

of these Chinese industries in the following five years. Besides, we will analyze the future growth patterns of the Chinese industry and the obstacles it will still face.

4.2 Analysis of external drivers of future growth of Chinese API and contract manufacturing industries

Although the series of quality incidents associated with the Chinese-made products have created a negative impression to foreign companies when sourcing APIs in China, the cheap raw materials and still low cost labor in China still attract many of them from around the world. In fact, many sourcing companies play balance between price and quality (in addition to the supply reliability) when selecting service providers. Presently, Chinese-made APIs and pharma intermediates still possess the following features:

- Lowest cost;
- Most competitive in price/quality ratio;
- Most abundance;
- Most complete in terms of the types of products;
- Most flexible for order.

The low price, coupled with the rising demand for all types of API products (and their intermediates) will further drive the growth of this Chinese industry in the future.

4.2.1 Analysis of the demand for APIs of marketed drugs

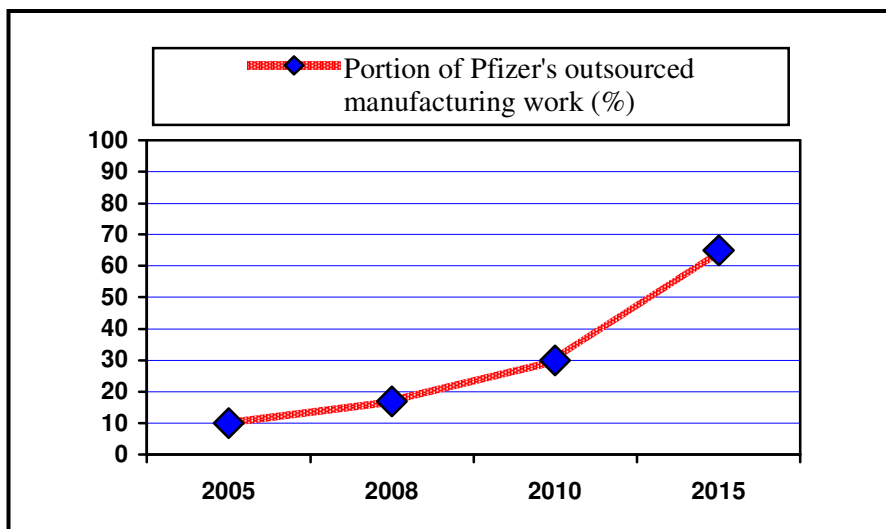
As global drug companies are forced to conduct cost reduction in every aspect of their operation under the extreme financial situation, the contract manufacturing demands for APIs of the marketed drugs (including generics) are expected to become stronger in the near future. A more severe situation could be felt in the US at least in the following three years or so as the environment will become more and more unfriendly to pharma companies as the Obama Administration favors price reduction for innovative drugs, allows for more generic drugs and favors importing of cheap drugs from other countries. The US government has reached an agreement with the American Pharmaceutical Association to reduce sales profits of \$80 B industry-wide over the following ten years. These government actions will squeeze the market positions and profit margins of drug products in the US market of these pharma companies. The consequences of these actions are that more pharma companies will outsource their labor-intensive and costly manufacturing work to the low cost regions in particular China in order to keep their operation cost low and still profitable.

It has been well recognized that the drug manufacturing industry in particular on large scale is a labor intensive industry. It is cumbersome for drug companies to operate all manufacturing tasks in house. For example, in general, drug manufacturing cost accounts for about 25% in a drug company's total operation cost, of which about 50% is

the labor cost. As such, it has been well accepted that outsourcing this type of work is more economical than running them in house. Consequently, among all sectors of the pharma outsourcing industry, the manufacturing outsourcing was started earliest and has been practiced by all drug companies for couple of decades. The current trend has been that more and more manufacturing work in almost every drug company is being outsourced.

For example, in 2005 Pfizer outsourced only about 10% of its manufacturing work (mostly pharma intermediates). But, by the end of 2008, this percentage increased to 17% (The growth rate is about 20% a year!). The portion of the outsourced APIs in the total outsourcing percentage has also increased accordingly. Pfizer has scheduled to close 43 more manufacturing facilities (about 48% out of its current total 93 manufacturing sites worldwide. Some of them have actually been closed now) and currently aggressively increases its manufacturing outsourcing (aiming to reach 30% by the end of 2010; see Figure 19 for the growth trend of Pfizer's manufacturing outsourcing). It is expected that a big portion of Pfizer's API products will be sourced from or manufactured in China. Pfizer is currently aggressively expanding its presence in China including expanding its China manufacturing capacity and marketing more drug products in the country. Goldman Sachs recently forecasted that by 2012 Pfizer's annual revenue made from the Chinese market will reach \$3 B, representing the annual growth rate of more than 50%. Based on its current manufacturing capacity in China, Pfizer either needs to build more manufacturing facilities in the country, or source more raw materials in China and then use its current facility to make dosage form medicines, or license cheap generic drugs elsewhere (such as India) and market them in China.

Figure 19
Growth trend of Pfizer's manufacturing outsourcing¹



References and notes:

¹ JZMed predicted that the portion of Pfizer's outsourced manufacturing work will reach close to 65% by 2015.