

Spatial Disparities in Human Development

P E R S P E C T I V E S F R O M A S I A

EDITED BY

RAVI KANBUR

ANTHONY J. VENABLES

AND GUANGHUA WAN

Spatial disparities in human development: Perspectives from Asia

Edited by Ravi Kanbur, Anthony J. Venables
and Guanghua Wan



**United Nations
University Press**

TOKYO • NEW YORK • PARIS

Contents

List of figures	vii
List of tables	ix
List of contributors	xiv
Foreword	xvii
<i>Anthony Shorrocks</i>	
Acknowledgements	xix
List of abbreviations	xxi
1 Spatial disparities in human development: An overview of the Asian evidence	1
<i>Ravi Kanbur, Anthony J. Venables and Guanghua Wan</i>	
Part I: Methodological issues	7
2 Poverty mapping with aggregate census data: What is the loss in precision?	9
<i>Nicholas Minot and Bob Baulch</i>	
3 A decomposition analysis of regional poverty in Russia	36
<i>Stanislav Kolenikov and Anthony Shorrocks</i>	

4 Trade liberalization and spatial inequality: A methodological innovation in Vietnamese perspective	64
<i>Henning Tarp Jensen and Finn Tarp</i>	
Part II: Inequality in Asia	87
5 Fifty years of regional inequality in China: A journey through central planning, reform and openness	89
<i>Ravi Kanbur and Xiaobo Zhang</i>	
6 Income inequality in rural China: Regression-based decomposition using household data	115
<i>Guanghua Wan and Zhangyue Zhou</i>	
7 Divergent means and convergent inequality of incomes among the provinces and cities of urban China	133
<i>John Knight, Li Shi and Zhao Renwei</i>	
8 Industrial location and spatial inequality: Theory and evidence from India	158
<i>Somik V. Lall and Sanjoy Chakravorty</i>	
9 Spatial horizontal inequality and the Maoist insurgency in Nepal	188
<i>S. Mansoob Murshed and Scott Gates</i>	
10 Changes in spatial income inequality in the Philippines: An exploratory analysis	207
<i>Arsenio M. Balisacan and Nobuhiko Fuwa</i>	
11 Spatial inequality and development in central Asia	233
<i>Kathryn H. Anderson and Richard Pomfret</i>	
Part III: Poverty in Asia	271
12 Decomposing spatial differences in poverty in India	273
<i>Shatakshee Dhongde</i>	
13 Commune-level estimation of poverty measures and its application in Cambodia	289
<i>Tomoki Fujii</i>	
Index	315

Spatial disparities in human development: An overview of the Asian evidence

Ravi Kanbur, Anthony J. Venables and Guanghua Wan

Overview of Asian evidence

Asia is the most populous continent on earth. Changes in inequality or poverty in this region alter the corresponding global picture. Owing to its remarkable economic growth and catch-up in living standards, Asia has been an equalizing force in international inequality. However, within-country inequalities in Asia are rising fast, retarding poverty reduction in the world. The rising inequality within individual countries is a cause of concern since Asia, particularly East Asia, has until recently been considered to be a good example of growth without worsening distribution.

It is known that a large proportion of the world's poor – 67 per cent in 1998 – are living in Asia, especially southern and rural parts. Although economic development has benefited the poor in some countries, this has not happened in all. On the contrary, poverty increased in Indonesia, Mongolia, Pakistan and Thailand during the 1990s. At the same time, poverty reduction slowed down in China, Bangladesh, India, the Philippines and South Korea and stagnated in Nepal, Sri Lanka and Mongolia. These changes are not unrelated to the rising inequality in Asian countries.

The recent rises in inequality in some Asian countries are in contrast to the historically stable levels of inequality in much of Asia. One possible explanation is the role of economic reforms. However, the Asian experience is mixed. For example, China and Viet Nam are two successful tran-

sition economies and have followed a similar reform path. However, inequality has been fairly stable in Viet Nam but increased substantially in China. Interestingly, inequality in China declined in the early years of reform, before starting to climb in 1985. Mongolia has seen inequality increase significantly without economic growth. Inequality has also gone up in non-transition but reforming economies such as India, the Philippines and Pakistan. It seems that the increasing inequalities have little to do with the economic or political system, be it democratic (India), dictatorship (China), market economy (Philippines), transition economy (Mongolia), reforming economy (Pakistan), or mixed combinations of political and economic systems.

Spatial inequality refers to the uneven distribution of income or other variables across different locations. It is a component of overall inequality between individuals. Measuring spatial inequality usually involves calculating interpersonal inequality when each income recipient is assumed to receive the mean income of their location group. When the Theil measure is used, total inequality can be conveniently broken down into two components: spatial inequality, or the so-called between-group component, and the within-group component. When spatial inequality dominates total inequality, policy measures can be targeted towards particular groups and/or locations. Dominance of the within-group component calls for policies targeting finer units within groups.

The between-group component is typically small except in the case of urban–rural divisions. However, what may be more important is the change in this component; although small in terms of levels, the contribution of spatial inequality to changes in inequality may be significant. Moreover, when spatial inequality coincides with divisions between socio-economic groups such as migrants and natives, different ethnicities, different religions and so on, it is not the numerical value but its mere existence that is important. Such spatial inequality can have severe consequences such as discontent, conflict and even war.

The chapters in this volume

Given the unique features and importance of the subject, the World Institute for Development Economics Research of the United Nations University (UNU-WIDER) launched a major research project on spatial inequality in 2002. As one of the project activities, a conference was held at the United Nations University Centre in Tokyo in March 2003, focusing on spatial inequality and development in Asia. Out of some 100 submissions, 18 papers were presented at the conference, and the chapters in this book were further selected, subject to the customary process of peer

review and revision. The chapters highlight a range of theoretical, empirical and policy issues in the evolution of spatial disparities in Asia. In doing so, they also contribute to the general literature on spatial inequality and development.

Part I of the volume consists of three methodologically oriented papers. A major problem with examining the structure of spatial inequality is a lack of disaggregated data. Most household sample surveys do not allow a disaggregation below the province level because of sample size, whereas censuses do not collect sufficiently detailed information on household income and expenditure. Recent methods attempt to combine the strengths of these two approaches by first estimating an income or expenditure equation from household surveys and then applying it to census data to generate distributions at highly disaggregated levels spatially. Minot and Baulch (Chapter 2) examine the loss in precision when aggregated census data are employed in this manner to measure poverty. They show analytically that such aggregation will result in poverty rates that are biased downward (upward) if the rate is below (above) 50 per cent and that the bias approaches zero as the poverty rate approaches zero, 50 per cent, and 100 per cent. Relying on data from Viet Nam, it is found that the average absolute error in estimating provincial poverty rates is about 2 percentage points if the data are aggregated to the enumeration area level and 3–4 percentage points if the data are aggregated to the provincial level. In ranking the 61 provinces by the incidence of poverty, even data aggregated to the provincial level perform reasonably well: the average absolute error in ranking is only 0.92.

Chapter 3, by Kolenikov and Shorrocks, is the second methodology-oriented study. They propose a new analytical framework for poverty decomposition, namely the Shapley value decomposition, which is based on cooperative game theory. Empirical results for Russia (whose land mass and many of whose poorer regions are mainly in Asia) suggest that the regional poverty variations are the result more of differences in inequality across regions than of those in real income per capita. When real income is split into nominal income and price components, differences in nominal income per capita emerge as more important than either inequality or price effects for the majority of regions.

The use of a computable general equilibrium (CGE) model to analyse poverty and inequality is a recent development. Relying on Vietnamese data, Jensen and Tarp in Chapter 4 calibrate two static CGE models with, respectively, 16 and 5,999 representative households. Aggregated and disaggregated household categories are consistently embedded in a social accounting matrix (SAM), and they map on a one-to-one basis to each other. Distinct differences in poverty assessments emerge when the impact of trade liberalization is analysed in the two models. This high-

lights the importance of modelling micro household behaviour and related income and expenditure distributions endogenously within a static CGE model framework. Simulations indicate that poverty will rise following a revenue-neutral lowering of trade taxes. This is interpreted as a worst-case scenario, which suggests that government should be proactive in combining trade liberalization measures with a pro-poor fiscal response to avoid increasing poverty in the short to medium term.

Part II focuses on case studies of inequality. It starts with China – considered to be the most dynamic and fast-growing economy in the world. Kanbur and Zhang (Chapter 5) compile a time series data set for China, which is used to construct a time profile of China's regional inequality for the period 1952–2000. They identify three peaks of inequality, coinciding with the Great Famine of the late 1950s, the Cultural Revolution of the late 1960s and 1970s, and finally the period of openness and global integration in the late 1990s. The authors then employ econometric analysis to establish that regional inequality is mainly caused by three key policy variables: the ratio of heavy industry to gross output, the degree of decentralization, and the degree of openness.

A considerable literature exists on the measurement of income inequality in China and its increasing trend. Much less is known, however, about the driving forces of this trend and their quantitative contributions. Chapter 6 by Wan and Zhou represents an attempt to apply the regression-based decomposition framework to the study of inequality accounting in rural China using household-level data. It is found that geography has been the dominating factor but is becoming less important in explaining total inequality. Capital input emerges as a most crucial determinant of income inequality. Farming structure is more important than labour and other inputs in contributing to income inequality across households.

Complementary to the Wan and Zhou study on rural China is Chapter 7 by Knight, Li and Zhao, which explores income inequality and its changes between 1988 and 1995, mainly for urban China. Although intra-province inequalities in income and wages increased everywhere except Gansu, and more for coastal provinces, the gaps in inequality are closing over time, particularly when city-level data are used. Convergence in inequality also appears when total income is broken down into factor components, with the sole exception of pensions. Conversely, mean incomes across provinces (cities) are found to be diverging (converging), primarily driven by the wage component. Labour mobility is claimed to be responsible for these conflicting findings. The earning gaps across location and over time are completely due to differences in returns to resources, particularly education, not in the level of resources.

The causes of spatial inequality in Asia's, indeed the world's, second

most populous economy come next in this volume. The study by Lall and Chakravorty (Chapter 8) argues that spatial inequality of industry location is a primary cause of spatial income inequality. It identifies spatial factors that have cost implications for firms, and factors that influence the location decisions of new industrial units. By examining the contribution of economic geography factors to the cost structure of firms in eight industry sectors, the authors show that local industrial diversity is the one factor with significant and substantial cost-reducing effects. Further, new private sector industrial investments in India are found to be biased toward existing industrial and coastal districts, whereas state industrial investments (in deep decline after structural reforms) are far less biased toward such districts. It is concluded that structural reforms lead to increased spatial inequality in industrialization, and therefore in income.

Chapter 9 by Murshed and Gates analyses a case in which spatial inequalities were a contributory factor in social breakdown. Spatial inequality amidst ethnic and caste divisions can be counted as a main cause of the Nepalese civil war, which is most intense in the mid and far western regions of Nepal. These regions are the most disadvantaged in terms of human development indicators (HDI) and asset (land) holdings. Using the number of deaths as the dependent variable and HDI and landlessness as control variables, a Poisson regression analysis indicates that the deaths across the districts of Nepal are most significantly explained by the degree of inequalities.

The case of the Philippines is taken up by Balisacan and Fuwa in Chapter 10. Although the Philippines is more unequal than other Asian countries, expenditure inequality in the Philippines experienced little change during 1988–2000. The high inequality is largely owing to within-sector non-spatial factors. Gaps between regions contribute no more than 15 per cent to the total inequality; the urban–rural divide constitutes only 5 per cent. The remaining 80 per cent is attributable to household characteristics, particularly the educational attainment of the household head. Further, average income across 72 provinces is found to converge at a speed of 10.7 per cent unconditionally, and 8.5 per cent conditionally.

Ethnic and sub-ethnic ties are strong in Central Asian countries, making spatial inequality particularly inflammatory. Focusing on inequality in five countries of Central Asia, Chapter 11 by Anderson and Pomfret documents the impact of political, social and economic institutions on inequality in private and public resources (education, health care and other services). Although the degree of spatial inequality differs from country to country, the provision of public goods reinforces expenditure inequality because their distributions seem to favour the wealthy and the Slavic communities. The inter-region gaps in expenditure and public resources are large and growing, not always as a result of the urban–rural divide.

In contrast to Knight, Li and Zhao's findings, labour mobility is found not to reduce spatial inequality because of strong family ties.

Part III comprises two chapters, both built on methodologies developed in Part I of this volume. Following the methodology developed in Chapter 4, Dhongde in Chapter 12 decomposes the poverty rate into income and distribution components for India for the period 1999–2000, taking all-India as the benchmark. It is found that differences in poverty rates across states are largely the result of income differences. Inequality is lower in less developed areas than elsewhere, highlighting the importance of growth in reducing poverty in less developed areas.

Complementary to Chapter 2, Chapter 13 by Fujii presents poverty mapping for Cambodia at the commune level. To this end, the author utilizes 1999 survey data with 1998 census data. An interesting feature is the extensive use of health, soil, location and climatological data to obtain better-fitted models. Finally, school meals programmes are used to illustrate how other maps may be combined with poverty maps to identify the target areas for social sector intervention programmes.

The volume contains both theoretical and empirical contributions to the study of poverty and inequality. Although restricted to the Asian region, many of the findings and approaches are applicable to other areas. In particular, policy implications drawn from these studies could be used by Asian and other governments in fighting poverty and working to curb rising inequality.

Clearly, limitations of space allow only a small selection of papers to be included here and many issues remain unexplored. It is our hope that this collection will bring about more interest in spatial inequality in Asia, particularly its causes, consequences and policy implications.

© United Nations University, 2006

The views expressed in this publication are those of the authors and do not necessarily reflect the views of the United Nations University.

United Nations University Press
United Nations University, 53-70, Jingumae 5-chome,
Shibuya-ku, Tokyo, 150-8925, Japan
Tel: +81-3-3499-2811 Fax: +81-3-3406-7345
E-mail: sales@hq.unu.edu
General enquiries: press@hq.unu.edu
<http://www.unu.edu>

United Nations University Office at the United Nations, New York
2 United Nations Plaza, Room DC2-2062, New York, NY 10017, USA
Tel: +1-212-963-6387 Fax: +1-212-371-9454
E-mail: unuona@ony.unu.edu

United Nations University Press is the publishing division of the United Nations University.

Cover design by Mea Rhee

Printed in India

ISBN 92-808-1122-3

Library of Congress Cataloging-in-Publication Data

Spatial disparities in human development : perspectives from Asia / edited by Ravi Kanbur, Anthony J. Venables, and Guanghua Wan.

p. cm.

Includes bibliographical references and index.

ISBN 9280811223 (pbk.)

1. Poor-Asia-Case studies. 2. Asia-Economic conditions-1945-Regional disparities. 3. Income distribution-Asia-Case studies. 4. Equality-Asia.

I. Kanbur, S. M. Ravi. II. Venables, Anthony. III. Wan, Guang Hua.

HC415.P5S62 2005

339.2/2095—dc22

2005029098

Spatial Disparities in Human Development: Perspectives from Asia

Edited by Ravi Kanbur, Anthony J. Venables and Guanghua Wan

Contributors:

Kathryn H. Anderson,
Arsenio M. Balisacan,
Bob Baulch,
Sanjoy Chakravorty,
Shatakshee Dhongde,
Tomoki Fujii,
Nobuhiko Fuwa,
Scott Gates,
Henning Tarp Jensen,
Ravi Kanbur,
John Knight,
Stanislav Kolenikov,
Somik Lall,
Nicholas Minot,
S. Mansoob Murshed,
Richard Pomfret,
Zhao Renwei, Li Shi,
Anthony Shorrocks,
Finn Tarp,
Anthony J. Venables,
Guanghua Wan,
Xiaobo Zhang,
Zhangyue Zhou

Spatial disparities are a measure of the unequal distribution of income, wealth, power and resources between peoples in different locations. As a dimension of overall inequality, spatial disparities have added significance when combined with regional divisions and political and ethnic tensions that can undermine social and political stability. The accurate measurement of spatial disparities and the analysis of their causes and consequences are therefore of particular importance.

This book focuses on issues of poverty and inequality that are directly related to the Millennium Development Goals. It addresses a wide range of issues including conflict-inequality, inter-linkages, poverty mapping, and the causes and consequences of inequality. It applies the latest research techniques such as regression-based decomposition, poverty decomposition and computable general equilibrium models.

The authors examine spatial disparities in countries and regions that are attracting considerable professional and political attention, such as China, Russia and Central Asian countries. Containing theoretical and empirical contributions by some of the most prominent economists in the area of inequality and development studies, this book will be of interest to economists, sociologists and policymakers in Asia and elsewhere.

Ravi Kanbur is the T. H. Lee Professor of World Affairs and Professor of Economics at Cornell University USA.

Anthony J. Venables is Chief Economist in the UK Department for International Development (DFID), and Professor of International Economics at the London School of Economics, UK.

Guanghua Wan is a Senior Research Fellow and Project Director at UNU-WIDER, Helsinki, Finland.

Book information:

ISBN 92-808-1122-3;
350pp; US\$35.00

Order from:



**United Nations
University Press**

53-70, Jingumae 5-chome, Shibuya-ku, Tokyo 150-8925, Japan
Tel +81-3-3499-2811; Fax +81-3-3406-7345
E-mail: sales@hq.unu.edu; http://www.unu.edu