This is a portion of the eBook at doi:10.7551/mitpress/11130.001.0001

Comment: Shantayanan Devarajan

It is an honor to be a discussant for Kenneth Arrow's presentation. I learned general equilibrium theory from Gerard Debreu, whom Ken mentioned, and it's nice to hear from the other half of the great Arrow-Debreu pair. I will focus my remarks on the three nouns in the title of the paper, "Equilibrium, Welfare, and Information."

First, equilibrium. The proof of the existence of a general equilibrium, due to Arrow and Debreu, is one of the most powerful contributions in economics. Its power lies not just in its mathematical elegance but in its utility. For we use general equilibrium reasoning every day, including at the World Bank. Without the proof that the interaction among sectors through the price mechanism is a consistent system, we would be spinning tales out of thin air. The idea of the Dutch disease (Corden and Neary 1982), where a booming sector (such as oil) increases prices of nontradables and decreases output of the traditional tradable sector, is not just a random collection of hypotheses. It is a description of the general equilibrium system that, thanks to Arrow, we know the conditions under which it exists. I used a general equilibrium model to estimate the overvaluation of the CFA franc in Africa (Devarajan 1997). That estimate was quite close to the actual devaluation in 1994. Again, we could not have built the model, much less used it, without a coherent theory that this way of describing the economy is analytically founded. This idea of the interdependence of different sectors of the economy, mediated through prices, is central to development. In recent work on cronyism in Tunisia, Rijkers, Freund, and Nucifora (2016) looked at monopoly power in the telecommunications sector, which had been granted because of connections to the then-ruling family. The authors showed that by raising telecoms prices, the monopoly had undermined the competitiveness of Tunisia's

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garments and electronics manufacturing sectors, which is another example of applied general equilibrium reasoning (and an explanation of why Tunisia's exports are not growing). Perhaps most importantly, the whole notion of inequality, which is currently being hotly debated in rich and poor countries, has to be understood in terms of general equilibrium. This concept is fundamental, because the distribution of income is a function of both the uses and sources of income, which in turn are functions of how prices and quantities adjust in different sectors. For example, in a resource-rich developing country like Zambia, a favorable terms of trade shock can lead to greater inequality, because poor people spend more of their income on nontradable goods (Devarajan and Go 2003)—a general equilibrium result that may deviate from a first-round, partial equilibrium one. In short—and I say this with some trepidation, because many contributors to this volume have made enormous contributions to economics—the proof of the existence of general equilibrium is one of the most powerful contributions, not just to economics but also to the welfare of poor people.

This brings me to the second topic of Arrow's talk, which is welfare. The two fundamental theorems of welfare economics, which state that, under certain assumptions, a competitive equilibrium is Pareto optimal and that any Pareto optimum can be supported by a competitive equilibrium, are, well, fundamental. But as Arrow points out, they are important because of what happens when you relax some of the assumptions. For example, when externalities exist, the competitive equilibrium will not be Pareto optimal. This is the cornerstone of economic policy: The purpose of economic policy is, when the assumptions of the first welfare theorem don't hold, to get us from the competitive equilibrium to the social optimum. Here is where I think we have a problem. Although everyone agrees that our goal should be to maximize social welfare—we've studied the theorems in graduate school and can probably recite them—some of our behavior does not follow suit. Having agreed that our purpose is to increase welfare, we sometimes develop "special initiatives" that include such goals as universal primary enrollment, or universal health care, or universal financial access. To be sure, these are worthy goals, but it is not clear that achieving any one of them is welfare maximizing. You could likely do better by increasing access to something at a very low level than spending the marginal dollar on going from 99 to 100 percent access in one of the other areas. So I think

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development economists should be vigilant in pursuing the goal of welfare rather than appealing to constituencies or the latest trends.

Finally, despite its appeal, the general equilibrium model, and general equilibrium theory, have come under some criticism. One such criticism, which Arrow alluded to, is that the assumption that you have a complete set of markets for every contingency is unrealistic. It's hard to imagine that everybody knows exactly what they're going to buy under every possible state of the world. This is why a whole body of work has developed on general equilibrium under uncertainty. Joe Stiglitz and other contributors to this volume have made seminal contributions in this area. A second criticism is that people may not follow the optimizing behavior that is assumed in standard general equilibrium models. Consumers may not maximize utility; producers may not maximize profits. People have limited cognitive capacity. This has led to the area of behavioral economics, which my colleague Karla Hoff will discuss next. Despite the great progress that Karla and others have made in this field, we have yet to develop a fully specified theory of general equilibrium where agents are not optimizing, comparable to the traditional theory of general equilibrium. Such a theory would be a fitting tribute to the great work of Kenneth Arrow.

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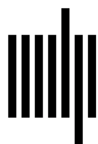
This is a section of doi:10.7551/mitpress/11130.001.0001

The State of Economics, the State of the World

Edited by: Kaushik Basu, David Rosenblatt, Claudia Sepúlveda

Citation:

The State of Economics, the State of the World
Edited by: Kaushik Basu, David Rosenblatt, Claudia Sepúlveda
DOI: 10.7551/mitpress/11130.001.0001
ISBN (electronic): 9780262353472
Publisher: The MIT Press
Published: 2020



The MIT Press

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This book was set in Stone Serif and Stone Sans by Westchester Publishing Services. Printed and bound in the United States of America.

Library of Congress Cataloging-in-Publication Data

Names: Basu, Kaushik, editor. | Sepúlveda, Claudia Paz, 1969– editor. |
Rosenblatt, David, editor.
Title: The state of economics, the state of the world / edited by Kaushik
Basu, Claudia Sepulveda, and David Rosenblatt.
Description: Cambridge, MA : MIT Press, [2019] | Includes bibliographical
references and index.
Identifiers: LCCN 2018046336 | ISBN 9780262039994 (hardcover : alk. paper)
Subjects: LCSH: Economic development. | Information technology—Economic
aspects. | Monetary policy. | Social change.
Classification: LCC HD82 .S8223 2019 | DDC 330.1—dc23
LC record available at https://lccn.loc.gov/2018046336

10 9 8 7 6 5 4 3 2 1

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