

## Preface

I have co-edited this report at the invitation of Mariko Watanabe, a visiting scholar at Peking University and Institute of Developing Economies. The report is comprised of two parts about pharmaceutical industry in China. Part I covers the basic condition and institution of the pharmaceutical market, in particular the demand and institutions related to price setting and patents. Part II discusses the strategies of pharmaceutical firms: their price setting policy and their innovation strategy and subsequent management. The pharmaceutical industry is an important sector for both the country's economic development and its national health - a sector where competition is very acute and intervention by the government is deep, and a lot of problems remain to be solved.

I have known Ms. Watanabe for many years, and she is very capable and works very diligently. Professor Shi Luwen and Instructor Chen Jing, from the Health Science Center of Peking University, and Ms. Cao Jinyan, Vice head of the Intellectual Property Development Center at the State Intellectual Property Office, also supported this research project. In order to meet their request, I agreed to co-edit this report and also contributed one chapter co-authored with Dr. Xiang Anbo.

This report consists of 5 chapters: Chapter 1, "Demand and Institutions," introduces the size and structural features of pharmaceutical demand, such as the medical insurance system and its drug catalogues, in China and how it differs from those abroad. The author also introduces how a structural problem such as "Feeding Hospitals with Drugs" affects the demand for drugs in China. Chapter 2, "Price Setting Institutions," presents the drug pricing policy by introducing the drug price management policy of the Chinese government, and discusses the auctions and central tendering system's impacts on the price of drugs. Chapter 3, "Patents, New Drug Protection and the Pharmaceutical Industry in China," states the historical development of the patent protection system in China and its impact on the pharmaceutical industry. The authors state that patent protection in China is improving gradually and acts as a very important factor in the development of the industry, while at the same time we need to be careful to balance the level of patent protection with China's current stage of development. Chapter 4, "Pricing Strategy of Firms," discusses how firms set their prices under the current institutions: first, it formally analyzes the impact of the "Feeding Hospitals with

Drugs” type demand on the price setting strategy, and cross-checks predictions against the actual data for a class of anti- high-cholesterol drug Statins in China, before presenting recommendations for what kind of institutions could induce better pricing by firms and hospitals. Chapter 5, “Innovation: Motivation and Incentive” introduces how the Chinese pharmaceutical industry conducts research, development, and innovation; it points out that although innovation systems in Chinese pharmaceuticals are not at such an “innovative” stage as a whole, we cannot neglect the fact that a few well-managed firms have already made much of innovation and have built up their own innovation systems. Government policies on promoting innovation are also starting to have an effect.

We warmly welcome the reader’s criticism of whether these 5 chapters describe the current situation of the industry well, and whether its view points and claims are appropriate. At this point, I would like to note two points.

First, we must recognize that special conditions in China’s development and reform have substantially affected the Chinese pharmaceutical industry. Since the 1970s, China has been challenged by two different problems: the development of, and transition from, the market. Due to a lack of experience and shortages in fiscal capacity until the 1990s (fiscal capacity was very weak due to the Cultural Revolution in the earlier period, and the fiscal contracting mechanism in later times), “activating by decentralization” has been a key remedy for reforms in various fields for a long time. “Activating by decentralization” implies the introduction of market competition when the weak fiscal capability of the central government cannot afford the necessary cost of reform, and so the appropriate medical insurance and drug management policies for the market economy had not yet been built. All these problems led to the phenomenon referred to as “Feeding Hospitals with Drugs.” This report notes that the phenomenon induced huge problems in both the drug market and demand. Fortunately, once society had fully perceived the problem, fiscal capacity also improved. Currently, society has come to a consensus to resolve this problem by increasing input from the government while simultaneously utilizing the market mechanisms.

Secondly, we must recognize that the institutional environment affects the innovation strategy of Chinese pharmaceutical firms. Some argue that the innovation capacity of Chinese pharmaceuticals is far behind their counterparts in India. There are several opinions and controversies surrounding how to view this problem. However, we clearly perceive that the difference in China’s institutional

setting has affected the innovation ability of the Chinese pharmaceutical industry. For example, China recognized product patents in 1993, when Chinese firms had sufficient research and development capacity. On the contrary, India did not endorse product patents for drugs until 2005. This difference in patent protection was advantageous for Indian counterparts. Furthermore, due to the underdeveloped capital market and local protectionism among other, Chinese pharmaceuticals found it difficult to finance research and development, not to mention merging research or innovation companies. The traditional system and its path dependency substantially affected Chinese firms capacity for innovation. Currently, a change is taking place in Chinese pharmaceuticals' capacity for innovation: there are a group of firms with a basic capacity for research and development; and the rich numbers of scientist in research institutions, cooperating with firms and academics, are advantageous and complement the Chinese pharmaceuticals less developed capacity for innovation. Thus Governments are eagerly promoting basic research and new drug development.

By bearing the above two points in mind, we can more deeply understand the market, the institutions, and the other problems that the Chinese pharmaceutical industry is faced with, along with their basic conditions. This represents the preface for this report.

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