

WP 2003-12  
April 2003



# Working Paper

Department of Applied Economics and Management  
Cornell University, Ithaca, New York 14853-7801 USA

## **JOSEPH STIGLITZ AND ECONOMICS FOR AN IMPERFECT WORLD**

**Richard Arnott, Bruce Greenwald,  
Ravi Kanbur and Barry Nalebuff**

It is the Policy of Cornell University actively to support equality of educational and employment opportunity. No person shall be denied admission to any educational program or activity or be denied employment on the basis of any legally prohibited discrimination involving, but not limited to, such factors as race, color, creed, religion, national or ethnic origin, sex, age or handicap. The University is committed to the maintenance of affirmative action programs which will assure the continuation of such equality of opportunity.

# **Joseph Stiglitz and Economics for an Imperfect World**

**Introduction**

**to**

**“Economics for an Imperfect World: Essays in Honor of Joseph Stiglitz”  
MIT Press, forthcoming 2003**

**Edited By**

**Richard Arnott  
Bruce Greenwald  
Ravi Kanbur  
Barry Nalebuff**

**October 25, 2002**

Joseph Stiglitz was awarded the Nobel Prize in Economics in October 2001, for his contributions to the study of Imperfect Information. Eight months before this happy news, a group of his teachers, students and co-authors had come together to pay tribute to Joe by writing essays in his honor, to mark his 60th birthday in 2003. This volume is the result of those contributions.

The collection of authors in this volume reflects the impact that Joe has had on the profession of economics. They include four Nobel Prize winners, the President of an Ivy League University, the head of an Oxford College, the present Chief Economist of the World Bank, and other recognized leaders in economics from the leading universities around the world. The areas covered in this volume also reflect the “Stiglitzian” influences on much of economics today. The impact of his work is of course most strongly seen in the area of Imperfect Information, for which he won the Nobel Prize. But his influence extends to many other areas, including Macroeconomics, Public Economics and Development Economics, counting in the latter the problems of Transition from centrally planned to market economies. Throughout, Joe’s focus has been on the world as it actually is, with all of its imperfections—whether of information, competition, or government—rather than the world often depicted in the basic economics textbooks. Hence the title of this volume—Stiglitz’s economics is truly Economics for an Imperfect World.

On a more personal level, the authors who contributed to this volume along with the editors, have all felt the effect of Joe Stiglitz on their lives, in his role as student, teacher, mentor and co-author. Joe’s remarkable impact on the economics profession is rivaled only by his personal impact on economists the world over.

Joe Stiglitz was born in Gary, Indiana, in 1943. The grim realities of that declining steel town, with its stark inequalities and sharp racial discrimination, raised questions early on about these outcomes and the processes that led to them. He did his

undergraduate studies at Amherst College, where he was a leader of the student body. He took part in the great civil rights march in Washington, D.C. in 1963 and heard Martin Luther King give his “I have a dream” speech, another lasting influence on his thinking. He did his Ph.D at MIT, and two of his teachers, Noble Prize Winners Paul Samuelson and Robert Solow, have contributed papers to this volume.

He became a tenured full professor at Yale at the age of 27. Between 1969 and 1971 he was at the Institute for Development Studies, Nairobi, Kenya. The stay in a developing country led not only to his abiding interest in the problems of development, but also led him to ask questions of received economic doctrine, questions which eventually led to research that won him the Nobel Prize. After Yale, he taught at Stanford, Oxford, Princeton, and then Stanford again. This quarter century of research established him as one of the giants of economics, his contributions ranging across every part of the discipline and winning him the coveted Clark Medal of the American Economic Association. His co-authors from that prolific period are well represented in this volume. At every University where he taught, he imbued generations of graduate students with his infectious enthusiasm for ideas, and in his belief in the capacity of economic analysis to lead to a better world, provided it brought to center stage the imperfections of the real world. These students are proud to have studied under Joe and many of them, now leading economists in their own right across the world, have contributed essays to this volume.

In 1993 Joe Stiglitz left academia for the world of policy, to join President Clinton's Council of Economic Advisers, of which he eventually became Chairman, thereby holding a cabinet level position in the Clinton Administration. In 1997 he left the White House to become Senior Vice President and Chief Economist of the World Bank, a move that saw a strengthening of the close involvement with development that started his career and which he maintained throughout the years. In both of these policy positions, Joe argued against the strictures of orthodox economic policy, especially where it emanated from a market fundamentalism that Joe felt was not warranted in a world of imperfect information, imperfect competition and imperfect markets. In both of these positions, he came into conflict with the U.S. Treasury's espousal of orthodox economic policies that Joe felt were not serving the interests of the population at large, in particular the poor. Particularly after the East Asia crisis, Joe spoke out against what he saw as policies that were economically wrong headed and detrimental to growth and poverty reduction in poor countries. The World Bank came under pressure from the U.S. Treasury to silence Joe, but rather than be silenced he resigned and returned to academia in 2000, first to Stanford and now at Columbia University.

At first sight it is rather odd that there should be a need to develop a new economics for an imperfect world. Surely, all of economics should be about the world as it is. Even the use of the term "imperfections" stands in contradistinction to the usually assumed "perfections" of the world we analyze in our basic textbooks—perfect information, perfect competition, and so on. This was certainly true thirty-five years ago, when Joe Stiglitz began his economics education. It is sadly still the case for many basic

textbooks, although increasingly there are exceptions, and advanced textbooks do treat the imperfections of the real world. However, as Joe has argued, in the policy world it still seems that those who analyze and advise draw their basic instincts from the perfect information, perfect competition world of Econ 101, rather than the living, breathing world that we actually inhabit.

A key feature of that world is asymmetric information. In most situations, the two sides of the market have vastly different information about the good or service being transacted. In particular, sellers typically know more about what they are selling than buyers do. This can lead to adverse selection where low quality products drive out good quality products unless other actions are taken. What sorts of actions? Agents may choose to *signal* information that they have and that other parties do not. For those with high quality products, it may be worthwhile doing this rather than be shut out from the market as good quality drives out bad. Or one side of the market may offer a menu of transaction terms, relying on the choices by the other side to *screen* transactors of one type from another. Offering such a menu may be better than continuing with imperfect information, but in order for it to play its role as a screening device, the menu has to have a structure that will separate out different types into preferring different parts of the menu. The theory then predicts that the types of transactions that we see will be different from those that would emerge in a world of perfect information. Combining *signaling* and *screening* further enriches the scope of the analysis.

Joe's research often starts with a simple truth and then shows the profound consequences of that idea. Take for example the demonstration of the internal contradiction of perfect competition (Grossman and Stiglitz, 1980). A long tradition in economics argues that one of the features, and indeed virtues, of perfect competition is that prices reflect all of the information in the market. But if that is the case, then no one has any incentive to gather any information. They can get it for free by looking at prices. However, if no one gathers information, then the prices do not have any information to reflect. The paradox lays the basis for the argument that imperfect information in markets is likely to be the rule, rather than the exception. Adam Smith's invisible hand can be an imperfect guide, at best.

Many if not most features of real world transactions can only be understood in an imperfect information framework. The work of Joe Stiglitz, his fellow Nobel Prize winners for 2001 George Akerlof and Michael Spence, and many others including contributors to this volume, elaborates on this point. Whether it be education as a screening device (Stiglitz, 1975), the insurance market (Rothschild and Stiglitz, 1976), market prices as aggregators and disseminators of information, (Grossman and Stiglitz, 1980), unemployment as a worker discipline device (Shapiro and Stiglitz, 1984), price dispersion as a way of screening through search (Salop and Stiglitz, 1982), credit rationing (Stiglitz and Weiss, 1981), macroeconomic fluctuations (Greenwald, Stiglitz and Weiss, 1984), or any of a host of other issues analyzed in the articles listed in his bibliography at the end of this volume, Joe Stiglitz has led the way in showing how the imperfect information paradigm can help us understand economic phenomena much



better. The enormous richness and potential of the paradigm he helped to create is well reflected in Part I of this volume of essays, which analyze problems ranging from insurance and financial regulation, through cultural equilibria and cooperation, to industrial organization. They are a fitting tribute to the continued vitality and relevance of Joe's contributions in the area of imperfect information.

While the Noble Prize was awarded for Joe's seminal contributions on imperfect information, his influence on economics stretches far beyond even this gigantic achievement. Emerging partly from the imperfect information paradigm, but also from a realization of other sorts of imperfections in markets, Joe has made equally seminal contributions to Macroeconomics, Public Economics, and the Economics of Development and Transition. The papers in Part II of the volume reflect Joe's contributions in these areas.

Nobel Prize winners Robert Solow and George Akerlof are among those who contribute essays on macroeconomics and unemployment, on which Joe made an early contribution with his teacher (Solow and Stiglitz, 1968). A key aspect of Joe's work in these areas is the recognition of the pervasiveness of imperfect competition. One of his most cited papers is Dixit and Stiglitz (1977), which developed an elegant model that has become the workhorse of the new literature on monopolistic competition, with applications in industrial organization, and in trade, as amply demonstrated by two of the papers in Part II. Joe's work in Public Economics is characterized by the recognition of the imperfections of governments and the limited range of their instruments. The design

of tax and expenditure policies in this real world setting is enormously important for policy, but also exciting as an area of theoretical enquiry—Atkinson and Stiglitz (1980) remains as important a part of graduate courses in Public Economics as when it first came out, almost a quarter of a century ago. This “Atkinson-Stiglitz” perspective is present in the Public Economics papers in Part II, including a paper co-authored by Nobel Prize winner Kenneth Arrow. Finally, a collection of papers on development and transition problems rounds out this tribute. As noted earlier, development issues have influenced Joe’s thinking profoundly (Stiglitz, 1974). But, equally, development thinking has been influenced greatly by Joe, especially at a conjuncture where the economics of Econ 101 seems to be deployed to prescribe policies for countries where they are clearly not applicable. Failures of information, markets and governments are pervasive, and a sophisticated analysis is needed which also takes into account the needs of the poorest and most vulnerable (Stiglitz, 2002). The papers in Part II illustrate this well.

Joe Stiglitz turns 60 in 2003. All of us who knew him first as a student, as a teacher, or as a colleague, see no diminution in his energies and in his creativity. This is good news. The world will go on being imperfect, and it will be important for Joe to go on producing more Economics for an Imperfect World, and to go on encouraging others to do so as well. Happy Birthday, Joe!

## References

Atkinson, A.B. and Stiglitz, J. E. *Lectures in Public Economics*. London: McGraw-Hill, 1980.

Dixit, A. K. and J. E. Stiglitz. "Monopolistic Competition and Optimal Product Diversity." *American Economic Review* 67 (3), June 1977, pp 297-308.

Greenwald, B., J. E. Stiglitz, and A. Weiss. "Informational Imperfections in the capital markets and Macroeconomic Fluctuations." *American Economic Review* 74 (2), May 1984, pp 194-199.

Grossman, S. and J. E. Stiglitz. "On the Impossibility of Informationally Efficient Markets." *American Economic Review* 70(3), June 1980, pp. 123-136.

Rothschild, M. and J.E. Stiglitz. "Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information." *Quarterly Journal of Economics*, 90 (4), November 1976, pp 629-649.

Salop, S. and J.E. Stiglitz. "A Theory of Sales: A Simple Model of Equilibrium Price Dispersion with Identical Agents." *American Economic Review*, 72 (5), December 1982, pp 1121-1130.

Shapiro, C. and J. E. Stiglitz. "Equilibrium Unemployment as a Worker Discipline Device." *American Economic Review*, 74 (3), June 1984, pp 433-444.

Solow, R. and J.E. Stiglitz. "Output, Employment and Wages in the Short Run." *Quarterly Journal of Economics*, 82, November 1968, pp 537-560.

Stiglitz, J. E. "Alternative Theories of Wage Determination and Unemployment in L.D.C.'s: The Labor Turnover Model." *Quarterly Journal of Economics*, 88 (2), May 1974, pp 194-227.

Stiglitz, J. E. "The Theory of Screening, Education and the Distribution of Income." *American Economic Review*, 65 (3), June 1975, pp 283-300.

Stiglitz, J. E. *Globalization and Its Discontents*. New York: W. W. Norton. 2002.

Stiglitz, J. E. and A. Weiss. "Credit rationing in Markets with Imperfect Information." *American Economic Review*, 71 (3), June 1981, 393-410.