Innovation for Development and the Role of Government
A PERSPECTIVE FROM THE EAST ASIA AND PACIFIC REGION
INNOVATION FOR DEVELOPMENT AND THE ROLE OF GOVERNMENT

A Perspective from the East Asia and Pacific Region
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Introduction and Summary

Qimiao Fan and Douglas Zhihua Zeng

In today’s highly globalized economy, innovation has become the key driver for growth and competitiveness. The capability to innovate and to bring innovation successfully to market will be a crucial determinant of the global competitiveness of nations over the coming decades. An innovation system consists of the network of institutions, rules, and procedures that influences the ways a country acquires, creates, disseminates, and uses knowledge. The actors in the innovation system include universities, public and private research centers, enterprises, consulting firms, policy think tanks, policy makers, and others. The innovation performance of a country largely depends on how these actors relate to each other as elements of a broader system.

The concept of innovation encompasses not only technological innovation, that is, diffusion of new products and services of a technological nature into the economy, but equally includes nontechnological forms of innovation, such as organizational or institutional innovations. The latter may include the introduction of new management or marketing strategies, adoption of new policies or creation of a new service (or nontechnological product), and improved approaches to internal and external communications and positioning. Innovation is important not only for the production sectors, where technologies play a crucial role, but also for the service sectors, such as finance and public services.

This book is the result of a joint forum on “Innovation for Development” held by the World Bank and the China-based Asia-Pacific Finance and Development Center (AFDC) in Shanghai in September 2006. The book
examines the relationship between innovation, competitiveness, and economic growth; the role of innovation in financial sector development; and specific government policies for innovation in China.

The authors of book chapters are mostly policy practitioners and international experts on technology innovation or financial sector innovation. The book is intended to provide useful analysis on innovation and its determining role for growth and competitiveness and practical policy options for policy makers in the Asia-Pacific Economic Cooperation (APEC) countries/economies, especially those in China.

The opening address by Vice Minister Jun Wang emphasizes the importance of innovation to economic development using as an example China’s rising demand for natural resources. He points out that the speed of China’s economic growth has far outpaced this demand because China has constantly pushed ahead with technological and institutional innovations and reforms. However, given its vast population and scarcity of natural resources, China’s future economic development will face far greater pressures. How to promote sustainable development through innovation is a huge challenge for the Chinese government. To cope with this challenge, the government of China is ready to introduce four major measures: (1) proactively offer guidance and support to promote indigenous innovation; (2) gradually establish a technology innovation system with enterprises as the cornerstone, the market as the guide, and industry, academia, and research institutions fully integrated; (3) provide more support to small and medium enterprises (SMEs); and (4) ensure better protection of intellectual property rights (IPR). In the end, he hopes that the Asia-Pacific region will share experiences with innovation, learn from one another, and make concerted efforts to promote this region’s economic prosperity.

The keynote address by the former World Bank Vice President Frannie Leautier defines innovation as consisting of (1) new products, (2) new processes, (3) ways to penetrate new markets, (4) new supply sources or distribution methods, and (5) new industries. In addition to these five categories, the use of new management practices and organization structures, the development and retention of skilled personnel, and new ways of securing financial resources and managing interface with government and other external agencies are also forms of innovation. She acknowledges that innovation is a complex and multifaceted phenomenon and that there are many factors that influence a country’s innovation performance; therefore, there is an important role for the public sector to play, particu-
larly governments, in fostering innovation. However, innovation policies and ambitions have to be adapted to the levels of development and the institutional capacity of a country. She hopes that the forum will become a regular venue for South-South learning in the Asia-Pacific region.

The main contents of the book are divided into three parts. Part I, on innovation, competitiveness, and development, provides in one chapter a brief overview of the key determinants of innovation, the importance of innovation to competitiveness and development, and the role of government in fostering and promoting innovation. The key factors covered in chapter 1 include competition and market structure, IPR protection, quality and availability of human resources, investment in research and development (R&D), financing of innovation, technology diffusion systems, and the presence of industrial clusters. The chapter describes how governments can create an enabling environment for innovation by improving business climate, establishing well-balanced IPR systems, investing in human capital, enhancing the R&D infrastructure to attract private investment, encouraging the establishment of industrial clusters, and providing direct funding for basic research and developing a competitive financial market.

Part II of the book, which includes chapters 2 through 5, examines the relationship between innovation and financial development, and the importance of financial innovation for overall economic performance. Beyond generic analysis, this part also presents the cases of China and the APEC. In chapter 2, the first of two sections briefly synthesizes the contribution of key financial innovations and examines the role of information and communication technology (ICT) in accelerating the pace of innovation; the second section comments on the status of financial changes in China, the speed at which new financial instruments are being introduced into the Chinese financial system, and the areas where catch-up will have fruitful consequences. Four points that are covered in this chapter are worth noting. First, the financial system in the leading industrial countries is an unusually prolific source of innovations, and these are now spreading rapidly to industrializing countries. Second, as a result of the ICT revolution, the productivity of the financial sector has risen rapidly over the past decade. Third, financial innovations, which help to cut down transaction costs, promote liquidity, and better serve the requirements of borrowers and lenders, are making a significant difference to allocative efficiency and total factor productivity. Fourth, despite the great progress, China has yet to exploit the full potential of financial innovation.
Chapter 3 discusses China’s experience with financial sector development and some of the challenges ahead in the context of international experiences. China has made significant progress in financial reforms in recent years; however, the financial system still favors large state-owned enterprises over smaller firms and private enterprises, and there is still much to be done to complete bank reforms and to further develop capital markets that can play a larger role in the financial system. A more developed financial system, with competition among banks, sound institutions, and developed capital markets, can help to allocate scarce resources efficiently, ensuring that they are used in the most productive way.

Chapter 4 provides an overview of product innovation and institution building in China’s bond market over the past two years. The innovations of bond products in China include the securities companies’ short-term financing bills, the subordinated bonds and ordinary financing bonds issued by commercial banks, credit asset securitization, the hybrid capital bonds, and the nonfinancial corporations’ short-term financing bills. There are also great innovations in trading instruments and financial derivatives in the bond market. The major innovations in institution building include the establishment of the management mechanism for issuance of short-term financing bills, more stringent information disclosure requirements, and the introduction of the bond rating system. Driven by product innovation and institution building, China’s bond market has been growing very rapidly in recent years; however, the development of corporate bonds still lags behind. Citing experiences of China’s bond market in the past years, this chapter concludes that innovation is the driving force for the development of the bond market, which will contribute significantly to expanding the scale of corporate direct financing.

Chapter 5 discusses the key aspects of the finance sector that have been enabled by the introduction of innovation and technology, including efficiency, risk management, liquidity, pricing, regulation, and supervision. The advances in finance, in turn, have enabled and encouraged investment in technology and innovation in other sectors across an economy. This effect can be attributed to strengthened capabilities in risk management, financial modeling, product design, and proliferation of service forms. These key strengths promote technology and innovation, both at the firm level in real sectors and through their influence on specific markets for technology and innovation. This chapter also addresses the broader policy environment for financial innovation, such as strong legal, supervisory,
and regulatory regimes, and the role regional cooperation can play in harnessing and facilitating innovation in the finance sector, especially in the Asia-Pacific region.

Part III, which consists of chapters 6 through 8, examines some specific government policies to promote innovation in China. Chapter 6 discusses the progress and challenges of China’s enterprise innovation, and presents a set of policy recommendations. The author argues that the technology levels of China’s industries and enterprises have been increasing, but compared with the advanced countries, the innovation capacity of Chinese firms is still weak. This can be attributed to the lack of efficient integration between the economic activities and science and technology, lack of effective policies and institutions that enable key industries to stimulate indigenous innovation, weak IPR protection, a performance benchmarking system that fails to emphasize indigenous innovation by firms, and more. To strengthen the innovation capacity among Chinese firms, the government needs to develop and implement innovation-oriented public policies and policy measures. Measures could include effective industrial policies to promote indigenous innovation, strengthen IPR protection, and support SME innovation through special programs. In addition, technology absorption, adaptation, and commercialization capabilities could be improved by establishing R&D platforms for industrial and core technologies, fostering science and technology talents, strengthening technology transfer mechanisms, and using direct public funds, tax-based fiscal incentives, and government procurement to promote indigenous innovation.

Chapter 7 explores the fiscal policy options for China. First, China’s spending on R&D has been growing rapidly in past decades, but it’s also important to raise the efficiency of R&D through organizational changes. Second, it might be more desirable to shift emphasis from direct budgetary supports of R&D to R&D tax credits, leaving the decision on what to do research on with firms. Third, experienced research managers in China are still scarce, so offering incentives to foreign companies to set up R&D facilities can be a potential means of training Chinese researchers; also, offering substantial incentives to Chinese researchers abroad is an effective way to attract back overseas science and technology (S&T) talents. Fourth, it is desirable to rigorously examine the gains from the multiplication of technology zones and the returns accruing from the fiscal incentives provided. Although the government incentives provided have led to a number of state-sponsored
venture capital firms, the provision of capital remains subject to many administrative hurdles. Finally, because of the importance of high-quality S&T workers, fiscal support, at least for the leading universities, would be a sound investment.

Chapter 8 examines China’s tax policy options for innovation. It looks at the challenges and opportunities faced by China regarding technological innovation and advocates that the government should adopt effective tax policies to promote technological innovation. On the basis of a brief assessment of China’s current tax policy incentives, the chapter suggests some adjustments in the tax regime to encourage innovation. These include reforming the existing main tax categories and enhancing the catalyst role of tax policies in technology innovation. Greater efforts need to be made to transform the value added tax system from production based to consumption based and to allow technology firms to deduct fixed assets from taxable revenues. The existing preferential tax policies for innovation also need to be streamlined and improved to better promote fair competition, encourage the development of new and high-tech enterprises, strengthen the development of S&T talents, and spur the commercialization of S&T results.

Generally speaking, innovation covers a large spectrum of social, economic, scientific and technological aspects. The eight chapters included in this book reflect the different viewpoints on linkages between innovation and government policies and on the challenges that probably are commonly faced by economies in the APEC region, particularly for developing economies. Although this book is divided into three parts, it became clear in preparing the book that there is no single best way to sequence the chapters. The volume editors decided to follow a sequence that best illustrates the relationship between innovation and development, starting with the key conceptions about innovation, competitiveness, and development, followed by ideas on innovation and financial development, and finally consideration of the relevant government policies in China.

Two additional considerations are worthy of note. First, the reader will find some overlap among chapters. This reflects the authors’ findings from different approaches to and perspectives on the same or similar topics. Second, this book should be viewed as a work in progress, and the opinions expressed are entirely those of the authors and do not necessarily represent the views of the World Bank or the AFDC.