RAFFAELE MATTIOLI LECTURES

Growth, Inequality and Globalization

Theory, History and Policy

PHILIPPE AGHION
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CAMBRIDGE
UNIVERSITY PRESS

PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE
The Pitt Building, Trumpington Street, Cambridge, United Kingdom

CAMBRIDGE UNIVERSITY PRESS
The Edinburgh Building, Cambridge CB2 2RU, UK
40 West 20th Street, New York, NY 10011–4211, USA
10 Stamford Road, Oakleigh, VIC 3166, Australia
Ruiz de Alarcón 13, 28014 Madrid, Spain
Dock House, The Waterfront, Cape Town 8001, South Africa

http://www.cambridge.org

First published 1998
Reprinted 2000, 2001

Printed in the United Kingdom at the University Press, Cambridge

Typeset in 9.5/13pt Utopia

A catalogue record for this book is available from the British Library

Library of Congress Cataloguing in Publication data
Aghion, Philippe.
Growth, inequality and globilization : theory, history, and policy / Philippe Aghion and Jeffrey G. Williamson.
p. cm. – (Raffaele Mattioli lectures)
Includes index.
ISBN 0 521 65070 4 (hardbound)
1. Economic development. 2. Income distribution. I. Williamson, Jeffrey G., 1935– II. Title. III. Series.
HD75.A339 1998
338.9–dc21 98-29551
CIP

ISBN 0 521 65070 4 hardback
ISBN 0 521 65910 8 paperback

Preface

The Raffaele Mattioli Lectures, in which many prominent economists have taken part, were established in 1976 by Banca Commerciale Italiana in association with Università Commerciale Luigi Bocconi as a memorial to the cultural legacy left by Raffaele Mattioli, for many years chairman of the bank.

The aim of the new series of Lectures, which is not only promoted by Banca Commerciale Italiana and Università Commerciale Luigi Bocconi but also supported by Università Cattolica del "Sacro Cuore" (Milan), Università degli Studi di Milano and Politecnico di Milano, is to create an opportunity for reflection and debate on topics of particular current interest, thus providing stimuli and ideas for the increasing challenges of a continually changing worldwide economic scenario.

The present initiative is therefore dedicated to the analysis of the effects of important changes which are now taking place in the world economy: the globalisation of markets, the continuous evolution in the field of information, technology and communications and the convergence of economics and international relations.

It is evident that these changes, coupled with the forthcoming European Monetary Union, provide many complex subjects that will be best dealt with from an interdisciplinary perspective.

Distinguished academics and researchers of all nationalities

concerned with all kinds of economic problems will be invited to take part in this enterprise, with the intention of contributing to the debate interconnecting economic theory with practical policy.

These lectures were presented in abbreviated form on November 20, 1997 at the Banca Commerciale Italiana (Milan) and on November 21, 1997 at Bocconi University (Milan). We are grateful for the efficient and cheerful staff at BCI and Bocconi, and for the useful comments from the discussants during the second day: Franco Amatori, Carlo Dell'Aringa, Francesco Giavazzi, Gianni Toniolo and Ignazio Visco.

Philippe Aghion, London, UK
Jeffrey G. Williamson, Cambridge, USA

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Introduction

One of us is a theorist, and one of us is an historian, but both of us are economists interested in modern debates about technical change, convergence, globalization, and inequality. The central bridge that spans theory and history over these debates is the Kuznets Curve.

In his Presidential address to the American Economic Association more than forty years ago, Simon Kuznets (1955) posed an hypothesis that still commands central attention in the pages of our journals. Kuznets suggested that in the long run, modern economic growth would generate an early industrialization phase of rising inequality, followed eventually by a mature industrialization phase of declining inequality. His idea was that income and wealth inequality within any country should tend to trace out an inverted U, a prediction subsequently called the Kuznets Curve.

Four decades ago, Kuznets had very little evidence to perform anything but a crude test of his hypothesis, and thus he was cautious. Yet, he was able to document falling inequality in many OECD countries in this century, some with the fall starting around World War I, some postponing the fall until 1929, but all sharing a revolutionary leveling of income and wealth from the 1920s to the 1960s. True, his evidence documenting a nineteenth century upswing of the Kuznets Curve was fragmentary at best, and he

was not able to offer any evidence for either side of the Kuznets Curve for countries in East Europe, the Middle East, Latin America, Asia or Africa. In any case, debate about the facts has been intense ever since, perhaps because capitalism seems to be on trial.

World Bank economists writing in the 1970s thought limited postwar data confirmed the Kuznets Curve, but better data and empirical methods subsequently dashed that confidence. Economic historians writing in the 1970s and 1980s thought limited data for Britain since 1760 and the United States since 1776 also confirmed the Kuznets Curve, but more and better evidence collected since has tended to erode that bold view, especially the evidence of a sharp rise in wage inequality in most OECD countries since the early 1970s.

Before an obituary for the Kuznets Curve is written, however, we should note how narrow has been the focus of this traditional literature. Kuznets derived his hypothesis by appealing to the factor demand effects generated by an economy's transition from traditional agriculture to modern industry. He offered reasons why this process should be labor saving, and unskilled labor saving in particular: when the transition is fast, labor saving should be dramatic and inequality should rise; when the transition is slow or complete, labor saving should evaporate and inequality should fall. Kuznets used "development" and GDP per capita levels as proxies for these (unskilled) labor-saving effects. Even if the proxies have turned out to be imperfect, and even if there have been important offsetting forces at work, absence of an inverted U does not necessarily imply absence of these labor-saving, demand-side forces. Kuznets' (unskilled) labor-saving effects may still be at work even in the absence of the Kuznets Curve.

What we need is less effort at establishing or rejecting the Kuznets Curve as a stylized fact, and more effort at uncovering the sources of inequality change. And there is absolutely no reason why the sources of inequality change cannot be identified the same way that macroeconomists have recently identified the sources of growth. What are the underlying forces that might cause rising inequality? The big three commonly put forward to

explain the recent inequality surge are trade, technology, and labor supply. Which factor has been most important in the recent past? Can the same three forces also explain inequality trends over the past two hundred years?

Part I (Aghion) and Part II (Williamson) of this book confront all of these issues. The first relies more on theory while the second relies more on history, but both are motivated by the same questions. What accounts for growth and inequality? How are they related? How does globalization influence both? While policies and institutions may have a clear impact on growth and inequality, to what extent do growth and inequality have an impact on policies and institutions? The chapters in this book offer some answers. While the answers are tentative and qualified, we hope they will at least serve to stimulate further work on what are surely fundamental questions about the human condition.

PART ONE
Inequality and economic growth

Philippe Aghion
with Cecilia García-Peñalosa
and Eve Caroli

1 Introduction

The question of how inequality is generated and how it reproduces over time has been a major concern for social scientists for more than a century. Yet the relationship between inequality and the process of economic development is far from being well understood. In particular, for the past forty years conventional economic wisdom on inequality and growth has been dominated by two fallacies:

(a) On the effect of inequality on growth in market economies, the standard argument is that inequality is *necessarily* good for incentives and therefore good for growth, although incentive and growth considerations might (sometimes) be traded off against equity or insurance aims.

This conventional wisdom has been challenged by a number of recent empirical studies. Several papers have used cross-country regressions of GDP growth on income inequality to examine the correlation between these two variables. Alesina and Rodrik (1994), Persson and Tabellini (1994), Perotti (1996), and Hausmann and Gavin (1996b) have all found that there is a negative correlation between average growth and measures of inequality over the 1960–1985 period (although the relationship is stronger for developed than for developing countries). Persson and Tabellini (1994) also present time-series evidence for nine developed economies over the period 1830–1985: their results show that inequality has a negative impact on growth at *all* the stages of development that these economies have gone through in the past 150 years (see Benabou (1996) for a comprehensive review of the literature).

This part draws heavily from joint work with Patrick Bolton, Peter Howitt, and GianLuca Violante. We also benefitted from numerous discussions with Beatriz Armendariz, Tony Atkinson and Roland Benabou, and from the comments of Juan Antonio García, Jon Temple, and Andrea Richter. Finally, we wish to thank the "Cost of Inequality" group of the McArthur Foundation and the School of Public Policy at UCL for invaluable intellectual and financial support.

Table 1. *Korea and the Philippines*

	Gini (%)	Q1	Q2	Q3	Q4	Q5	Q3–Q4	Q5/Q1	Q5/Q1–Q2
1965									
Korea	34.34	5.80	13.54	15.53	23.32	41.81	38.85	7.21	2.16
Philippines	51.32	3.50	12.50	8.00	20.00	56.00	20.50	16.00	3.50
1988									
Korea	33.64	7.39	12.29	16.27	21.81	42.24	38.08	5.72	2.15
Philippines	45.73	5.20	9.10	13.30	19.90	52.50	33.20	10.10	3.67

Source: Benabou (1996).

An interesting case study is that of South Korea and the Philippines during the past thirty years, discussed by Benabou (1996). In the early 1960s, these two countries looked quite similar with regard to major macroeconomic indicators (GDP per capita, investment per capita, average saving rates, etc.), although they differed in the degree of income inequality, as we can see in table 1. In the Philippines the ratio of the income share of the top 20 percent to the bottom 40 percent of the population was twice as large as in South Korea. Over the following thirty year period, fast growth in South Korea resulted in a five-fold increase of the output level, while that of the Philippines barely doubled. That is, contrary to what the standard argument predicts, the more unequal country grew more slowly.

(b) On the reverse causal relationship from growth to inequality, the conventional wisdom is that inequality should obey the so-called Kuznets hypothesis. Based on a cross-section regression of GNP per head and income distribution across a large number of countries, Kuznets (1955) found an inverted U-shaped relation between income inequality (measured by the Gini coefficient) and GNP per head. That is, the lowest and highest levels of GNP per head were associated with low

Table 2. *Wage inequality measured as the ratio of the wages of the top to the bottom decile*

	1970	1980	1990
Germany		2.5	2.5
United States	3.2	3.8	4.5
France	3.7	3.2	3.2
Italy		2.3	2.5
Japan		2.5	2.8
United Kingdom	2.5	2.6	3.3
Sweden	2.1	2.0	2.1

Source: Piketty (1996).

inequality, while middle levels were associated with high inequality. This result, though cross-sectional, suggested a pattern of inequality along the development process. The conjecture was that inequality should necessarily increase during the early stages of development (due to urbanization and industrialization) and decrease later on as industries would attract a large fraction of the rural labor force. And indeed, in the US the share of total wealth owned by the 10 percent richest households rose from 50 percent around 1770, to 70–80 percent around 1870, and then receded back to 50 percent in 1970.

Up to the 1970s Kuznets' prediction seemed to be validated by the experience not only of the US but also of most of the OECD. However, the downward trend in inequality experienced by these economies during the twentieth century has reversed sharply in recent times. In particular, the past fifteen years have witnessed a significant increase in wage inequality both *between* and *within* groups of workers with different levels of education, as shown by figure 1 and table 2 below.

The rise in inequality shows that, as industrialization goes on, it is not necessarily the case that the income

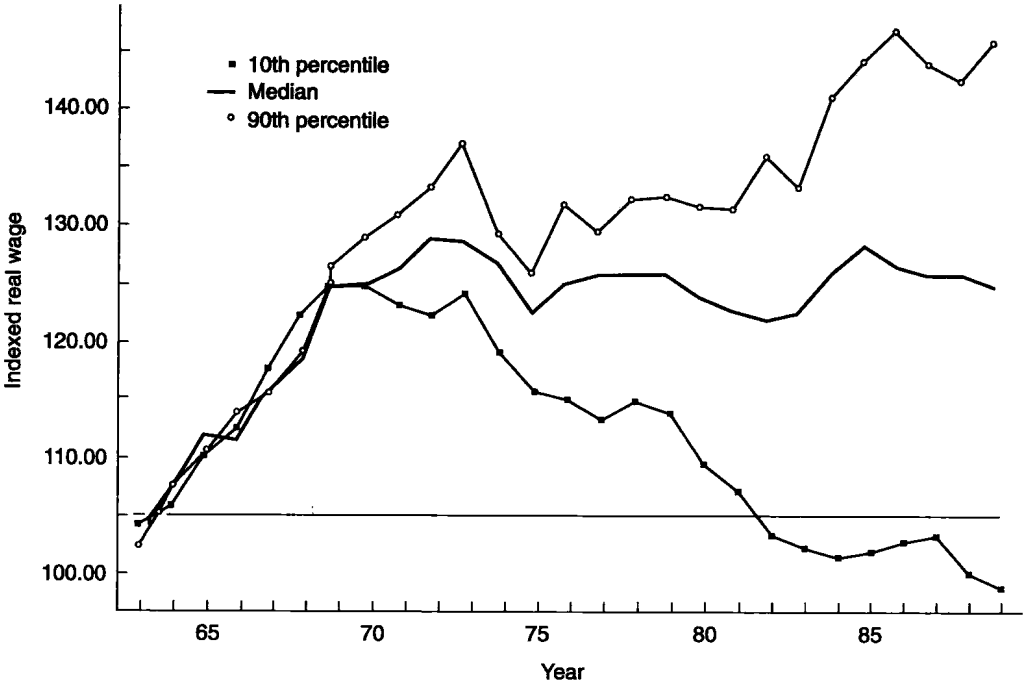

Figure 1 Indexed real weekly wages by percentile, 1963–1989
Source: Juhn, Murphy, and Pierce (1993).

and wage distributions should become less unequal. This suggests, in turn, that the evolution of inequality may be governed by factors other than the level of GNP per capita.

The aim of this first part of the book is to challenge the conventional wisdoms on inequality and growth which, as we have just argued, cannot explain recent empirical evidence. Our analysis remains within the framework of neoclassical economics. However, the introduction of additional aspects such as credit-market imperfections, moral hazard, non-neutral technical and organizational change, and labor-market institutions, gives a more complex and, we believe, more realistic picture of the relationship between inequality and economic growth. The first half of the lecture will be concerned with the effects of inequality on growth, with a view to providing new answers to the existing questions: Does inequality matter? If so, why is excessive inequality bad for aggregate growth? Is it possible to reconcile the above aggregate findings with existing microeconomic theories of incentives? In the second half, we will discuss the Kuznets' hypothesis. We will focus on the recent upsurge in wage and income inequality in developed countries and put forward candidate explanations for it, among which technological change will come out as the most important factor.

2 Inequality, incentives, and growth

Until recently, most economists agreed that inequality should, if at all, have a *stimulating* effect on capital accumulation and growth. Consequently, there would be a fundamental *tradeoff* between productive efficiency (and/or growth) and social justice, as redistribution would reduce differences in income and wealth, but would also diminish the incentives to accumulate wealth.

Two main considerations appear to underlie the presupposition that inequality should be growth enhancing. The first argument has to do with *investment indivisibilities*: investment projects, in particular the setting up of new industries or the