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

POVERTY, INEQUALITY AND DEVELOPMENT: MICRO-MACRO PERSPECTIVES AND LINKAGES

Alain de Janvry and Ravi Kanbur

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Poverty, Inequality and Development: Micro-Macro Perspectives and Linkages*

by

Alain de Janvry
University of California at Berkeley

and

Ravi Kanbur
Cornell University

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Abstract

This collection of essays honors a remarkable man and his work. Erik Thorbecke has made significant contributions to the microeconomic and the macroeconomic analysis of poverty, inequality and development, ranging from theory to empirics and policy. The essays in this volume display the same range. As a collection they make the fundamental point that deep understanding of these phenomena requires both the micro and the macro perspectives together, utilizing the strengths of each but also the special insights that come when the two are linked together. After an overview section which contains this introductory chapter and a chapter examining the historical roots of Erik Thorbecke's motivations, the essays in this volume are grouped into four parts, each part identifying a major strand of Erik's work—Measurement of Poverty and Inequality, Micro Behavior and Market Failure, SAMs and CGEs, and Institutions and Development. The range of topics covered in the essays, written by leading authorities in their own areas, highlight the extraordinary depth and breadth of Erik Thorbecke's influence in research and policy on poverty, inequality and development.

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* Introduction to Alain de Janvry and Ravi Kanbur (eds.) *Poverty, Inequality and Development: Essays in Honor of Erik Thorbecke*, Kluwer, forthcoming.

The essays in this volume honor Erik Thorbecke, a remarkable man who has devoted his life's work to analyzing issues of poverty, inequality and development. The roots of his motivation are examined by Jacob Kol in Chapter 2 of this volume. The output of this motivation is all around us. The most commonly used family of poverty measures in applied work today carries his name—the T in the "FGT" family of poverty indices stands for Thorbecke. It was in 1984 that the famous paper proposing this index, by Erik and two of his then graduate students, was published. But in the twenty years before and since, Erik has produced a mountain of work that establishes his place in the literature on poverty, inequality and development. The papers in this volume pay tribute to Erik's accomplishments by themselves making significant contributions to that literature.

These papers were presented at a conference in honor of Erik Thorbecke held at Cornell University on October 10-11, 2003. The conference was supported by the funds of the H.E. Babcock Chair in Food, Nutrition and Public Policy, and the T.H. Lee Chair in World Affairs at Cornell University. We are grateful to these funds for their financial support, to Joyce Knuutila for managing the conference and to Susan Snyder for preparing the volume for publication.

After the beginning overview section, comprising this introduction to the chapters by the editors and Jacob Kol's introduction to Erik Thorbecke, the volume is divided into four parts, each reflecting a dimension of Erik's contribution to the literature. We begin with the measurement of poverty and inequality in Part I. Part II moves to individual behavior and market failure. Part III makes the transition to economy wide issues and Part IV addresses the role of institutions.

The four papers in Part I take up the issues connected with the measurement of poverty and inequality, to which Erik has made fundamental contributions. The paper by Martin Ravallion and Michael Lokshin (Chapter 3) addresses a central building block of poverty measurement—the poverty line. The two most commonly used procedures for determining poverty lines, the "Food-Energy Intake" (FEI) method and the "Cost-of-Basic Needs" (CBN) method, are assessed with respect to "utility consistency". Both methods do badly in the assessment. The FEI method is shown to be theoretically problematic, and unlikely to be utility consistent. The utility consistency of the CBN method is an empirical matter, but it is shown to be violated in the application to Russian regional poverty lines. Interestingly, it is observed that this may be because of the decentralized administrative process followed in Russia in setting the poverty lines, leading to a tension between local autonomy and consistency across the nation.

Given the poverty line, how is the information in the distribution of wellbeing to be aggregated to produce a poverty index? This is where Erik Thorbecke has made perhaps his most famous contribution, and his co-author in that effort, James Foster, gives an overview of the axiomatic approach to poverty measurement in Chapter 4. He provides an illuminating categorization of axioms sets—Invariance axioms, Dominance axioms, Continuity axioms and Subgroup axioms. This categorization will prove useful to those taking up deeper investigation of different aspects of poverty measurement. For example, the subgroup axioms are closely related to the decomposability of poverty measures—a

well known and most useful property of the FGT index. At the end of his paper, Foster takes up the intriguing question of the role of generalized means in poverty measurement, playing off their role in inequality measurement. He argues that just as many inequality measures are a function of a ratio of two generalized means, many poverty measures are functions of a ratio of a generalized mean to the poverty line. This observation must surely open up a rich seam of investigation in the theory of poverty measurement.

The contribution by Gary Fields, Chapter 5, addresses a long standing concern about what information is conveyed by poverty and inequality measures separately, and whether they can and should be combined. Fields asks two question on this combining—can it be done and should it be done? His answers are—yes, and (by and large) no. Using simple stylized growth paths, all of which exhibit first order dominance, he argues that in most cases he would not want to combine poverty and inequality indices into a single "blend" index since it can give intuitively misleading results. Great caution is thus called for in taking standard measures of poverty and standard measures of inequality and constructing (for example) a weighted combination of the two as a welfare measure.

While the papers by Ravallion and Lokshin and by Foster are entirely about poverty, and the paper by Fields is about combining measures of poverty and inequality, the focus of the paper by David Sahn, Chapter 6, is on inequality. However, the domain of measurement is different from the standard one of income. The focus is on inequality in health, with an application to data on Indian states. Health is measured by standardized height for children, and is used analogously to income in computation of inequality. This inequality is first of all compared across Indian states. Then intertemporal changes in "nutrition poverty" (or "health poverty"), defined as the percentage of children below two standard deviations of the standardized height distribution, are decomposed into components reflecting change in the mean and change in inequality. This procedure is familiar from income poverty analysis, where the FGT poverty measure has been decomposed in this manner, but its application to non-income dimensions of wellbeing is novel.

Part II of the volume turns to micro and market behavior in understanding poverty and inequality in developing countries. Chapter 7, by Jeffrey Nugent and Shailender Swaminathan, reflects not only Erik Thorbecke's work on inequality and the microeconomics of poor households, but also his long standing interest in Indonesia. Using data from Indonesia, the authors address the important issue of how inequality within a community affects investments in education by households in that community. There are several channels, suggested by theory, through which a group characteristic like inequality could affect individual level decisions—and the effects do not necessarily all go in the same direction. The issue is thus primarily an empirical one. They show that greater inequality can indeed be associated with lower household level investments in education. Moreover, they identify some very interesting channels for this effect—for example, through the influence of community level inequality on the supply of educational infrastructure in that community. There is now a growing literature on inequality and the supply of local public goods, and this paper is an important empirical contribution to that literature.

Chapter 8, by Christopher Barrett and John McPeak, addresses a topic of growing importance in the literature on poverty, inequality and development—risk and vulnerability. Erik Thorbecke has himself contributed to the growth of this part of the literature. Barrett and McPeak explore three questions: "What is the etiology of chronic poverty and vulnerability? How does nutrition-related health risk affect patterns of chronic poverty and vulnerability? What are the implications for the design of development policy, especially safety net implications?" Based on their own work and on the growing literature, they begin to develop answers to these questions. As important as the specific answers, however, is their general conclusion that this is a hugely under researched area relative to its importance in the actual lives of poor people in poor countries. An important implication is that we will have to focus on risk and vulnerability relative to critical thresholds that emerge from the context in which households live, and not (just) relative to standard poverty lines, as is the dominant practice in the literature to date. The design of safety nets relative to these thresholds is an important policy question waiting to be addressed.

A constant theme in Erik's work on development has been the importance of various types of market failure in explaining household behavior and household outcomes. The importance of this perspective is now well recognized. In Chapter 9, Alain de Janvry and Elisabeth Sadoulet present an overview of the literature on farm households that has developed in response to this challenge. In demonstrating that these households in poor countries are "systematically embedded in complex configurations characterized by incomplete and failing markets," they draw three important conclusions. The first is that a whole range of behaviors, such as the interrelatioships between health and education decisions and production choices, can be understood only in the context of behavioral responses to market failures. The second conclusion, however, is that we do not know "how close to a first best situation do these countervailing strategies allow households to get." This is a call for detailed and targeted empirical research. But in order to get at these estimates we will need in the first place improved structural models. This is the third conclusion and it brings us back full circle to the authors' central point—to construct these models, we need a much better understanding than we currently have of household behavior in the presence of market failure.

Kaushik Basu continues the theme of the impact of markets on the well being of the poor in Chapter 10, which starts with the statement: "Markets often work in peculiar ways." His central thesis is that "India's myriad labor laws, meant to protect laborers, may actually hurt them." Thus market failures may call for intervention to help the poor, but if it is not the right intervention then the interaction between individual behavior and market response may end up actually making them worse off. This chapter highlights a method that involves an intricate interplay between deep institutional knowledge of a specific context, in this case Indian labor law, combined with parsimonious modeling of the key features of that situation to address the question at hand. The conclusions show that extreme positions are not supported in terms of policy implications. Basu argues not that there should be complete freedom of contracting between employers and workers, but somewhat more freedom than there is now in the Indian case. Similarly, he argues that minimum wages can benefit workers provided they are not too high. The issue is not

therefore an ideological one of minimum wages or not, but a case and context specific one of the level at which it should be set.

Chapters 7-10, each in its own way, began the process of linking individual or household behaviors and outcomes to the broader context of communities, markets and the nation. The chapters in Parts III and IV of the volume continue this process and take it to the economy wide and even global level in systematic fashion, addressing macroeconomic and institutional issues. The papers in Part III contribute to a literature with which Erik Thorbecke's name is linked very closely as founder. This is the literature on Social Accounting Matrices (SAMs) and Computable General Equilibrium Models (CGEs). Erik has been one of the pioneers not only in conceptualizing and modeling, but also in application of these models and frameworks to many countries and to a wide range of specific policy problems.

In the first paper in Part III of the volume, Chapter 11, Sherman Robinson takes an overview of a range of models in the SAM-CGE tradition. He places the models on a spectrum between SAM fix-price multiplier models on the one hand and a full blown Walrasian CGE model on the other. The tradition of structuralist macro economic models has much in common with the first, while the neoclassical general equilibrium tradition is clearly linked to the second. Models along the spectrum are identified by particular macro closure rules. Robinson explores the tension between the two ends of the spectrum, and asks if this can be reduced in some way. He argues that while the tension can never be eliminated, with judicious implementation, "many features of Keynesian demand-driven multiplier models can be accommodated within the flow-equilibrium structure of a CGE model..." But Robinson concludes with the view that it is considerations of dynamics, including forward looking expectations, that may well provide fertile ground for integration.

Chapter 12, by Graham Pyatt and Jeffery Round, stays within the fix-price SAM multiplier framework but explicitly links the macro economy to poverty impacts. Once again, Erik Thorbecke was one of the early contributors to this literature, as made clear by the authors. The paper first of all derives the multipliers—which measure the impact of injections into any one account on all of the other accounts. It then goes on to apply these to an analysis of the poverty impacts of such injections, and to present empirical results using a SAM for Indonesia originally compiled by Keuning (a co-author of Chapter 13 in this volume) and Thorbecke. The paper concludes by taking up an issue raised recently by Erik—the need to move away from fixed-price formulations to a general equilibrium setting where prices are determined endogenously. This of course relates back to the tensions emphasized by Robinson in Chapter 11. Pyatt and Thorbecke argue that to the extent that changing prices are important for capacity constraints, this can be incorporated in fixed-price models under various assumptions. However, so far as the implications of changing prices for simulation of changes in poverty are concerned, they argue that micro simulation techniques can improve poverty impact estimates.

All work on SAMs recognizes that SAM-based analysis, however sophisticated in theory, is only as good as the actual SAM to which it is applied. Indeed, Pyatt and Round

end Chapter 12 with the observation that compared to issues of "model closure", for example, "improving primary data and greater sophistication in the construction of social accounting matrices are probably more important avenues towards a better understanding of basic issues and mechanisms." In their contribution to this volume in Chapter 13, Tjeerd Jellema, Steven Keuning, Peter McAdam and Reimund Mink take us through the development of an actual accounting matrix, this time for the Euro area. They show how existing data sets can be used in an overall framework of linking national accounting matrices together. The specific issue they consider is the European Central Bank's monetary policy analysis, and the Euro Area Accounting Matrix (EAAM) is constructed with this emphasis. But what the paper illustrates is the careful work needed in providing a solid empirical basis for SAMs.

Chapter 14 of the volume uses a SAM for Vietnam to address a crucial issue for that country—the economy-wide impact of globalization and economic reform. David Roland-Holst and Finn Tarp use a new and detailed SAM for Vietnam constructed for the year 2000. The focus is on price transmission in a liberalizing economy as it goes from a closed administered price system to an open economy facing world prices. In many ways price transmission can be seen as the dual to the demand transmission examined by Pyatt and Round in Chapter 12. Alternative decompositions are presented and then quantified for Vietnam. A basic conclusion is that simply looking at direct effects of, say, equating domestic and world prices in a particular sector, is likely to be a very misleading guide to the true impacts once the economy wide repercussions are taken into account—"relying on intuition or rules of thumb alone in this context is very unlikely to achieve something approaching optimality." Moreover, decomposition based on path analysis, developed in the paper, highlights the sectors that are most crucial in terms of the economy wide price response.

Part IV of this volume addresses a broad range of issues in the institutional dimension of an economy wide perspective—all issues to which Erik Thorbecke has made significant contributions. A wide range of topics is considered, including agricultural policy, development assistance and debates on dualism. In Chapter 15 Christian Morrisson starts with the work of Engerman and Sokoloff on inequality, institutions and growth. The arguments in these papers, and in the subsequent literature, are examined with respect to the experiences of Ghana, Kenya and Senegal. Specifically, the paper assesses whether in the African context (i) inequality is related to factor endowments, (ii) institutional development depends on inequality and factor endowments and (iii) institutions in turn influence income distribution. These hypotheses are subjected to detailed country specific assessment and complex patterns are found which support some of these relations but not others, and at different time periods. The overall conclusion stresses the importance of context specificity in making claims about the causes or the consequences of institutional development and its links to inequality.

It is sometimes not fully appreciated that Erik Thorbecke has made major contributions to the debate on development assistance, including a comprehensive recent review of the relationship between how the evolution of views on development has interacted with the evolution of views on aid effectiveness and the institutions of aid

delivery. In Chapter 16, Ravi Kanbur and Matti Tuomala pay tribute to this aspect of Erik's work by exploring optimal aid allocation when conditionality does not work, as indeed shown by the evidence. In other words, they assume that aid is simply a net addition to the recipient government's resources, the use of which cannot be influenced by the donor. Suppose the donor wanted to allocate aid between two recipients so as to maximize a welfare function that was sensitive to the wellbeing of the poorest. What should determine this aid allocation? Kanbur and Tuomala answer this question by modeling each recipient government's behavior as choosing an optimal non-linear income tax given the resources it gets from the outside. Apart from the volume of these resources, a number of other factors influence the progressivity of the recipient government's policies—including its inequality aversion and the structural inequality in that society. The calculations in the chapter show that poorer countries and those with greater inequality aversion should get a larger share of aid. By contrast, countries with greater structural inequality should get a smaller share of aid.

Chapter 17 continues the discussion of policy and institutions, but focuses on the agricultural sector. The author of this chapter, Per Pinstrup-Andersen, is Erik Thorbecke's successor in the H.E. Babcock Chair at Cornell University. His focus in this chapter is on nutrition goals, and the use of agricultural research and policy to achieve them. Needless to say, Erik has contributed much to the analysis of both nutrition and agricultural policy. The chapter addresses five questions: "1. How could agricultural research and policy improve nutrition? 2. Should nutrition goals guide agricultural research and policy? 3. What policy measures are likely to be effective? 4. Are nutrition goals best achieved through pre- or post-harvest changes? 5. Would consumer behavior enhance or reduce the intended effect?" Each of these questions is investigated and specific proposals are made to enhance the impact of agricultural research and policy on nutritional goals, but the general conclusion is that nutritional goals should be incorporated directly into the decision making processes in these policies. At the same time, however, the impact of agricultural policies alone will be limited if determined in isolation from other interventions that affect determinants of nutritional outcomes such as contaminated water and sanitation.

The final chapter in this volume, Chapter 18, is perhaps the one with the broadest perspective. In it, Gus Ranis revisits one of the grand organizing themes of the development literature in the last fifty years—dualism. His question, "Is Dualism Worth Revisiting?", is given an affirmative answer. He sees dualism as a metaphor, encompassing the sociological dualism of Boeke as well as the conventional economic sense of the coexistence of sectors that are asymmetric in some aspect of organization. This latter sense, he argues, goes back to the physiocrats and their tableau économique, but its modern life obviously dates to Arthur Lewis's classic 1954 exposition on dualistic development. This framework has been developed and refined over the last fifty years, but, according to Ranis, "has been subjected to too much criticism over the past several decades," especially from the perspective of neoclassical economics. Ranis in turn subjects these critiques to a critique, and argues that while some of them are valid, there is still much to be said for the general metaphor of sectors that are asymmetric in crucial ways, as well as the specific insights generated by dual economy models.

This brings us to the end of our overview of this volume of essays in honor of Erik Thorbecke. The essays all address topics to which Erik has made, and continues to make, significant contributions in his own research and policy work. In their range and breadth, therefore, they show the extraordinary influence that Erik has had on the analysis of poverty, inequality and development. We look forward to his future contributions.