

## Robert M. Townsend

### MIT Department of Economics

#### Robert M. Townsend, Elizabeth & James Killian Professor of Economics

Robert M. Townsend is a theorist, macroeconomist, and development economist who analyzes the role and impact of economic organization and financial systems through applied general equilibrium models, contract theory and the use of micro data. The Elizabeth and James Killian Professor of Economics at MIT and a Research Professor at the University of Chicago, he is known for his seminal work on costly state verification, the revelation principle, optimal multi-period contracts, decentralization of economies with private information, models of money with spatially separated agents, forecasting the forecasts of others, and insurance and credit in developing countries. He is the author of *Financial Structure and Economic Organization* (1990), *The Medieval Village Economy* (1993), *Households as Corporate Firms* (2010) with Krislert Samphantharak, *Financial Systems in Developing Economies* (2011), *Chronicles from the Field* (2013) with Sombat Sakuntasathien and Rob Jordan, and numerous professional articles in leading journals.

Townsend began his career as a theorist working on general equilibrium models, contract theory, and mechanism design. His earliest book, *Financial Structure and Economic Organization* (Basil Blackwell, 1990), is a collection of works related to his initial interest in neoclassical models that characterize how groups of economic agents organize themselves. The key features in the described environments of these models include separation in space and uncertainty, which helped shape financial structure and economic organization in early European history. An in-depth focus on the first of these historical episodes led Townsend to write *The Medieval Village Economy: A Study of the Pareto Mapping in General Equilibrium Models* (Princeton University Press, 1993). The environment of the medieval village resembles those of relatively simple models with risk and moral hazard, and its institutions display distinctive features such as the fragmented landholding patterns of English fields. Later, Townsend turned to contemporary underdeveloped economies, and his paper *Risk and Insurance in Village India* (*Econometrica*, 1994) was awarded the Frisch Medal, in 1998. The use of both theory and data to evaluate the effectiveness of local, village-level markets and institutions made the paper particularly notable.

After using the ICRISAT panel data in his work in India, Townsend took what he saw as a logical next step: field research and in-person interviews. As described in *Financial Systems of Northern Thai Villages* (*Quarterly Journal of Economics*, 1995), variation across villages - even among those close to one another - became increasingly apparent, as did the links of these villages to the outside economy. Townsend placed the study of the family, kinship groups, and networks as risk-sharing syndicates in this context, and received funding from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) in 1997 to launch a large-scale survey project in Thailand. The Ford Foundation provided Townsend with funding for a follow-up study to examine the effects of the Asian financial crisis that originated in Thailand. This study assessed the microeconomic impact of a large macroeconomic shock, in comparison with other ongoing and typical spatial-temporal stochastic processes. Continued funding from the NICHD and the University of the Thai Chamber of Commerce (UTCC) in Bangkok, as well as funding from the National Science

Foundation (NSF) for research on micro and macro models, has allowed these surveys to continue and to incorporate economic theory, a hallmark of Townsend's unique approach.

With this support, the Townsend Thai surveys are now one of the longest running panel datasets in a developing country. Currently, the Townsend Thai Data consists of over 15 years of annual panel data for 1,225 households in 64 villages and separately, 180 months of in-depth monthly data for 700 households in 16 villages. In total, close to 3,500 households are now surveyed each year in rural and urban areas across Thailand. Townsend's *Households as Corporate Firms* (Econometric Society Monograph, 2009) features measurement coming from this rich data, the creation of income statements, balance sheets, and cash flow statements for household businesses, which make up a large part of developing economies such as Thailand, in both rich and poor regions.

Townsend's work with Thai collaborators at the Thai Family Research Project (TFRP) has expanded to other provinces, so as to cover all regions of Thailand, and to include towns and cities. The survey also includes local institutions, headmen, joint liability groups, and environmental data. A comprehensive archive of secondary data, organized by the University of Chicago - UTCC Research Center, and an automated search function are available for public use. Overall, the Townsend Thai Data and other secondary data such as those of Thailand's National Statistics Office (NSO) allow researchers to look at detailed economic activity in a variety of settings, to gauge the realism of assumed micro underpinnings, and to test models in a way that has not been possible before. This research is yielding new insights to what financial regimes best describe the data, the role of family and informal networks as shadow banking, an evaluation of village funds and the universal health care program with extensive before and after data, the study of villages as small open economies and the role of internal trade and capital flows in the process of development, and the role of small and larger firms. Modified and new theories are emerging.

Townsend's current work is comprised of multiple projects that span a number of countries. One main project builds on micro underpinnings of economic growth to gain an understanding of Thailand's entire economy. His most recent book, *Financial Systems in Developing Economies: Growth, Inequality and Policy Evaluation in Thailand* (Oxford University Press, 2010), is a summary of much of his work, including macro models of growth, industrialization, and financial deepening in economies in transition. Townsend and his colleagues are extending this approach to other countries, including Brazil, Mexico, and Spain.

Townsend is now working in partnership with Thailand's National Economic and Social Development Board (NESDB) to help enhance the national flow of funds accounting. When completed, these data will capture the role of households and firms, account for flows between different sectors and regions, and generate richer research combining micro and macro data. Another project, in India, studies the risk of monsoons, which varies widely across villages and regions, and it examines whether an economy-wide rainfall insurance initiative is helpful. Finally, a project in Kenya studies electronic money via models of money with spatially separated agents.

In 2011, Townsend was awarded the Jean-Jacques Laffont Prize, which is bestowed by The Institute of Industrial Economics (IDEI) and the city of Toulouse, France in honor of the late economist Jean-Jacques Laffont. In 2012, Townsend became the first person to win the Frisch Medal twice. He shared the honor with fellow economist and former student Joseph Kaboski of the University of Notre Dame for their paper, *A Structural Evaluation of a Large-Scale, Quasi-Experimental Microfinance Initiative* (Econometrica, 2011). The selection committee said the paper was noteworthy for its "combination of rigorous theory and careful econometrics to produce important insights into a major development policy."

From a theoretical perspective, Townsend is currently working on techniques for the evaluation of financial services and other programs which include general equilibrium effects and comparison with reduced-form instrumented variation and natural experiments; the optimal design of financial institutions and markets when adverse selection, collateral constraints, and moral hazard with retrade create externalities; and the industrial organization of financial markets in developing countries. He focuses on the next generation

of micro-founded macro models that incorporate space and the environment, using Geographic Information Systems (GIS), biophysical and climate models, and enhanced computational methods. From a practical perspective, Townsend is working closely with organizations on the ground in Chile, Brazil, Thailand, and other countries to form policy initiatives that incorporate assessment using theory and measurement from surveys.

Townsend leads several grants related to his research interests. He is Principal Investigator and Faculty Director of the Consortium on Financial Systems and Poverty at the University of Chicago, a program supported by the Bill & Melinda Gates Foundation. The Consortium brings together scholars from various subfields to better understand and improve financial systems in the developing world. It pools expertise in the fields of development, macroeconomics, finance, and international economics. The Consortium supports four workshops that study payments systems, flow of fund accounts, macro models with realistic financial sectors, and the role of industrial organization in development in order to gain a broader understanding of financial systems and their role in poverty alleviation. Townsend also serves as Principal Investigator and Project Director of the Enterprise Initiative, which explores entrepreneurship and wealth creation through the lens of Applied General Equilibrium Enterprise Economics. Funded by the John Templeton Foundation, this research initiative studies how households and firms overcome obstacles in various settings and their impact on the larger economy.

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