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<IPO underpricing of pharmaceutical companies in China

between 2010 and 2015>

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Abstract

The extremely high A-share Initial public offerings (IPOs) underpricing in China's primary market provides us with a very interesting area of empirical research. This study focuses on the pharmaceutical industry which is a knowledge-based, technology-intensive industry and has become one of the leading industries in China.

Based on regression analysis of 66 pharmaceutical A-shares companies that went public through IPOs at both Shanghai and Shenzhen Stock Exchanges in China during 2010–2015, we find that 89.4% of pharmaceutical firms were undervalued. This study also finds that 1) IPO underpricing is negatively related to the firm size (asset) and positively related to IPO volume; 2) issuing time and underwriter reputation have no impact on IPO underpricing.

The paper further discuss and analyze the potential and specific factors that may have influence on IPO underpricing due to the pharmacy industry's particularity, besides these factors have been lacking in the IPO literature.

Key words: Initial public offerings, underpricing, pharmaceutical companies

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Chapter 1 Introduction

1.0 Chapter Overview

Chapter one begins the introduction on initial public offering (IPO) underpricing and the background of pharmaceuticals industry in China which are the foundation of this study. In the subsequent sections, this paper explains the reason for doing this study, as well as research questions, research objectives, scope of this research, significance and limitations of research, and lastly, it introduces the structure of this study.

1.1 Research Background

1.1.1 IPO and IPO Process

When small companies want to finance new projects, expand operations, or just to start up their business, they often use an Initial Public Offering (IPO) as a way to generate the capital needed to expand (Chan, Wang and Wei, 2004). IPO refers to the phenomenon that shows the first day closing price by a certain firm to the public (Aggarwal and Rivoli, 1990). Through this process, a private company transforms into a publicly traded enterprise.

In different nations, IPOs are priced by distinct mechanisms and different IPO pricing mechanisms have different efficiency levels of underpricing. Yong (2016) stated that the fixed price or auction price mechanism which are commonly adopted before 1990 resulting in higher probability of mispricing as both of them only have single price point. There are mainly two kinds of auction mechanisms based on the price paid by the investors who participate in the IPO process through auction 1) Uniform price auction and 2) Pay as bid auction or discriminatory auction. However, according to Hsieh (2012), book building was considered as the most effective method since 1990 compared to the previous two price mechanism, because it helps investors submit their bids in the subscribed price range thus reduces the degree of information asymmetry.

Moreover, prospective investors evaluate information disclosed by the issuer and underwriter about the IPOs, as well as some specific attributes, and then have a expectation regarding its offer price. The price perception of investor determines the success factor of IPO. The process of IPO is presented briefly below.

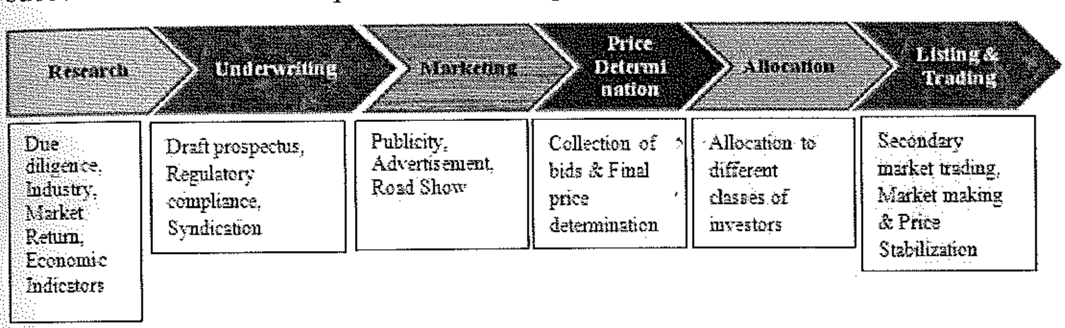

Figure 1.1 Steps involved in the process of IPO

Source: Katti and Phani, 2016

After a firm decides to go to public, the firm will choose an underwriter to carry out the process of IPO. According to Michaely and Shaw (1994). The first step is research by the underwriter to evaluate macroeconomic indicators such as GDP growth, savings and investment, IPO cycles, impact of other IPO reaching market, as well as the industry specific information. The second step is underwriting which includes the preparation of draft prospectus and ask for approval from the exchange to approve the IPO is listed and traded. The data collected from the first step plays an important role in preparing the draft prospectus. The next step is marketing and publicizing of an issue to increase the awareness of investors about the issue. To attract investors, issuers make an effort in advertising and media coverage. Price determination involves recording quantity demanded and the price received from the investors and then tracking the deal in case the bids are revised. After determining price, allocation of shares to investors and listing of securities on the exchange are the last two steps.

1.1.2 IPO Underpricing

Pricing goods and services is complex due to the different perceived values from the supplier and consumer, this may result to underpricing of goods or service. The above has been found in case of IPO that new equity issues by a firm. This phenomenon has captured many economists' and specialists' interest to investigate the underlying reasons. When issuing firms cannot accurately evaluate an IPO's intrinsic value, they generally take into account other IPOs in the same industry to determine their IPO offer price (Chang, 2011). According to Brealey and Myers (2002), the gap between the issue price and the listing price of the IPO is called initial return or underpricing that noted as one of the 10 puzzles in financial research.

In other words, IPO underpricing is the tendency to price stock in a company slightly lower than its market value. Beatty and Ritter (1986) state that there is a relationship between uncertainty of IPO and the degree of underpricing; if the higher the uncertainty, the higher the under-pricing will be as it needs higher cost to get the information. According to Loughran et al (1994), for emerging firms, IPO underpricing is a challenge to market efficiency as it may hurt them raise capital for expansion. Besides both the issuing firm and its underwriter prefer to IPO underpricing that below the mean of the probability distribution of initial market price (Choie, 2016). In addition, since China is experiencing the highest underpricing in the world in recent years, its IPO underpricing has drawn increasing attention (Guo & Brooks, 2008).

1.1.3 China's Stock Market

Compared to the U.S. which has more than 200 years of history, China's stock exchange market is very young. The Chinese government plays a dominant role in IPO processes in 1980s and the majority of shares of IPO firms are not available to the public because they are owned by the state or other legal entities and . To restructure the inefficient state-owned enterprises (SOEs), China began to restore the share capital system since the beginning of the 1990s. The Chinese government set up two stock exchanges, one is Shanghai Stock Exchange (SSE) which was established on 26th November 1990, another one is Shenzhen Stock Exchange (SZSE) that founded on 1st December 1990 (Lin & Chen, 2005).

The shares of Chinese companies are divided into tradable shares, state-owned shares, and legal-entity-owned share. Both state-owned shares and legal-entity shares can not be free traded in the second stock market. State-owned shares are only for the central or local governments and legal-entity shares are those held by domestic entities or financial institutions (many of them are SOEs as well).

Tradable shares can be classified as A-, B-, H-, S-, N-, and L-shares. Different types of tradable shares are for different investors. The companies which issue A shares, B shares and H shares incorporated in mainland China. A shares refers to the mainland China-based companies which are traded in the Shanghai Stock Exchange and the Shenzhen Stock Exchange and settled in RMB. B shares also refers to the mainland China-based companies and traded on the two mainland Chinese stock exchanges but traded by foreign investors and domestic investors with foreign currency accounts. An firm can issue both A-shares and B-shares. H shares are permitted to be traded by domestic and foreign investors alike on the Hong Kong Stock Exchange and the shares of companies incorporated in mainland China. This study will examine and discuss the underpricing of A-share IPOs in China.

To achieve "the Chinese Dream", Xi Jinping has preached economic reform through various ways, including deepening China's financial markets and giving stock markets a greater role in financing corporate investment since 2012 (Nile.B, 2012). And many previous researchers stated that generally, high economic growth is related to the high return in the stock market, thus to say, it could be a better choice to invest in the stock market of China (Chang, et al., 2008). Moreover, Shanghai Composite Index gets closer to the Dow-Jones Index and FTSE100 Index (Chan, et al., 2004), it indicates that the Chinese stock market is trending toward integration and globalization. As China moves towards a more transparent and less mercantile position in terms of its international dealings, China's stock market has a growing influence in world stock markets.

1.1.4 China's Pharmaceuticals Industry

According to Okuyama et, al (2015), the role of pharmaceutical companies previously is to develop the drugs that society really needs, nowadays, the primary objective of pharmaceutical drug companies is to maximise their profits. China has over 1.3 billion people that comprises 20% of the world's population, with China's increasing urbanization, expanding personal income, aging population, health education, lifestyle diseases, initiatives for health-care infrastructure improvement and government investments, the pharmaceutical industry has become one of the leading industries in China (Cockburn, 2004) and it is the world's second largest pharmaceutical market after the US.

The economic reforms begun under Deng Xiaoping in the late 1970s. China' s economic reform has also brought a good opportunity for pharmaceutical industry to develop in an impressive way. The number of pharmaceutical companies increased almost tenfold, from 680 to 6,357 from 1980 to 1999. By the 1990s, China had built a relatively robust pharmaceutical sector. China's drug manufacturing firms now number more than 5,000, and most are small producers of generic drugs. Meanwhile, at the urging of the state, major Chinese pharmaceutical firms began setting up subsidiaries and local distribution channels overseas, which show the industry is playing an active role in China' s health-related development assistance to other countries (Wang, Gusmano and Cao, 2011).