

## Introduction and Summary

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### 1. Reform in Medical Care System in China

At the National People's Congress in 2006, Spring, Prime Wen Jiabao announced that the government will conquer a problem of "Expensive doctor's examination, and difficult to see doctor" that troubles the public general with high fees.

The state government commissioned 7 institutes, which increased to 8 later, to build up policy agenda on 7 subtopics on medical reform started in September 2006: Seven institutions were Development Research Center, Peking University, Fudan University, World Bank, WHO, Beijing Normal University and Beijing Renmin University. 6 out of them claim that the reform needs to introduce competition by extending coverage of medical health insurance. Though no agenda were disclosed to the public, some media reported that direction of reform is being concluded into two principles: **(1) To extend coverage of medical insurance. (2) To further introduce market mechanism.** According to the media report, 6 agenda out of 8 institutions proposed to induce competition by building up medical insurances who will be a direct payer of medical services( *21th Century Economic Report* 2007 July, 19) .

Though controversy is still going on, principles above are not finally authorized, these principles have following advantages for the pharmaceutical industry in China.

**(1) To extend coverage of medical insurance:** As we will see below, current medical insurance covers only less than half of the whole nation. Particularly, coverage of medical insurance in the rural area is extremely low, though the new rural cooperative medical insurance is spreading its coverage. To build up medical insurance that covers whole population will have a substantial impact on the market of medical service and pharmaceuticals: (1) the insurance itself has a redistributing function between the healthy and the sick as nobody can expect when you got ill. The insurance should be compulsory, otherwise we cannot only expect for insurance function to work, but will induce "adverse selection problem." (2) As budget of medical insurance is limited to total insurance fee income, thus the insurance has strong incentive to reduce medical cost. This incentive is much stronger than payment-by-tax system, thus we can expect cost to be saved. Thus, we can expect to reform a notorious "Feeding Hospital by Drug (以药养医)" mechanism. (3) For the pharmaceutical industry, it implies that direct purchasers of drug are changed from the hospital to the insurance. Pricing principles of the insurance would drastically change, demand for drug will be changed.

**(2) To introduce market mechanism in deep.** Main issue of controversy on medical

reform has been whether to introduce market mechanism more or to strengthen the grip of government: Question also becomes whether to subsidize supply side or demand side. It seems that the former are getting dominant: to extend coverage of medical insurance is the one example. The other claim is to let private capital to run hospitals to induce competition. Currently, all hospitals are basically state owned, and all physicians and nurses are civil servants in China. This state-owned and-run hospital system presents a substantial supply shortage of medical services. If entry of private and foreign capital were liberalized in medical service industry, demand for drug will be diversified and increased. This will create a new market for drug manufacturers in China.

## **2. Feature of pharmaceutical industry**

Before considering case of China, take a look at what is the nature of pharmaceutical industry? Nambu[2006] summarizes the features as follows:

**(1) Intervention by the government is deep:** Except the United State, the industry of all over the world are heavily intervened by the government, e.g. price of products, profit ratio of firms etc.. In the most industry, pricing is the most important tool to represent firm's strategy; profit is a result of the strategy. However, in the pharmaceutical industry, firms are intervened into these key factors. Even in the United State, the government strictly monitors safety and quality at every stage of production, sales and clinical trials. Philosophy behind the United States regulation is that strict monitoring and control at stages before sales will keeps the cost of safety control at lowest, because in case accident happens after sales, cost to recover safety will become huge. Furthermore, free market of the products leads to cheapest and the most efficient price for the consumer, though equivalent among nation could be ignored, as only richer person can enjoy good enough medical care.

**(2) Special nature of demand:** Demand for drug have several special features: first, physician, who is an agent of patient, consumer of drug, will decide to buy which drug and how much. Usually, information asymmetry on drug knowledge is huge between physicians and patients, thus agency problem between the two is a serious and important issue. Second, medical insurance will pay for patient. There exist another agency problem between insurance, physician and patient. Thus it is a very prevalent phenomena that physician will prescribe excessively high price drug to increase their revenue, not for reduce burden of patient, when the medical system is designed poorly to resolve these agency problems. In developing economies, where coverage of social security system is limited, physician depends on direct revenue from patient, this agency problem become more acute.

**(3) Supply by private firms:** Though government intervention is so deep as we saw, supplier, pharmaceutical firms are private owned firms in most economies. It is rare that state owned enterprises supply drugs in the market economy, which is contrasting to the utility industries such as electricity or water supplies, that are often supplied by public owned firms in the market economy. Nature of the industry, variety of products is wide, product selection is very quick, requires supplier a quick and flexible supply of products. Monopolized SOEs, presumably speaking, cannot meet these demand (Nambu[2006:p2]).

Chinese pharmaceutical industry shares above feature for some aspects, but also has unique aspects. This report will see what is the true feature of China's pharmaceutical firms. As above already mentioned, nature of demand for pharmaceuticals are subject to institutions such as health insurance and regulations such as price setting policy. We will take a look at characteristics of demand and institutions in Part I, and will see firm's behavior on pricing and innovation in Part II.

### **3. How to provide “Affordable, Safe, Sufficient and Sustainable” Drug in China?**

Since the Reform and Open Door Policy started in 1978, 30 years are passed. Target of policy and reform in China are moved from promoting efficiency by reforming industry to redistributing for equality recently. Medical care system reform invites social attentions, and its reform plan is currently discussed. Particularly, reform on hospital's management is focus of this discussion. These discussions will substantially affect pharmaceutical industry, as hospital and pharmaceutical industry is strongly inter-connected. Furthermore, as we will see later, unusual demand feature of drugs in China, “Feeding Hospitals with Drugs” type demand, we called here, generates several problems in the pharmaceutical industry. The current controversies over the medical reform mainly argue on how to resolve this unusual type of demand.

This research focuses on pharmaceutical industry. Our target is to explore the way to achieve “affordable, safe, sufficient and sustainable” supply system of pharmaceuticals. These targets are interconnected and have trade offs between themselves: Reform in medical care system will substantially change nature of demand of drugs: for example, share the health insurance will have in drug market, or their pricing mechanism. On the other hand, government requires the industry to upgrade their innovation capacity.

*Affordable* price for the general public is necessary. However, if price of drug is set too low, they cannot afford to invest in innovation, or research and development that facilitate *sufficient variety* and good quality of drugs. On the same time, too low price of

drug will induce a problem in safety, as a certain amount of cost is necessary to secure a certain quality or safety of drug. As we will see later, price reduction by the government, not by price declines through market competition, will induce a halt of production of necessary, good and cheap drugs. Price setting mechanisms seriously affect *sustainability* and *sufficiency in volume* of pharmaceutical supply.

#### **4. Summary of the report**

Chapter 1 shows demand nature and institutions, an environment of the pharmaceuticals in China. Here, we can see that (1) fiscal expenditure among medical expenditure is small in China, compared with other agents, individuals and social agents, as well as the other country. (2) Hospital deeply relies on the drug price margins. This creates “Feeding Hospitals with Drug” phenomena in China.

Chapter 2 refers to the current price setting mechanisms in China. The current price setting mechanism in operation has following principles: 1) the State Development and Reform Committee (SDRC) has set a price cap on the retail price of drugs in the medical drug catalogues. 2) The price margin rule between forms of drug. The SDRC also set a price ratio among forms of drug, using a normal tablet as a reference. 3) However, patented drugs are free to have the maximum retail price set, being independent of government price regulations. Furthermore, 4) central tendering system via auction is employed at provincial level on the supply. Here, in China, duplicated several price controlling systems are seen.

Chapter 3 sees institutions related to patent protection, new drug protection and innovation promoting policy. Patent protection systems in China are now consistent with international customs. As for patent, here we can see precise features on drug patent in China. Here we can see following types of patent are dominant (1) chemical drug, (2) ant-tumor, and cardiovascular drug, (3) applicant is firm and innovator is research institutes/universities, (4) in natural products field, Chinese agents are dominant. Until 2002, new drug protection system was operated independent to patent, which has substantially affected patent protection. The government also provides Chinese pharmaceuticals with various innovation promoting policy.

Chapter 4 first confirms by data that “Feeding Hospitals with Drugs” really appears in China. Then, analyzed this demand nature will generate (1) higher supply price at factory, and (2) smaller amount of drug supply in the society, and (3) high retail price of

drugs are due to lack of competition in hospitals, thus, increased competition among suppliers by auctions etc. cannot reduce retail price, not resolve “High drug price problem.” Furthermore, aggressive reduction of official price cap will reduce supply of drugs. If the medical reform can normalize “Feeding Hospital with Drugs” type demand, (1) drug supply will increase, (2) firms can secure a certain profit, but could be smaller than current situation. In order to achieve “Cheap retail drug price,” introduction of competition among hospitals must be considered. This is out of scope of this report.

Chapter 5 refers to current innovation situation and systems in China. This chapter introduced that innovation capacity of current Chinese pharmaceuticals are limited. However, some firms already turned to chase improvement of innovation capacity. In along with medical reforms, drug price will decrease in the long run, and focus of competition will move on to quality and product differentiation. Thus, firms must take policy to improve innovation capacity to survive.