



**Hendrik S. Houthakker**  
1924–2008

BIOGRAPHICAL

*Memiors*

*A Biographical Memoir by  
Dale W. Jorgenson*

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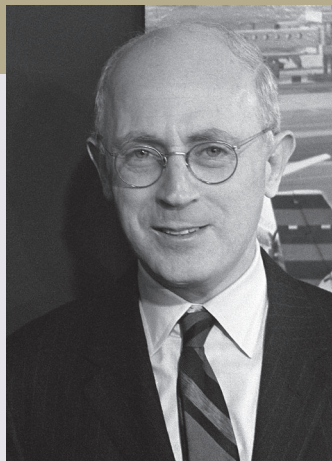
NATIONAL ACADEMY OF SCIENCES

# HENDRIK SAMUEL HOUTHAKKER

December 31, 1924–April 15, 2008

Elected to the NAS, 1974

Hendrik Samuel Houthakker, the late Henry Lee Professor of Economics at Harvard University, lived a very rich and full life that brought him into contact with the great events of our time. He lived through the Nazi occupation of the Netherlands and was once arrested by the Gestapo. He escaped and became a refugee for a short period with a Dutch Catholic family of farmers. He produced significant work on the econometrics of family budgets and consumer demand and decision making, transportation, and energy policy. Houthakker's famous 1950 paper, in which he detailed his theory of the "Strong Axiom of Revealed Preference," assured him a permanent place in the history of economic thought. The force of Houthakker's stunning contribution is well captured by economist Robert Pollak in the following words: "Economics, unlike mathematics, has relatively few classic well-posed problems whose solutions can make professional reputations. The original revealed preference problem was one of them."



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By Dale W. Jorgenson

**H**endrik S. Houthakker was born in Amsterdam on December 31, 1924, the son of well-known art dealer Bernard Houthakker. At the outbreak of World War II, his parents moved to Switzerland and remained there for the duration of the war, fearing for their lives as Jews. He had a brother, Lodewijk Houthakker, who also became an art dealer. Houthakker returned to his studies at the University of Amsterdam after the war and received his degree in economics in 1947. This was followed by a Doctorandus of Economics degree from the University of Amsterdam in 1949. He published his first paper on the sales and pricing of domestic electricity in Dutch in June 1949. In October of that year, he joined the University of Cambridge's Department of Applied Economics, established by Richard Stone, who later won a Nobel Prize in economics. The department was then a hot bed of empirical and theoretical work on consumer economics, or "demand analysis."

In May 1950, Houthakker published his most important work, “Revealed Preference and the Utility Function,” in which he laid out his theory of the Strong Axiom of Revealed Preference. Revealed preference denotes the link between individual preferences and the demand revealed by purchasing behavior. Before Houthakker’s contribution, this relationship derived a characterization of preferences revealed by purchasing behavior, subsequently known as the Weak Axiom of Revealed Preference. Houthakker succeeded in formulating the theory through a precise equivalence between purchasing behavior and individual preference.

While at the University of Cambridge, Houthakker wrote two papers with James Tobin, later winner of a Nobel Prize in economics, on rationing and demand elasticities. He continued his work on electricity tariffs with two papers in 1951. In 1952, he published the first of his important papers on the econometrics of family budgets and was elected a Fellow of the Econometric Society that same year. He also initiated work on quality as a dimension of consumer demand. He continued this work in collaboration with Sigbert J. Prais of the Department of Applied Economics in 1953. Also that year, he published a paper on computation in economic statistics with J. Allen Brown and Prais. Houthakker’s contributions continued at a breathtaking pace.

From Cambridge, Houthakker moved to the Cowles Foundation for Research in Economics at the University of Chicago in 1952. The foundation was led by Tjalling Koopmans, Houthakker’s Dutch compatriot and a later Nobel Prize winner in economics, and Jacob Marschak. Cowles was re-shaping economics into its modern form, combining theoretical analysis with econometrics. Soon after the move, Houthakker published his paper on the analysis of family budgets. He followed this with his study of Engel curves in 1953. In 1955, he published *The Analysis of Family Budgets*, with S. J. Prais. Research for this monograph had been initiated during Houthakker’s time at Cambridge, and it was subsequently revised and reprinted in 1971.

Houthakker moved from Chicago to Stanford University in 1954. While there, he met Anna-Teresa Tymienieska, the Polish philosopher and founder of the World Phenomenology Institute who would become his wife of 52 years. The couple had three children: Lois Tymienieska, Jan Nicholas Tymienieska, and Isabella Romana.

While at Stanford, Houthakker published his paper on the Pareto distribution and the Cobb-Douglas production function, emphasizing the implications of the theory of aggregation for the study of production. In 1955, he published his paper on the numerical solution of the transportation problem, a challenging problem in operations

research. He published a paper on economics and biology in 1956. He then turned his attention to speculative pricing with his 1957 paper “Can Speculators Forecast Prices?” In the same year, he published an international comparison of household expenditure patterns, commemorating the centenary of Engel’s Law. He returned to pricing of public investment with his paper on the pricing of roads, also in 1957.

My own first contact with Houthakker took place almost by chance. As a Visiting Professor at Harvard University in 1958-59, more than sixty years ago, he was co-opted into service as the third examiner on my Ph.D. dissertation. I am happy to recall that the examination went well and I received my degree on schedule. He returned to Harvard on a permanent basis in 1960, and I was pleased to resume our acquaintance when I returned to Harvard myself in 1969. We had many interests in common and interacted frequently over the years until his retirement in 1994.

In 1959, Houthakker turned his attention to education and income with a paper on this topic. In the same year, he published a second paper on futures trading. In 1960, he returned to operations research with a paper on quadratic programming and published an important paper on household investment in automobiles with John Haldi. Also that year, he studied additive preferences in an important paper on consumer behavior. In 1961, he made a contribution to the international comparison of personal saving and also published paper on short-term price movements and a paper on household decision-making. Other publications that year focused on protection against inflation, farm policy, and an excellent survey of the present state of consumer theory. Houthakker was elected a Fellow of the American Statistical Association in 1961, as well. In 1962, he published a paper on exchange rate adjustment.

Houthakker’s paper was cited in 1963 when he received the John Bates Clark Medal, awarded every other year by the American Economic Association to the economist under 40 who has made a significant contribution to the field. The citation noted:

*Outstanding among Professor Houthakker’s many contributions, both theoretical and empirical, are those he has made on the subject of consumers’ expenditures. A particularly noteworthy characteristic of this work is the way in which the theoretical and empirical aspects are intertwined.*

*Professor Houthakker has contributed significantly to the generalization of demand theory and to its extension to new realms with his work on*

*revealed preference, rationing, and quality variations. He has contributed to the specialization of the theory, and thereby added to its significance for empirical research, in his papers on indirect utility, direct additivity, and systems of demand functions. In addition to these important and extensive contributions to the subject of consumer demand, he has brought econometric methods to bear on a number of important policy issues and problems.*

In 1966, he undertook a project with Lester D. Taylor that resulted in the monograph *Consumer Demand in the United States*. He and Taylor revised and updated this book and published a second edition in 1970. In 1967, he published the monograph *Economic Policy for the Farm Sector*. At Harvard, Houthakker served as editor of *The Review of Economics and Statistics*, then as now one of Harvard's two leading journals of economics, for twenty-one years. Houthakker read many of the manuscripts himself, assigned the best to referees, and made the final editorial decisions. When he stepped down, he was replaced by a committee.

Unlike most of his colleagues at Harvard, Houthakker taught a wide variety of subjects, beginning with econometrics and mathematical economics. He later took responsibility for teaching international economics and financial economics, contributing to the beginning of many a successful career on Wall Street. Houthakker served as Acting Chairman of the Department of Economics in 1987-88. This was the first and last time that departmental dinners required black tie for men and long dresses for women.

While at Harvard Houthakker served as a member of the Council of Economic Advisers in 1966-67 under President Lyndon Johnson. He was reappointed to the Council by President Richard Nixon and served from 1969-71. He was elected President of the Econometric Society in 1967. This period included the collapse of Bretton Woods, the system of fixed parities for international currencies established after World War II. This shift was accompanied by the "Nixon Shock," suspending the convertibility of the dollar into gold and imposing a system of price controls.

Writing about the secrecy with which the policies to resolve the financial crisis were formulated and implemented, Houthakker penned the following words, which now seem prescient: "In any democracy it is difficult to carry out policies without public awareness, public criticism, and public cooperation, wherever possible. Under the U.S. Constitution congressional involvement is even more essential, no matter how time-consuming and politically hazardous."

After Houthakker's return to Harvard, we were recruited in 1973 by our colleague Otto Eckstein to join the Energy Policy Project, a Ford Foundation–funded study group on energy policy. The purpose of this project was to reduce energy consumption, an objective that continues to be sought to the present. During and after the Energy Policy Project, he continued his research on energy and became one of the nation's leading authorities on the world oil market.

Excitement seemed to follow Houthakker in those years, and we were confronted in October 1973 by the first “Oil Shock,” leading to a fivefold increase in energy prices. This development seemed to obviate the necessity for energy policy until the Nixon Administration eliminated price controls on everything except energy, leading to widespread shortages. Houthakker published an important book, *The World Price of Oil*, in 1976.

In 1988, Robert Pollak once again highlighted the significance of Houthakker's work in his essay “Houthakker's Contributions to Economics,” when Houthakker was elected as a Distinguished Fellow of the American Economic Association. His empirical findings, like his theoretical work, have become a permanent part of economics. As Houthakker himself has written:

*If the theory of consumer choice is to be more closely integrated with empirical demand research...it needs to be both generalized and specialized. Generalization is needed to deal with phenomena...that are outside the scope of the classical assumption; specialization is needed to give more substance, and hence more verifiability, to the very general theories that have traditionally been the theorist's stock-in-trade, and to enable the formulation of additional theories based on less general, but perhaps equally realistic, hypotheses. These...in turn provide new impetus and directions for empirical analysis.*

I would like to give attention to Houthakker's little-known interests in the social and ethical aspects of economics. In 1991, he organized the Symposium for the Pontifical Council for Justice and Peace on the centennial of the papal encyclical *Rerum Novarum*, translated by the Vatican as “Capital and Labor.” It was written for Pope Leo XIII in 1891 and presented the papal view of capitalism, socialism, and the role of the state. The focus was on the Church's responsibilities, especially to the poor and disadvantaged. In 1991, Pope John Paul II, thus far the only Polish pope, wrote the encyclical *Centessimus*

*Annus*, the hundredth year. It brought the papal view of capitalism, socialism, and the role of the state up to date, taking into account the collapse of the Soviet Union.

Pope John Paul II had been a close friend of Houthakker and Anna-Teresa since the 1970s, a story recounted in the well-known biography *His Holiness*, by Carl Bernstein (of Woodward and Bernstein fame) and Italian journalist Marco Politi. The authors quote Houthakker on his conversations with Pope John Paul II, then the Polish Cardinal Archbishop Karol Wojtyła: “I tried to talk with him about the merits of capitalism and democracy, but I had the feeling that I wasn’t getting anywhere.” Apparently, the conversations did have an impact. The papal symposium was a success and led to the book *Social and Ethical Aspects of Economics: A Colloquium in the Vatican*, published in 1992. It includes contributions by Houthakker and his Harvard colleagues Jeffrey Sachs and Amartya Sen. Sen later won a Nobel Prize in economics. In 1996, Houthakker published a textbook, *The Economics of Financial Markets*, with Peter J. Williamson.

The symposium was among the services to the Church acknowledged in Houthakker’s election as a Knight Commander with Star in the Papal Order of Saint Gregory in 2003. The knighthood was added to the long list of honors that Houthakker had received. These included President of the Econometric Society in 1967, Vice President of the American Economic Association in 1972, and election to the American Academy of Arts and Sciences (1968) and the National Academy of Sciences (1974). He also received corresponding membership in the Netherlands Academy of Sciences and was awarded honorary degrees from his alma mater, the University of Amsterdam, and the University of Fribourg.

A description of Houthakker, written on the occasion of his passing by his friend and former colleague Andreu Mas-Colell, now Professor of Economics at Pompeu Fabra University in Barcelona, captures him well:

*I was privileged to be his colleague at Harvard, where he received me with much kindness and I discovered a gentle man with very broad intellectual and social interests. My own proclivities led to many exchanges on revealed preference and aggregation theory. I distinctly recall them to be most enlightening. I was curious about the early history of revealed preference theory, and of the debates that led to the formulation of the Strong Axiom, a concept introduced by him and that will last for the ages. He would probe me on current developments. He was, for example,*

*intrigued by Hildebrand's work on aggregate production functions, a topic on which he had made seminal contributions. He was invariably sharp and illuminating.*

Houthakker was devoted to economics research from his youth in Amsterdam until near the end of his life. Although he lived the life of a humble scholar at Cambridge, he ventured into the real world as an advisor to Richard Nixon and Pope John Paul II. He lived through the occupation of the Netherlands in World War II and was present at the collapse of the Bretton Woods institutions that were created in its aftermath. Given his faith in democracy and the market economy, he was fortunate to witness the fall of communism from the perspective of Pope John Paul II, one of the creators of the new world order.



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