering the Midwest*, RCF conducted an input-out analysis of the employment and income impacts of building solar and wind generation facilities and of savings from more efficient use of electricity.

### **Local Economic Effects of Impaired Recreation Water Quality:**

#### **Summary Report on Great Lakes**

**International Joint Commission, 2008**

RCF summarized existing economic estimates related to beach and recreation water quality to provide guidance for evaluating the economic benefits from clean and safe Great Lakes beaches and water quality. RCF found significant values related to recreation uses, property values and human health associated with Great Lakes quality. The report provides information for conducting economic analyses and producing benefit transfers estimates for benefits associated with Great Lakes protection and restoration.

### **Local Great Lakes Restoration Financing and Policy: A Resource Guide for Identifying and Measuring Economic Benefits**

**Alliance for the Great Lakes, 2008**

RCF produced a guide to the measurement of economic benefits from local community-based environmental protection and restoration. This included discussion of economic estimates, methodology for primary data collection and analysis and a step-by-step guide for conducting economic impact assessments and benefit transfer and meta-analyses for evaluating economic benefits from local policy measures. The guide also provided a set of resources for identifying local financing and implementation strategies. The report is will be used to add an economic component to the Alliance's overall strategy for identifying, assessing, financing and implementing Great Lakes protection and restoration projects.

### **Economic Impact of Oil Field Development in Saudi Arabia**

**King Fahd University/Saudi Aramco, 2006**

For the King Fahd University of Petroleum and Minerals, RCF estimated the economic impacts of a causeway construction and dredging for oil field development in Manifa Bay in the Saudi Arabian Gulf. RCF provided an assessment of the

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impacts of the development on the commercial fishing industry in the Manifa region and the subsequent employment effects on the Saudi economy.

### **Management Planning for Species Preservation**

**U.S. Fish & Wildlife Service, Florida Fish & Wildlife Conservation Commission/Escambia County, 2005**

RCF's staff and ecological consultants assisted a unique consortium of three public agencies in Florida—the Florida Fish and Wildlife Conservation Commission, the U.S. Fish and Wildlife Service, and Escambia County in the development of a business plan for preserving an endangered species on Perdido Key, just west of Pensacola, which is an area of intense condominium development. The agencies specified the preservation activities in a conservation plan, and RCF estimated their implementation costs over a 100-year period and calculated the values of contributions to a preservation fund that would pay for the program.

### **Recreational Benefit Estimation**

**Joyce Foundation, 2005**

RCF has carried out hedonic and contingent valuation surveys and analysis including litigation support. RCF economists have extensive experience in measuring the value of public goods such as health, safety, and environmental amenities. Projects have included estimation of the benefits of asbestos abatement, beachfront conservation, and urban environmental design.

In a recent example of this kind of analysis, researchers at RCF designed and implemented a large-scale survey of Chicago beach goers to determine the economic value of spending a day at the beach. Using several non-market valuation methods, the study determined the value of a day at the beach and the total seasonal value of the beaches to beach goers. The study also assessed the economic loss associated with the increasing number of swimming bans.

### **Impacts of Environmental Policy on the Competitiveness of Nuclear Power**

**United States Department of Energy, Argonne National Lab, 2003-2004**

RCF conducted a major study of the economic future of nuclear power in the United States for the Undersecretary of Energy in 2003. The baseline comparison of the assessment was the generation costs of new nuclear reactor designs relative to the generation costs of coal-and gas-fired generation with current environmental regulations. An alternative comparison added the costs of carbon sequestration (removal, capture, transportation, and sequestration) to the generation costs of fossil generation.

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## **Least-Cost Implementation of Air Quality Standards**

### **Greater Houston partnership, 2000-2001**

RCF conducted a study for the Greater Houston Partnership on how the City of Houston could comply with the Clean Air Act in view of its reputation as having high levels of air pollution. The study examined the costs and benefits of the proposed state implementation plan (SIP) for reducing air pollution, and short-run and long-run impacts of the SIP on the Houston area economy. RCF proposed an alternative SIP program, eliminating high cost measures that achieve little reduction, and provided for emissions trading and market incentives to promote least cost reductions. The study was instrumental in changing the final plan.

## **Impact of Environmental Disamenities on Property Values**

### **Prairie Crossing, 2000**

RCF identified \$150-\$200 million in property value losses and foregone tax revenue from property value losses caused by the proposed location of a peaking combustion turbine energy facility in Libertyville, Illinois.

## **Emissions Trading**

### **George Tolley, Presentation/Publication, 1996**

RCF analyzed gains and losses from emissions trading programs designed to reduce the cost of environmental regulation. Fourteen slippage factors that reduced the economic benefits of emissions trading were identified. Methods of correcting the slippage factors were suggested. The results of this approach appeared in *Market Based Approaches to Environmental Policy*, University of Illinois Press, 1996.

## **Economic Feasibility of Remediation**

### **Lewis & Clark, 1995**

In a case which tested amendments to Wisconsin environmental law, RCF examined the economic feasibility of remediation options in a case involving chromium contamination. In light of requirements that economic feasibility considerations be included in environmental remediation decisions, RCF compared reductions in exposure under proposed remediation alternatives with their costs. RCF found that moderate levels of remediation satisfied economic feasibility requirements, which resulted in a favorable settlement.

## **Economic Costs of Ozone**

### **City of Chicago, 1993**

RCF analyzed the effects of urban smog in the Chicago metropolitan area on human health and physical structures. The damage estimates RCF produced were

compared to costs of reducing ozone emissions precursors. The study compared the costs of several policy options to bring Chicago into Clean Air Act attainment for ambient air quality standards. This study was published by the Federal Reserve Bank of Chicago, as part of *Cost Effective Control of Urban Smog*, 1993.

## **Business Damages**

### **Domain, 1992**

RCF estimated damages to a feed manufacturer whose property was contaminated by leakage of underground storage tanks from a neighboring gasoline station. To estimate the feed company's loss in sales, RCF examined stigma-induced reductions in sales for products involved in similar incidents including Perrier bottled water, Washington apples sprayed with Alar, Chilean grapes, and the Audi 5000. A favorable settlement was reached in the case.

## **Costs to Coal Industry of Clean Air Regulations**

### **National Coal Conference, circa 1990**

For the National Coal Conference, RCF analyzed the costs to industry of federal clean air legislation, focusing on control of acid rain.

## **Cost of Delay of Compliance**

### **Covington and Burling, 1989**

RCF estimated the financial implications to J.T. Baker Company (a subsidiary of Proctor & Gamble) of different starting dates for implementation of environmental control measures in New Jersey. This study included calculation of the time cost of money, the cost of inflation, and the cost of capital. RCF economists also provided expert testimony for the adjudication process. The ruling was in favor of the estimates provided by RCF.

## **Location of Nuclear Waste Sites**

### **United States Department of Energy, Argonne National Lab, 1989**

For the U.S. Department of Energy, RCF studied the socioeconomic impacts expected from location of a nuclear waste repository at Yucca Mountain, Nevada. To assess proposed waste storage siting, the study evaluated different means of measuring risk perception and risk response behavior. RCF also evaluated the consequences for the Nevada economy of storing nuclear waste.

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## **Economic Impacts of Environmental Regulation**

### **Illinois Department of Energy and Natural Resources, 1980-1985**

RCF has carried out economic impact studies for the Illinois Department of Energy and Natural Resources and has frequently presented testimony before the Illinois Pollution Control Board on a number of environmental regulation issues. The studies used a multidisciplinary approach involving cost of control estimation, air quality modeling, environmental damage assessment and local economic multipliers. Subjects have included:

- Economic Development and Air Quality in the City of Chicago
- Reasonably Available Control Technologies (RACT) for Air Quality Regulation in the State of Illinois
- Alternative Air Pollution Control Strategies
- Costs and Benefits of Location Restrictions on Hazardous Waste Landfills
- Economic Impacts of Proposed Atomic Radiation Regulations
- Financial Assurance for Closure of Waste Disposal Sites

## **Cost of NO<sub>x</sub> Regulation**

### **American Petroleum Institute, circa 1982**

RCF estimated the national costs of a short-term NO<sub>x</sub> control program for the American Petroleum Institute. RCF economists also developed techniques for estimating the benefits and costs of air pollution control based on the analysis of impacts to affected industries.

## **Location of Hazardous Waste Landfills**

### **United States Environmental Protection Agency, circa 1980**

For the U.S. Environmental Protection Agency, RCF developed a methodology for assessing the costs and benefits of alternative locations for hazardous waste landfills, taking account of risks. Factors evaluated included population density, frequency of earthquakes and floods, soil permeability, and haulage distance.

## **Environmental Benefit Estimation**

### **United States Environmental Protection Agency, circa 1980**

For the U.S. Environmental Protection Agency, RCF reviewed and critiqued methods of estimating benefits from controlling air and water pollution.

**Benefits and Costs of Improved Visibility****Energy Impact Associates, 1980**

In response to the Clean Air Act of 1977, RCF studied the costs and benefits of controls on fine particulates resulting from the emission of sulfur dioxide and smog-like aerosols related to nitrogen dioxide. Methods of valuation, types of costs, and income distribution impacts were reviewed.

**Environmental Costs of Coal in the Production of Electricity****George S. Tolley, ORSA/TIMS Conference Presentation, 1978**

George Tolley examined the spatial impacts of increased air pollution from requiring the use of coal-fired boilers in the United States. Effects of pollution on health and property were estimated and ranked.

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*RCF Staff***GEORGE S. TOLLEY, Ph.D.**

George Tolley is President of RCF, a Professor Emeritus of Economics at the University of Chicago, and the author or co-author of 17 books and over 100 articles in professional journals. He has held executive positions in the Federal Government, including Deputy Assistant Secretary of the Treasury for Tax Policy and Director of the Economic Development Division of the U.S. Department of Agriculture. Dr. Tolley was Director of the Center for Urban Studies at the University of Chicago from 1978 to 1985.

Dr. Tolley is a Fellow of the American Association for the Advancement of Science (AAAS). He has served on committees of the National Academy of Science, including Automotive Pollution, Water Policy, and Energy Engineering. He founded and is now Honorary Editor of the Elsevier professional journal *Resource and Energy Economics*.

Dr. Tolley has conducted several projects for the Wisconsin Electric Power Company, Commonwealth Edison, the Edison Electric Institute, and Peoples Gas. These projects included evaluation of company environmental and conservation programs, forecasts of the impacts of new regulation; and market analysis of plant construction plans.

Dr. Tolley has analyzed proposed environmental regulations for the Illinois Department of Energy and Natural Resources and has testified at the Illinois Pollution Control Board. Dr. Tolley has been an advisor to the Department of Environment of the City of Chicago and has performed economic analyses for many private companies as well as the City of Chicago.

Dr. Tolley is influential in policy formation and change at the international, federal, and local level. He has performed extensive international work for the World Bank and the Agency for International Development. He has served as an economic policy consultant to the governments of China, Venezuela, Panama, Korea, Thailand, Iran, and Gambia. He has made major recommendations on agricultural and natural resource policies, housing privatization, regional development, and taxation.

Dr. Tolley directs RCF's mail volume forecasting work for the U.S. Postal Service, and has served as the chief witness for the Postal Service on volume issues.

**THOMAS THRESS, M.A.**

Mr. Thress is Vice President of RCF where he leads RCF's forecasting, econometric, and quantitative analysis activities. His principal work at RCF involves modeling the demand for goods and services for a variety of clients, including the United States Postal Service. His work also includes volume and revenue forecasting for the Postal Service. Mr. Thress provides testimony on

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volume forecasting methods and results that are used in Postal rate-making deliberations.

Mr. Thress designed the program used by the Postal Service to make official volume and revenue forecasts used for internal planning purposes and in regulatory proceedings. His other work for the Postal Service has included: coordination of the Postal Service's volume forecasting effort in support of major classification reform and development of a methodology for modeling mailers' use of worksharing discounts.

Mr. Thress received a B.A. in Economics and a B.S. in Mathematics from Valparaiso University, and an M.A. in Economics from the University of Chicago.

### **PETER BERNSTEIN, M.B.A.**

Mr. Bernstein is Vice President of RCF where he is a leader in RCF's legal support and market economic analysis. He has written numerous testimonies and appeared as an expert witness on many occasions. Mr. Bernstein has testified before the Postal Regulatory Commission on the impact of the Internet on the finances of the U.S. Postal Service and has also testified in union-management contract arbitration hearings. Mr. Bernstein writes a quarterly newsletter on the US economy for Prudential Capital Group and has co-authored several studies of the US housing industry. He has also authored an analysis of the "Living Wage" proposal for the City of Chicago, and a large-scale survey of airline passengers for O'Hare airport. Mr. Bernstein collaborated on an RCF study of the impact of a proposed \$1 billion casino/entertainment complex and testified before the Chicago Commission on Gaming. He has testified before the Chicago City Council on tax and development issues.

Mr. Bernstein is Visiting Instructor of Economics at DePaul University. He was on the faculty of Loyola University from 1987 to 1991 and was Lecturer at the University of Chicago Booth School of Business, where he taught investment theory.

Mr. Bernstein holds a B.A. in Economics and an M.B.A. in Economics and Finance, both from the University of Chicago.

### **DONALD W. JONES, Ph.D.**

Donald Jones is a Senior Economist and Vice President for marketing at RCF. He is author or co-author of four monographs, one edited volume, over 50 articles in professional journals, and numerous technical reports. A number of his articles have been reprinted in collections of readings and classic articles in their fields. He has taught on the faculties of the Universities of Chicago, Colorado, and Tennessee. He is currently adjunct professor at the University of Illinois at Urbana-Champaign and the University of Tennessee.

Dr. Jones has served as a research staff member and economist at Oak Ridge National Laboratory. His experience includes energy project and program evaluation (U.S. and Third World), risk management, investment in new

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technologies, land use and deforestation, economics of R&D, value of power system reliability, commercial real estate, corporate incentive structures, infrastructure productivity and benefit estimation, transportation demand and fatality forecasting, and macroeconomic impacts of oil price shocks. Among his activities at RCF, he has led the international mail demand forecasting for the U.S. Postal Service, co-led the University of Chicago study of the future of nuclear power and a report to Congress for the Department of Energy on employment impacts of a transition to a hydrogen economy and has led projects on environmental impacts of offshore energy development and on species preservation. He testified before Congress twice on the nuclear power report.

Dr. Jones received his Ph.D. in Geography with a concentration in economics from the University of Chicago.

### **SABINA L. SHAIKH, Ph.D.**

Dr. Shaikh is a Senior Research Economist at RCF. Her areas of expertise include econometrics, consumer demand theory, welfare analysis, and non-market valuation. She has extensive previous research experience in outdoor recreation demand, forestry and fishery management, and the effects of climate change on agriculture and environment.

Dr. Shaikh applies advanced econometric approaches to the yearly five-thousand-observation Postal Service Household Diary Study, using demand system estimation and qualitative choice maximum likelihood models. She applies emerging and experimental econometric techniques to search for improvements in estimation of postal demand behavior from national time series data.

Dr. Shaikh has been on the faculty of the Department of Food and Resource Economics at the University of British Columbia. She holds a Ph.D. from the University of California-Davis, an M.A. from Colorado State University and a B.A. from the University of Wisconsin. She has published in major professional journals.

### **ROBERT FABIAN, Ph.D.**

Dr. Fabian is a Senior Economist at RCF. He has worked extensively with George Tolley and is co-author with him of several articles and books. He has done extensive research into the valuation of hard to value things, such as health, safety, and the environment. This valuation work has provided the basis for a wide range of policy analyses.

Dr. Fabian holds a Ph.D. in Economics from the University of Florida.

### **ERIC STUHLMANN, M.B.A., C.P.A.**

Eric Stuhlmann has been Controller at RCF since 1997. From 1984 to 1997, he was Vice President and Chief Financial Officer of Shurfine International, an \$850 million grocery wholesaler. Prior to joining Shurfine, he was Vice President and Controller of Ovaltine Products, Inc., a multi-plant grocery manufacturer and

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subsidiary of Sandoz, Ltd, a Swiss conglomerate. Other experience includes accounting and financial staff and managerial positions with Skil Power Tools, Jewel Food Stores and Arthur Young & Co.

A Certified Public Accountant, Stuhlmann holds an M.B.A. in Accounting from the University of Chicago Graduate School of Business and a B.A. in Economics from Grinnell College.

### **MARK GRECHIK, M.A.**

Mr. Grenchik is a Senior Economist at RCF where he analyzes postal volume developments, energy demand and supply, and electricity pricing. Prior to joining RCF, he was a lead analyst in the Wholesale Energy Group at ComEd. His duties included supporting the trading desk and devising pricing strategies to reduce costs of power purchases. He served as an expert witness before the Illinois Commerce Commission in deliberations seeking to utilize market prices to calculate stranded investment recovery under Illinois' electricity restructuring law.

Earlier, Mr. Grenchik was a Senior Economist at the Chicago Board of Trade. He analyzed modifications to agricultural futures and futures options contracts, conducted research for new product development, and completed studies in support of changes to locational price differentials, delivery points, price limits, and speculative position limits. As an adjunct faculty member in the Financial Markets and Trading program at the Illinois Institute of Technology, Mr. Grenchik helped design and co-taught a course in commodity markets.

Mr. Grenchik received B.A. and M.A. degrees in Economics from the University of Chicago.

### **NAVEEN SINGHAL, M.B.A., M.S.**

Mr. Singhal is a Senior Economist at RCF where he has analyzed issues related to nuclear power plant financing, catastrophe insurance, electronic billing, and pricing of postal products. He is currently working on a DOE project analyzing the economic potential of a hydrogen fuel driven transport system.

Mr. Singhal received his M.S. in Economics from the University of Wisconsin-Madison. He also holds an M.B.A. degree in Finance from University of Delhi, India.

### **CATHERINE MERTES, M.P.M.**

During her time at RCF, Ms. Mertes has worked in the areas of energy, real estate, and environmental management and has been instrumental in the production of RCF's 2006 and 2008 publications on the Chicago regional economy, *DataBook Chicago*.

Prior to joining RCF, Ms. Mertes spent 9 years at Commonwealth Edison Company/Exelon, which included two years in the corporate financial and strategic planning area and seven years in environmental project and program management.

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Prior to her work at Commonwealth Edison/Exelon, she spent three years working in environmental consulting in Chicago and Washington, D.C.

Ms. Mertes holds an M.P.M. in Project Management from Northwestern University, and a B.S. in Civil Engineering from Lehigh University.

### **KANT DESAI, M.P.P.**

Mr. Desai is an Economist at RCF. One of his chief duties is to develop analytical tools to produce volume and revenue forecasts for International Mail. Mr. Desai also participates in analyses of environmental, real estate, and energy issues. His previous research work includes the economics of nuclear power and progress of electricity market restructuring. Mr. Desai also spent time in the physical sciences conducting research in biomass energy at the National Renewable Energy Laboratory.

Mr. Desai holds a B.A. in Chemistry from Kalamazoo College and a Master's degree in Public Policy (M.P.P.) from the University of Chicago.

### **KRISTY KITZMILLER, C.P.A., C.F.A.**

Ms. Kitzmiller joined RCF in 2008 and has made significant contributions in the areas of real estate analysis, marketing, and energy economics. Ms. Kitzmiller is a seasoned professional with eleven years of experience in the areas of finance and strategic planning working for PepsiCo, Credit Suisse First Boston, Anderson Consulting, and ABN Amro.

Ms. Kitzmiller holds a B.S. in Financial and Managerial Accounting from the University of Illinois at Chicago. Additionally, she is a CPA and Series-7 licensed CFA.

### **JIANFENG LIU, M.S.**

Mr. Liu is an Economist at RCF where he conducts econometric analysis on a range of subjects, including hedonic analysis of real estate prices and demands for postal products. He has developed and operates quality-control programs for RCF's demand forecasting system for the U.S. Postal Service. He is also active in environmental and energy policy projects.

Mr. Liu has hands-on experience in applying econometrics and time series statistical analysis to real-world problems. He has utilized advanced techniques such as intervention analysis, non-stationary time series econometrics, spectral analysis and time-varying volatility models to enhance performance in modeling and forecasting. To facilitate his implementation of econometric techniques, Mr. Liu, a certified SAS programmer, has accumulated extensive experiences with SAS as well as other statistical packages, including STATA and EViews.

Mr. Liu received B.A. and M. A. degrees in Economics from Peking University and an M.S. in Economics from the University of Wisconsin at Madison.

**ELLA REVZIN, B.A.**

Ms. Revzin is an Economist at RCF where she conducts economic analysis into the demand for U.S. postal products, employment, and the Chicago real estate market. Her recent work has focused on econometric analysis of advertising mail using the Postal Service's annual Household Diary Survey.

Ms. Revzin received her B.A. in Economics from the University of Chicago.

**JANE E. MAHONEY, B.A.**

Ms. Mahoney is an Economist at RCF where she researches trends in the Internet usage of households, workplaces, and advertisers for use in RCF's studies on the technological diversion of mail. She also develops data sets and GIS maps for use in hedonic analysis of real estate prices.

Ms. Mahoney received a B.A. in Economics from the University of Chicago.

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Mr. Golovchuk is an Economist at RCF where he analyzes international mail and the advertising industry. Mr. Golovchuk received a B.A. in Economics and Philosophy from the University of Chicago.

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Ms. Hammond is an Economist at RCF. Her fields of expertise include monetary theory and economic growth. She has lectured extensively in microeconomics, macroeconomics, and international finance at Northwestern University, Northwestern University School for Continuing Studies, and the University of Chicago.

Ms. Hammond has a B.A. in Political Science from University of California at Berkley and is currently a Ph.D. candidate in Economics at the University of Chicago.

**GEORGE SIMLER, M.S., M.P.P.**

George Simler is an Economist at RCF where he conducts research and analysis on a variety of topics, including the economics of a possible transition to Hydrogen-fueled vehicles in the Los Angeles area for the Department of Energy, and the economic benefits particle physics research has contributed to society.

Before coming to RCF in 2008, George worked at the economic litigation consulting firm Chicago Partners, LLC for seven years where he worked on cases such as patent infringement, intellectual property valuation, wage and race discrimination, securities fraud, antitrust, and market concentration, as well as other types of economic and accounting topics.

Mr. Simler received a B.S. in Physics from Purdue University, an M.S. in Physics at Texas A&M, and a Master's degree in Public Policy from the Harris School of Public Policy at the University of Chicago.

**AMBREEN CHAUDHRI, B.A.**

Ms. Chaudhri is an Economist at RCF where she researches trends in periodical mail and the recent shape-based pricing changes for the U.S. Postal Service. Prior to joining RCF, Ms. Chaudhri was an executive compensation consultant at Frederic W. Cook & Co. and The Delves Group.

Ms. Chaudhri received a B.A. in Economics and International Studies from the University of Chicago.

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Mr. Murphy is an Economist at RCF where he conducts econometric analysis on a range of subjects, including the economics of a potential transition to hydrogen fueled automobiles.

Mr. Murphy received a B.S. degree in Mathematics from the University of Nebraska at Lincoln, and an M.S. in Mathematics from Iowa State University.

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Mr. Yin is an Economist at RCF where he conducts research and analysis on a variety of topics, including regional development in China and the economics of medical proton therapy. In addition, he investigates macroeconomic and technological trends to improve upon RCF's demand forecasting system for the U.S. Postal Service.

Mr. Yin received a B.A. in Economics and a B.S. in Chemistry from the University of Chicago.

**ANISH SHAH, B.A.**

Mr. Shah is an Economist at RCF where he conducts research and analysis including forecasting special services mail and assessing economic benefits of high energy physics. He also studies the overlap of economics and medicine and has completed coursework in medical economics.

Mr. Shah received a B.A. in Economics from the University of Chicago.

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### **EDWIN S. MILLS, Ph.D.**

Dr. Mills is Professor Emeritus of Real Estate and Finance at Northwestern University's Kellogg Graduate School of Management and the former Director of the Guthrie Center for Real Estate Research at Kellogg. He is among the nation's preeminent economists in the field of real estate policy and finance, and has held academic positions at M.I.T., Johns Hopkins, and Princeton University. He was a long-time editor of the *Journal of Urban Economics* and has served on the editorial boards of *The Journal of Real Estate Finance and Economics* and the *Journal of Housing Economics*. The Real Estate Investment Association has awarded him with a Lifetime Achievement Award.

Dr. Mills' textbook *Urban Economics* is one of the primary texts in the urban literature. He is the author of over 100 professional journal articles, reports, and books on urban economic topics, including residential and commercial real estate purchases, rentals, and supply; causes and limitations to urban economic growth; financial regulation; and various urban public policies.

Dr. Mills has been an expert witness in several cases, which have provided him with extensive litigation experience. His current research projects include commuting patterns in U.S. metropolitan areas, government policy effects on inner cities, and the relationships between governments and businesses in Massachusetts.

### **JOHN F. McDONALD, Ph.D.**

John McDonald is Emeritus Professor of Economics and Finance at the University of Illinois at Chicago. He joined the faculty of the UIC College of Business Administration in 1971 after receiving his Ph.D. in Economics from Yale University. At UIC he has served as Professor of Economics and Finance, Founding Director of the Center for Urban Real Estate, Senior Associate Dean for Academic Affairs and Research, and Interim Dean of the College of Business Administration. Other positions held include Research Director at NCI Research (Kellogg Graduate School of Management, Northwestern University), and Adjunct Professor of Economics in the Graduate School of Business, University of Chicago.

Dr. McDonald is well known for his research in urban economics and real estate, and is listed in the current edition of *Who's Who in Economics*. He is the author of seven books. His first book, *Economic Analysis of an Urban Housing Market*, is a study of the housing market of metropolitan Chicago and was published in 1979. His textbook *Fundamentals of Urban Economics* appeared in 1997. His work on urban traffic congestion with Edmond d'Ouille and L. N. Liu was published in 1999 as *Economics of Urban Highway Congestion and Pricing*. Books include *Urban America: Growth, Crisis, and Rebirth*, and a textbook *Urban Economics and Real Estate* co-authored with John McMillen.

Dr. McDonald was North American editor of *Urban Studies* from 2001 to 2005, and currently serves as editor of the *Journal of Real Estate Literature*. He has

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been a member of the editorial board of the Journal of Urban Economics since 1989, and was President of the Illinois Economic Association during 1993-94.

### **GEOFFREY J. D. HEWINGS, Ph.D.**

Geoffrey Hewings is Director of the Regional Economics Applications Laboratory (REAL) at the University of Illinois at Urbana-Champaign and a Professor in the departments of geography, economics and urban and regional planning. He has authored or co-authored 10 books and over 100 articles and book chapters. REAL prepares the *Chicago Business Activity Index*, a monthly forecasting index for the metropolitan economy, as well as a monthly assessment of the region's employment data. Over the past decade, REAL has conducted a number of impact studies on the Chicago, Illinois, and Midwestern economies – for example, the *Monet* Exhibition, the Democratic National Convention, high speed rail, international tourism and the role of exports on occupational demands.

Dr. Hewings held appointments at the University of Kent (England) and the University of Toronto (Canada) prior to joining the University of Illinois in 1974. He has been a visiting professor at the University of Queensland (Australia), Bar Ilan University (Israel), University of Indonesia, Nankai University (China), Kagawa University (Japan) and the Universidad Catolica del Norte (Chile).

In addition to the continuing development of regional econometric-input-output models for a number of U.S. states (including Illinois, Indiana, Wisconsin, Ohio and Michigan) and metropolitan areas (Chicago and St. Louis), Hewings works on regional modeling projects in Brazil, Colombia, Korea, Japan, and Indonesia. Recent work in the Midwest has focused on the estimation of interstate trade flows as a prelude to the construction of a Midwest impact and forecasting model linked with a transportation network model. His theoretical work is directed to issues of economic structure and structural change analyzed through input-output, social accounting and general equilibrium models.

### **BARTON A. SMITH, Ph.D.**

Dr. Smith is a Professor of Economics at the University of Houston. He teaches and conducts research in urban economics and public finance. He has been affiliated with the University of Houston since 1973 and has served as chairman of the Economics Department (1987-1990) and as director of the Center for Public Policy (1984-1987). Dr. Smith continues to work with the Center as its senior economist in charge of regional economic analysis. He has conducted numerous studies in housing, transportation and environmental economics, and he has published many articles in academic journals and books. During the past 15 years, Dr. Smith has gained national and local recognition for his analyses of the Houston economy and real estate markets. He wrote the Center's Handbook on the Houston Economy (1987, 1989) and continues to publish two symposium reports per year on Houston's economy and real estate markets. Dr. Smith received his Bachelor of Arts in political science from Brigham Young University (1969) and his Master of Arts and Ph.D. degrees from the University of Chicago (1971, 1974).

**HOUSTON H. STOKES, Ph.D.**

Houston Stokes is Professor of Economics at the University of Illinois at Chicago, where he specializes in econometrics, monetary economics, and energy economics. He has written over 65 articles and two books in the areas of applied econometrics, time series, monetary economics, economic history, and software design. Dr. Stokes' research papers have involved measuring the effect of changes in the financial structure on real output, modeling the decision process in OPEC, measuring the effects of changes in the interest rates on adjustment under the gold standard, interest arbitrage, and software design. Professor Stokes has consulted widely in the financial area, the health economics area, and in energy economics.

**DAVID R. BARKER, Ph.D.**

Dr. Barker is an Adjunct Professor of Economics in the Graduate School of Business at the University of Chicago, teaching an MBA course in real estate. Dr. Barker is also a partner and manager of significant real estate holdings in eastern Iowa and consults on real estate related matters.

Prior to his position with the University of Chicago, Dr. Barker taught Real Estate and Corporate Finance at the University of Iowa. From 1991-1994, Dr. Barker worked as an Economist for the Federal Reserve Bank of New York, where he developed an econometric model to forecast problems at banks. The model has been adopted as the primary off-site surveillance program for the entire Federal Reserve System. In addition, he developed models to detect racial discrimination in mortgage lending that are also used by the Federal Reserve System. His research covers a variety of topics, including causes of bank failures, option risk management systems of banks, and theoretical work on money demand. He is currently working on a variety of papers related to real estate.

Dr. Barker received his B.A. in Economics from the University of California-Berkeley, and received his M.A. and Ph.D. in Economics and Finance from the University of Chicago.

**PHILIP E. GRAVES, Ph.D.**

Dr. Philip Graves is nationally known for his work in environmental economics, urban and regional economics and monetary economics and is available to participate in projects on these subjects at RCF. He is Professor of Economics at the University of Colorado and has held visiting positions at a number of other universities. He is the author of seven books and many articles.

Dr. Graves was responsible for developing advanced methodologies for estimating economic damages from air and water pollution and for using these estimates in a multidisciplinary team setting along with control cost estimates, dispersion modeling and physical assessments. He is co-author of two volumes in the Economic Policy Series, *Elements of Environmental Analysis and Air Quality*.

Much of his work has concerned demographic trends in regional and urban settings. He has served as consultant to a variety of organizations. For Commonwealth Edison, he studied short-run construction disturbances to communities associated with nuclear power plants. A project with Argonne National Laboratory included analysis of market penetration over time of solar storage energy systems.

Dr. Graves is a graduate of Indiana University, where he received an A.B. in Economics. He later attended Northwestern University, receiving an M.A. and a Ph.D. in Economics.

### **RICHARD O. ZERBE, JR., Ph.D.**

Richard O. Zerbe is a Professor of Public Affairs and Adjunct Professor of Law at the University of Washington. He specializes in benefit cost analysis, environmental economics, and the organization of industry. He is co-author of the world's best-selling textbook and reference on benefit-cost analysis, *Benefit-Cost Analysis in Theory and Practice* (Harper Collins, 1994). He is a member of the executive committee of the Western Economics Association and is editor of the *Journal of Research in Law and Economics*. His extensive consulting and expert witness testimony experience includes serving as a consultant to the Regional Commission for Airline Affairs, the Federal Trade Commission, and the Regional Taxicab Association.

Professor Zerbe has taught at Northwestern University, Roosevelt University, and The University of Chicago. He received his Ph.D. in Economics from Duke University and was a Research Fellow in Law and Economics at the University of Chicago.

### **EDWARD MENSAH, Ph.D.**

Dr. Mensah is an Associate Professor of Health Economics and Information Management at the University of Illinois at Chicago. His areas of expertise include costing and pricing of health services, environmental regulation and energy economics using econometric models. Dr. Mensah's publications have appeared in several journals, including the *Journal of the American Medical Association* and the *Journal of Environmental Systems*.

Dr. Mensah is a graduate of the University of Ghana, where he received a B.Sc. in agricultural economics. He later attended Iowa State University where he graduated with a Ph.D. in economics, specializing in public finance, natural resource economics and econometrics. Dr. Mensah also received post-doctoral training in the Department of Economics at the University of Chicago, where he worked on estimating the value of environmental improvement projects and market penetration of alternative energy technologies.

### **KAJAL KAPUR, Ph.D.**

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Dr. Kapur has consulted on energy and environmental issues since 1991. She has extensive experience training electric industry professionals on pricing electric power in a deregulated market, new pricing mechanisms used by electricity providers, and differences in pricing methods used. Other areas of expertise include demand side management and integrated resource planning. Dr. Kapur has trained Korean management personnel on important deregulation issues experienced in the U.S. electric industry by lecturing on topics related to customer satisfaction, market segmentation, and pricing of services. She has helped a Japanese utility understand the effects of deregulation on the business practices of American gas pipeline companies.

Previously, Dr. Kapur has consulted to a major Midwest nuclear utility and a Mid-Atlantic natural gas utility on restructuring issues. She helped the Midwest utility develop a promotional strategy for the company's energy efficiency programs, renewable energy/distributed power options, and other environmental stewardship efforts, given restructuring developments in the state. Dr. Kapur advised the Mid-Atlantic utility on gas regulatory trends in an increasingly competitive gas industry, and addressed the implications of these trends for the company's base rate filing. Dr. Kapur has also consulted on economic, policy and environmental issues related to the regulation of electric and gas utilities, presenting written and oral testimony in cases before the Indiana Utility Regulatory Commission. She conducted economic analyses related to Indiana utilities' clean coal technology project and clean air compliance plans. Dr. Kapur earned a Ph.D. in economics from Cornell University in 1990 with a major in Industrial Organization.

### **MARK NIELSON, Ph.D.**

Dr. Nielson is currently the managing director and Chief Economist at MacroEcon Global Advisors, Inc., an economics consulting firm specializing in financial economics, corporate governance, and strategy.

Previously, Dr. Nielson worked in global equity investment strategy and headed corporate governance analysis at Morgan Stanley Asset Management, The Chicago Group. Dr. Nielson was the head high-tech/telecom industry economist at BT Alex. Brown (now Deutsche Bank). Dr. Nielson also advised BT Alex. Brown's Global Economics and Strategy group on matters of international economics and finance and supported equity and fixed income groups in asset pricing and industry trends. He has consulted to the Central Bank of Sweden on the term structure of interest rates, interest rate policy, effects of foreign exchange rate changes, and equity movements on the shape of the yield curve. Dr. Nielson has held visiting professor posts at the Stockholm School of Economics and Augustana College.

Dr. Nielson is a graduate of Dakota Wesleyan University, where he received a B.A. degree in Political Science. Dr. Nielson received a Ph.D. in Economics with a concentration in financial economics from the Department of Economics at the University of Chicago.