Preface

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Economic development in countries behind the technological frontier requires innovation both by firms, and by farms, hospitals, and other organizations that provide goods and services. This is not innovation in the sense of introducing something new to the world economy, but of introducing something new to the particular context. In general, in economies that are significantly behind the frontier and that are aiming to catch up, the new practices put in place by firms tend to be modelled on practices that have been employed for some time by firms at the frontier. However, empirical research shows clearly that innovation of this kind has many of the attributes of innovation at the frontier. A large share of these efforts fails. Success generally requires a considerable amount of learning by the firms by doing and using before they acquire the needed capabilities.

This view of the process through which developing economies acquire increased capabilities to produce goods and services is relatively new among economists who study the process. Traditionally, economists have focused on the investments needed. They saw the problem of mastering new ways of doing things as mostly involving “technology transfer”, a term that played down the difficult learning processes involved.

In the early writings of development economists on the need for firm learning, the focus was on what the firms themselves needed to do. More recently, there has been growing recognition that firms are part of a community of organizations and institutions whose interactions affect the direction and efficacy of learning. The concept of an “innovation system,” which for some time has been employed by scholars of innovation in advanced industrial countries, is now more often used to denote and characterize the complex collection of actors and interactions that are involved in innovation in countries behind the frontiers and striving to catch up.

The research projects in this book focus on a particular part of the workings of innovation systems: the interactions between universities and public laboratories and firms, and how these interactions affect the efficacy of the efforts of firms to acquire new capabilities. In recent years, the relationships between universities and firms, and how these relationships
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influence the innovation process, have been extensively studied in high-income countries. The studies reported in this book are among the first to be directed to what is going on in developing countries.

Scholars of economic development, who have employed the innovation systems concept in their study of how developing countries catch up, have been particularly interested in the differences in these structures in developing countries and countries at the frontier. There are two central questions for most of the scholars who have contributed to this book. What is similar and what is different about the relationships between how universities and public laboratories interact with firms in developing as contrasted with advanced industrial economies? How do these differences reflect and support the differences witnessed in on-going innovations? This book is the first large-scale report on these matters, and their implications for policy in developing countries.