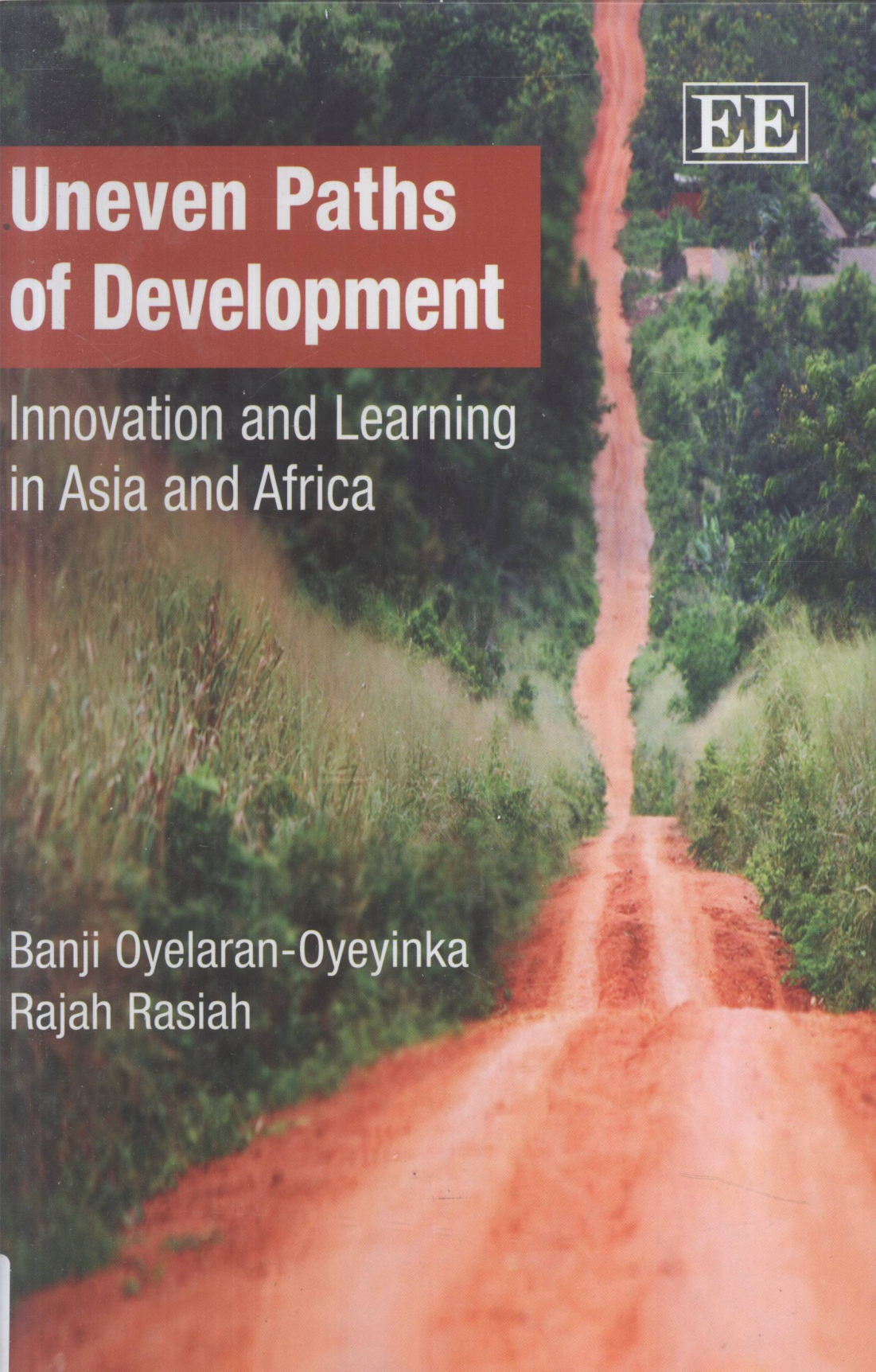
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Uneven Paths of Development
Innovation and Learning in Asia and Africa
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Rajah Rasiah

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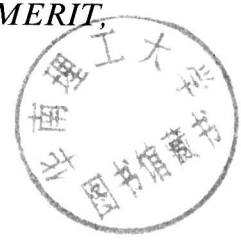

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Uneven Paths of Development

Dedication

Nadu, Fola, Banke and Koye
and
Krishna, Dayita and Dharmin.
They made it all worthwhile.

Preface

It is often assumed that East Asia has enjoyed superior institutions to drive rapid growth and structural change while the dismal growth rates recorded by sub-Saharan African (SSA) economies have been caused by inferior institutions. This image falls apart when a careful sectoral assessment is made of the critical institutions and organizations driving learning and innovation in the two geographical regions. Among the countries examined in this book only Taiwan and to some extent China enjoy superior institutions to drive industrial upgrading. While Malaysia has succeeded in stimulating a significant rise in per capita income and enjoys strong basic infrastructure and promotional institutions, the country lags behind Taiwan and China when it comes to high-tech institutions. Indonesia and SSA face a wider set of institutional support problems – though the basic infrastructure in many parts of South Africa is superior to that of a number of East Asian economies. Malaysia, Indonesia and SSA also lag behind in terms of knowledge accumulated due to a lack of commitment to invest in the right kinds of knowledge-stimulating and knowledge-appropriating institutions.

More importantly there is a huge gap in the speed and adjustment capabilities to adopt the right kinds of policies to promote and audit institutions between Malaysia, Indonesia and SSA. Among other things, this book shows that underlying the deep divide between the selected East Asian and SSA economies has been the consequences of the wide lag in policy competences of governments. Also, these divergent outcomes did not result from a lack of planning but from the quality of planning and the depth of commitment to identify which sectors best promote overall economic growth and development. Lastly, there was early recognition in Taiwan and China that change to existing structures of production and distribution was an imperative, and that this would require a Schumpeterian–Nelsonian type of institutional change to transform society. Richard Nelson and Sydney Winter's learning and innovation emphasis through institutional change is the central instrument of analysis in this book to examine the different paths taken by the economies selected. The commitment to experiment and put resources behind technological and institutional innovation in specific sectors in particularly Taiwan and China was markedly different to what we observed in Malaysia, Indonesia and SSA. Information hardware (IH) has been identified among strategic industries for promotion, but the

lack of institutional support to drive learning and innovation has stalled upgrading in the industry in Malaysia. In Indonesia and SSA economies the IH sector has been treated as homogenous and technological change has been taken as parametric. The twin evils of progress – namely ignorance and poor commitment to action – have been complicated by the lack of confidence to take autonomous decisions on the part of the Indonesian and African governments. Whereas ambitious governments lacking in a clear institutional focus tended to be responsible for failed industrial projects, the IH industry only received tax incentives to relocate operations in Indonesia, and in addition tax incentives for relocating and stimulating R&D operations in Malaysia.

The focus of this book is therefore on what can be learned in the complex processes of industrial, technological and organizational change in a sectoral system of IH across countries in East Asia and SSA. The IH innovation system is deliberately chosen to illustrate how sectors act as seeds of economic progress.

We carried out detailed firm-level studies in seven countries, three in Africa (Nigeria, Mauritius and South Africa) and four in Asia (China, Taiwan, Malaysia and Indonesia). Rajah Rasiah coordinated the studies in Malaysia, Taiwan and Indonesia, Xinxin Kong in China, Erika Mbula-Kraemer in South Africa, Sawkut Rojid in Mauritius and Banji Oyelaran-Oyeyinka in Nigeria in addition to overall project coordination. The data coordinated by Rajah Rasiah for Taiwan and Indonesia was collected by W.W. Chu, Yeo Lin and himself, and Ari Kuncoro respectively and funded by the Asian Development Bank. We would like to thank Brahm Prakash and Rajiv Kumar for allowing us to use the data on Taiwan and Indonesia. The project was conceived and conceptualized while we were both still with the United Nations University – UNU-MERIT, Maastricht, the Netherlands, which provided intellectual as well as financial support. The success of the project was due in large part to a network of colleagues as well as the different actors in firms, government offices and private organizations who spared time to be interviewed and to fill in questionnaires in the different countries. We are deeply grateful to them all. Erika Moran did a superb job in collecting background data on IH for different countries and worked hard to put the different chapters into a useable form. Finally, we want to acknowledge the invaluable role of our families, their patience and support, in the course of writing this book. Without their tolerance the job would have been much harder.

If there are any shortcomings, of course the usual caveat applies; we take full responsibility for any inadequacies of this book.

Banji Oyelaran-Oyeyinka and Rajah Rasiah

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1.1 INTRODUCTION

This book explores two broad themes and advances one proposition. At a general level, we seek to understand the factors that explain the wide differences in economic growth through divergent paths of development between East Asia and sub-Saharan Africa. The aim is to contribute to the debate on the underlying factors of historical catch-up, an idea that has a long tradition of scholarship (Hamilton, 1791; List, 1885; Gerschenkron, 1962; Amsden, 1989; Amsden and Chu, 2003; Schumpeter, 1934, 1942; Reinert, 2007).

The second theme in this book looks at the process of technological capability accumulation through learning that is now widely accepted as underpinning historical economic catch-up (Nelson and Winter, 1982; Rosenberg, 1976, 1982; Freeman, 1987, 1989; Amsden, 1989; Lundvall, 1988). In taking a comparative historical economic perspective, we are not unmindful of the deep-rooted differences in the history and cultures of the regions and countries as well as the political constituencies and policies that shape the paths of development (see Nelson and Winter, 1982; North, 1990). We feel that these differences may in fact help to shed light on our analyses. We therefore assume that the 'development trajectory of countries is not only non-unique but also malleable'.[1] This informs the title of this book: the paths of development of nations are uneven in the sense that countries chart unequal trajectories depending on where they come from, the processes they adopt (path-dependence), the natural endowment they possess and its consequences for sectoral specialization patterns.

Our broad proposition is that explicit investment in technological capability acquisition, an activity that is central to modern economic development, is underpinned by unique and nationally distinct sets of institutions and organizations. In other words, industrialization is not simply about the purchase of machinery or simply increasing investment in research and development (R&D). If this was the case, the rich mineral and oil-producing countries of the world would not need to exert much effort in achieving modernization. It is also not just about adopting manufacturing

as a policy over, say, agriculture or mineral processing.[2] The factors that shape the paths of development are rather complex but there are a few areas of agreement, namely: that knowledge, not just technology alone in its narrow sense, is critical; that certain leading sectors are able to propel economies in the direction of high-growth dynamics; that learning through diversity generation (this is triggered in economic systems through innovation) fosters economic development; and that diversities of institutions and systems of production (and innovation) explain the persistent differences in the paths of development and ultimately the economic outcomes of national endeavours (Schumpeter, 1942; Gerschenkron, 1962; Lundvall, 1988; Dosi, 1982). In other words, sectoral specificities are an outcome of policy decisions arising from political constituencies shaped by the mediation of initial conditions in the manner of integration of host sites in the world economy, institutional development and therefore of the learning and the direction for knowledge accumulation.

One important contribution of the book is the methodological approach we employ. While sub-Saharan African (SSA) and East Asian countries have been compared in the past, the studies have focused largely on examining and comparing Africa at broad macroeconomic levels with the evidently economically successful Asian countries in general, including Taiwan, South Korea and Japan. Past studies include *Asia and Africa: Legacies and Opportunities in Development* (Lindauer and Roemer, 1994), *Asian Industrialization and Africa* (Stein, 1995) and *Africa and Asia in Comparative Economic Perspective* (Lawrence and Thirtle, 2001). However, no study that we know of has approached this subject from the angle of learning and technological capability building. Again, while East Asia has been studied in respect of its 'miracle', studies on SSA have invariably been coded in terms of the 'tragedy' of economic failures and regress.[3] While there are empirical facts to justify both approaches, our focus is different and we look neither to tragedies nor miracles, but to learning. The various country studies leading to this book rely on evolutionary economic theorizing applied to specific sectors that have been influential in stimulating economic growth. In the early 1980s, no one could have predicted that electronics hardware would be one of the drivers of rapid growth of China. Neither could anyone have foreseen that India would become a major exporter of software.

This new dynamic in Asia has implications for both trade and development in Africa. Much of East Asia has become fully engaged in global trade in manufacturing and value-adding services while Africa remains connected largely through the supply of raw materials. Significantly, the terms of trade and volume as well as the destination of raw materials exports are experiencing geographical shifts, by which Africa is progressively exporting more to Asia and, in the process, fueling growth in the continent. But