



Influences of Different Underwriting

Mechanisms on Offering Prices and the Case of China

Fangliang Huang

School of Finance, Shandong University of Finance, Jinan 250014, China

Tel: 86-531-6685-3897 E-mail: huangfangliang@fudan.edu.cn

Zuoling Nie

School of Finance, Shandong University of Finance, Jinan 250014, China

Tel: 86-134-0531-5089 E-mail: zuolingnie@hotmail.com

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Abstract

There seem to be little discussions on the influences of different underwriting mechanisms on offering prices. Under different underwriting mechanisms, the issuer, the investment bank and the investor will consider the offering prices based on his own benefit. As a result, the offering price is affected by different underwriting mechanisms. In China, most of the stock IPO takes the form of stand-by underwriting. Because of the huge demand on the new share issue from Chinese investors, the investment bank almost has not unsold stocks to underwrite. Therefore, there is no big difference in the risk that the investment bank faces between the firm commitment underwriting and best-effort underwriting. As a result, when the Chinese investment bank is allowed to participate in the procedure of pricing offering price, the pricing behavior of the investment bank has no big difference in the two risk- similar mechanisms. Considering different advantage and suitability of different mechanisms, China needs to change the single underwriting mechanism situation and encourage the practice of the firm commitment underwriting mechanism.

Keywords: Securities, Underwriting mechanism, Offering price

1. Underwriting Mechanisms

Strictly speaking, underwriting means firm commitment underwriting, but it is generally used as both best-effort underwriting and firm commitment underwriting. Here, we indicate the underwriting as general meaning, including best-effort underwriting and firm commitment underwriting. Securities underwriting is the most original and core business for the investment bank, it is also one of the basic characteristics that the investment bank distinguishes itself from commercial bank. Internationally most of IPO has the participation of the investment bank. In some extreme situation, the issuer will organize the IPO by himself and directly sell the stocks to the investors without the participation of the investment bank.

1.1 The Best-effort Mechanism

Generally speaking, a best-effort agreement is an arrangement whereby investment banks agree to do their best to sell an issue to the public, because investment banks are acting as agents, they avoid the risk associated with underwriting because they do not buy the securities and can return the remains to the issuer.

Under the best-effort underwriting mechanism, there is no underwriting group or selling group because the new share issue is not underwritten. Therefore, strictly speaking, the investment bank should be called commission agent, although it is usually called underwriter.

In the best-effort underwriting mechanism of America, the issuer makes agreement with investment bank, in which they stipulated the offering price and the maximum and minimum amounts of the new share issue. During the selling period, the investment bank tries his best to sell the stocks to the investors. If the amount of the sold stocks is lower than the minimum point in a specified period (usually 90 days), then the IPO will be canceled, and all the funds that have been collected will be transferred from the account of the third party who acts as the trustee to the investors. The best-effort underwriting mechanism is usually adopted by high-risk small scale companies, while the issuer prefers to choose the firm commitment underwriting mechanism when the amount of capital raised exceeds US \$10 million.

1.2 The Firm Commitment Mechanism

Firm commitment underwriting mechanism means that the investment bank will buy the new securities according to the agreement and resell the securities to the public at a markup, bearing all of the expenses associated with the sale; Or stand-by underwriting mechanism, it means at the end of the underwriting period, the investment bank purchases all the unsold securities by himself.

Under the firm commitment underwriting mechanism, the issuer can get the guaranteed funds in the certain period, and transfer all or most market risk to the investment bank. The issuer usually sold all the new share issues to the underwriting group which has one or several leading underwriters.

Firm commitment underwriting mechanism is a widely used issuing mechanism in the developed market. In America, when the issuing company signs the agreement with the investment bank, the red-herring prospectus will be revealed to the public, in which the range of the offering price is given. When the issuing company and the investment bank accomplished the marketing and got the purchasing willing from the investors, the offering price will be finally confirmed, at the same time, the final prospectus is revealed to the public. The issue of the securities started officially when the SEC ratified the issuance. The investment bank needs to sell all the securities to the investors at price less than the predetermined offering price.

In some countries or areas, the investment banks (correctly speaking, the leading underwriters) can decide whether to make market when he takes firm commitment underwriting. The behavior of market making is an accepted legal manipulating marking price behavior by some supervising institution. (Note 1) In the large-amount issuance situation, the underwriter takes the responsibility to stabilize the market price to prevent the market price from dropping under the offering price on the first day of the stock listing in the secondary market. The market maker mechanism is well applied in the NASDAQ market. Through the market making, the interest of the underwriter is further connected with the invest value of the issuer, which is beneficial to the after-market stable performance of IPO and can shorten the over-reaction period and the span of regression of IPO price discovering process as possible as it could be. If the demand of the new share issue almost equals the supply or the former is stronger than latter on the listing day, the trade price will not drop under the offering price. As a result, the underwriter need not make market. If the trade price dropped under the offering price, the underwriter can purchase stocks from the secondary market to stabilize the price; if the price keeps dropping, the underwriter can decide whether to continue to act as the market maker.

Contrary to the dramatic drop of trade price, the trade price can also dramatically soar. At such situation, some underwriters can take over-allotment option measures to stabilize market, that is, the green shoes option clause in the underwriting agreement. According to the rule 2710 (C) (6) (B) (IX) of the National Association of Securities Dealers (NASD), the amount of the securities that the underwriter sold can go beyond the originally stipulated amount, but less than 15% of the overall amount of the securities of firm commitment underwriting.

In the stand-by underwriting mechanism, after the listing of the new securities, the trade price is automatically formed by the strength of market demand and supply, the underwriters seldom take market making or over-allotment option measures to stabilize the market.

The traditional underwriting mechanism in the U.K. is the stand-by underwriting mechanism. The “issuing house” published issuing announcement and accepted the subscription of investors representing the interests of issuer. The issuing house will stop subscribing when he gets enough amount of subscription and the securities will be allocated to the subscribers by the issuer. If the subscribing amount is over the issuing amount, the issuer will take different methods to allocate these securities to the subscribers. The investment bank usually does not make spread profit and not subscribe the securities at his own account; he acts as the broker to service the customer and only receives underwriting fees. The underwriter will purchase all the unsold securities if there are still some securities not being purchased by the investors in certain period. This mechanism is called “strict”, “old fashioned”, “stand-by” underwriting in America, and this mechanism is widely used in rights offerings at the present, such as “stockholder new shares warrants” or convertible bonds “convertible rights”, but it is seldom used in IPO.

2. A Comparison of different underwriting mechanisms

In the stand-by underwriting, the investment bank will purchase all the unsold securities only under the condition that there existed unsold securities. This kind of situation seldom happened in practice, so the investment bank faces lower risk than in the firm commitment underwriting but higher risk than in the best-effort underwriting. In the stand-by underwriting, the investment bank needs certain amount of funds to finance the possible purchases for the unsold stocks, so the capital cost of stand-by underwriting is higher than the best-effort underwriting because in this mechanism the investment bank does not need funds, while the cost is lower than the firm commitment underwriting because the investment bank needs large amount of funds. In the stand-by underwriting, the investment bank only takes underwriting fees, so the profit is lower than the firm commitment underwriting but higher than the best-effort underwriting.

To reduce the underwriting risk, the professional requirement for the investment in the firm commitment underwriting is highest among the three mechanisms. The investment bank needs strong marketing webs, the capability to control demand

from the investors, the capability to correctly price capital assets.

Under the best-effort underwriting mechanism, the investment bank only takes commission fees, and the profit usually has nothing to do with the abnormal profit that the investors get in the secondary market after the new share issue. Therefore, the investment bank pays little attention to the offering prices.

From the response of investors to different underwriting mechanisms, due to the asymmetric information in the IPO, Bower (1989) found that under the firm commitment underwriting mechanism, the underwriter acts as the role to guarantee the enterprise value for the investors, while under the best-effort underwriting mechanism, the investors will estimate the individual issuer's value at the average value because they can only get the information about the enterprise average value.

In the best-effort underwriting mechanism, the investment bank may propose the offering price from its own benefit due to the benefit conflict between him and the issuer, consequently, it is difficult for the issuer to judge whether the price proposition is in the benefit of him due to the lack of information about the demand. However, generally speaking, because the investment bank needs not to bear too much risk from sale, the motivation to make lower offering price is not strong. While the issuer hopes to make offering price as high as possible because he wants to collect funds as much as possible; at the same time, the issuer will also consider the risk from failing to sell all the securities, so the offering price can not be priced too high. The final offering price (P_{ob}) will stay between the lower offering price (P_{obmin}) that the issuer takes the issuing risk into consideration and the higher offering price (P_{obmax}) that the issuer hopes to collect more funds. That is,

$$P_{obmin} \leq P_{ob} \leq P_{obmax} \quad (2-1)$$

Under the firm commitment underwriting mechanism, the benefit targets of both investment bank and issuer have changed. The investment bank is motivated to price the offering price lower to reduce the selling risk. While the issuer hopes to get higher offering price to collect more funds because the selling risk that he faces is greatly reduced. Therefore, the offering price (P_{of}) in the firm commitment underwriting mechanism will stay between the price (P_{ofmin}) at which the investment bank could successfully issue the securities and the price (P_{ofmax}) that makes the issuer satisfied.

$$P_{ofmin} \leq P_{of} \leq P_{ofmax} \quad (2-2)$$

The upper limit of Inequality (2-1) and (2-2) is the same, it is the offering price at which the issuer hopes to collect more funds. That is

$$P_{obmax} = P_{ofmax} \quad (2-3)$$

But the lower limit of inequality (2-1) and (2-2) is different. Generally speaking, P_{obmin} is the lower limit of offering price when the issuer takes the issuing risk into consideration, while P_{ofmin} is the lower limit of offering price when the investment bank takes the issuing risk into consideration. The difference between these two prices is determined by the different risk judgment from the investment bank and the issuer, so they may be equal or unequal in the quantity.

In the practice, best-effort underwriting mechanism is widely adopted by some not famous issuers because it is difficult for them to find the underwriter to underwrite the securities. When the best-effort underwriting is used, the issuing risk is basically borne by the issuer himself. Of course, this kind of mechanism is also taken by some famous companies to issue new securities.

Besides the above mechanisms, some small companies even can take the Direct Public Offering (DPO) mechanism to directly sell the securities to the investors by internet, they will bypass the intermediary (investment bank) when the market condition can guarantee the price discovering process to function normally. In America, DPO needs to be registered in the securities supervising institution and this registration cost will be lower than that in SEC. Therefore, DPO is usually adopted by small companies to save cost. For example, the stocks of many consuming goods enterprises are mostly subscribed by their consumers when the enterprises take DPO to issue securities. The investors will be more cautious when they make investing decisions because there is on participation of the investment bank, which indicates that there is lack of prudent investigation and the evaluation to the stock from the professional institution as well as common risk bearer. As the internet is widely used, DPO has broken through the traditional time and space restrict. Under the condition of the perfect and efficient supervision, DPO will be paid more attention due to its merits: fast transferring information, simple process as well as lower cost.

3. IPO Underwriting Mechanisms Adopted in China

In the early stocks issuance stage of mainland China, the methods of the best-effort underwriting or self selling were widely adopted. The securities department of the bank sold the new securities as the agent when the best-effort method is used. The securities company was born at the end of 1980s, and the best-effort underwriting was basically taken by the securities company to issue securities at the end of 1980s and the beginning of 1990s.

The state council issued "Temporary Regulatory of Securities Issuance and Trade Administration" in April, 1993, which stipulated that IPOs should be underwritten by securities operating institutions, and the methods included firm commitment underwriting and best-effort underwriting. (1998) "Securities Law" (21th clause) further declared that the firm commitment

underwriting is that securities company purchases all the securities from the issuer at the agreement price or purchases all the unsold securities by himself at the end of the underwriting period. There is no obvious change in 2005 “Securities Law” (28th Clause). But in practice, except for several individual cases of firm commitment underwriting, most of IPO in China took stand-by underwriting methods. (Note 2) Table 1 shows the different IPO underwriting mechanisms that China has adopted since the issuance of stocks began in the mainland.

4. Institutional Analysis on IPO Underwriting Mechanisms of China

Chinese laws and rules have not special restrict on the underwriting mechanisms of investment banks, after all, Chinese capital market is in the early stage of construction, only several enterprises adopted best-effort underwriting mechanism, individually for firm commitment underwriting mechanism, most IPO took the stand-by underwriting mechanism. While in developed countries, such as America, firm commitment underwriting mechanism is widely used, what is the reason behind the phenomenon?

To understand the reason that the firm commitment underwriting mechanism is not widely used in China, we need to consider from the following aspects: the capital requirement to the investment bank, the borne underwriting risk, the related underwriting fees as well as the securities underwriting background of China.

The capital requirements and the underwriting risks for the investment bank are increasing progressively under these three kinds of mechanisms: best-effort underwriting, stand-by underwriting and the firm commitment underwriting.

Under the best-effort underwriting mechanism, the investment bank need not use its own capital only acting as the agent to sell the securities. If the subscriptions are not enough or failed, the loss for the investment bank is the reduction of the underwriting fees or nothing to receive, so the risk is quite small.

Under the firm commitment underwriting mechanism, the investment bank needs to purchase all the securities and then resells to the investors, so the capital requirement is very high for the investment bank. The investment bank is required to prepare enough funds for each IPO so that he could subscribe all the securities at predetermined price, which means that large amounts of capital are occupied, consequently, the loss of the interest cost and opportunity cost of the capital is caused. If the investment failed to sell all the securities, then the sale risk is borne by the investment bank. Of course, in practice, the underwriting risks and opportunity loss are quite small, because the investment bank usually sells majorities of the securities to the institutional investors or cooperators who have good reputation and have long-term cooperation relationship with the investment bank. The investment bank will receive underwriting spread or sales discount which comes from the difference between the proceeds an issuer receives and the price paid by the public except for the underwriting fees. The higher profit is attractive to the investment bank.

Comparison to the investment bank of developed country, the capital strength of the Chinese investment bank is much weaker, especially in the early developing stage of the equity market, the scale of Chinese securities underwriting institutions are quite small, therefore, the best-effort underwriting mechanism is in accord with the capital strength and the capability of bearing risk of the investment bank. With the development of the Chinese equity market, the capital strength and the capability to against the underwriting risk will be improved, finally the best-effort underwriting mechanism will be replaced by stand-by underwriting mechanism. The reason that the firm commitment underwriting becomes the top choice in developed countries is that the investment bank has quite strong capital strength and capability to against risks except for receiving huge profit.

The statistic results of IPO underwriting mechanism from Huang (2006) showed the average of the premium rate under the best-effort underwriting mechanism is much higher than that under the stand-by underwriting mechanism in general, but there is no obvious difference in the average premium rate between several IPO samples under the best-effort underwriting mechanism and large amount of IPO samples under the stand-by underwriting mechanism, furthermore, with the improvement of the Chinese market overall standard, the premium level in the later stage is reduced compared to the earlier level. The best-effort underwriting mechanism was widely adopted in the early stage and the stand-by underwriting mechanism was basically adopted in the later stage, therefore, the comparison of premium level between different underwriting mechanisms is reduced correspondingly.

The Chinese IPO market demand is much greater than the supply in the long term, in addition, the demand for the new issuance of the Chinese investors is very strong. As a result, actually the investment bank has no unsold securities to underwrite and the risk that the investment bank faces under the stand-by underwriting mechanism has no big difference compared with the best-effort underwriting mechanism. Therefore, when the Chinese investment bank is allowed to participate in the offering price-making, there is no big difference in the investment bank pricing behaviors under the two risk-similar underwriting mechanisms. From this viewpoint, the contribution of the stand-by underwriting mechanism to enhance price discovering efficiency in the primary equity market has not been developed very well.

5. The Optimization and Improvement of Underwriting Mechanisms

For the optimization and improvement of underwriting mechanisms, we think that the firm commitment underwriting mechanism should be encouraged to carry out, but it should not be limited to any one mechanism. In addition, to better connect

the benefits of the investment bank and the issuer, the mechanism is required to be innovated.

5.1 Encouragement to carry out the Firm Commitment Underwriting Mechanism

The research on the underwriting mechanism is very scarce both at home and abroad, the firm commitment underwriting mechanism is widely adopted in the developed market, and people paid little attention to this conventional question.

The stipulation of the Chinese law on the underwriting mechanism is very simple. The 2005 “Securities Law” (28) stipulates that “the issuers should sign the underwriting contract with the securities companies if the law or administration rules stipulate that the securities should be underwritten by securities company, the securities are these that the issuers offered to the unspecified investors. The securities underwriting takes the forms of best-effort underwriting or firm commitment underwriting.” The majority cases of China IPO all took the method of stand-by underwriting mechanism, it seems that it becomes a convention, so it is paid little attention.

While when we compared the firm commitment underwriting mechanisms at home and abroad, we find that there exists tiny difference between firm commitment underwriting and stand-by underwriting. Many researchers ignored this kind of difference of firm commitment underwriting mechanism between China and some developed countries when they focused on the registration mechanism and book-building mechanism. The direct reason that caused the difference is the difference of the underwriting institutions. The investment bank is required to purchase all the securities under firm commitment underwriting mechanism, therefore, the investment bank must have strong capital strength. At this point, the asset scale of Chinese underwriting institution has wide gap compared with the investment bank in developed market, this kind of underwriting strength gap induced that Chinese investment bank is ready to adopt the stand-by underwriting mechanism to reduce the underwriting risk.

Except for the capital strength requirement for the investment bank in firm commitment underwriting mechanism, the risk that the investment bank needs to bear is also very high in this mechanism, so the professional ability requirement for the investment bank is also quite high. To successfully sell all the securities, the investment bank must have stronger pricing ability and marketing ability. The book-building mechanism that is widely adopted in the developed market provides the investment bank opportunity to show his pricing ability and marketing ability, therefore, the combination of the book-building mechanism and the firm commitment underwriting mechanism becomes the optimal choice in the developed countries. At the present, China is carrying out IPO price inquiring mechanism. To further integrate the investment bank into the issuance process, it is reasonable to encourage the adoption of the firm commitment underwriting mechanism. Integrating the interest of the investment bank into IPO process is beneficial for investment bank to develop his professional advantages in the IPO price discovering process, or in other words, it is beneficial for Chinese investment bank to go into the professional orbit in accord with the international rules.

Because firm commitment underwriting mechanism requires higher capital scale and professional skills, and under international background of merging investment banking and commercial banking in the financial field, to enhance the firm commitment underwriting capability of the investment bank, China should allow the transformation from the prohibition of the crossing of different financial operations to the relaxation of the regulation, allowing the crossing activities in the bank industry, insurance industry and securities industry, and cultivate the competitive power of investment banks which have great capital scale, strong professional skills and high reputation. As a result, the scale of Chinese investment banks will be enhanced and the role of Chinese investment bank in the primary equity market will be highlighted and the overall market operation will function regularly.

5.2 The Choice of Different Underwriting Mechanisms According to the Issuing Circumstance

In specified IPO cases, the investment bank and the issuer are supposed to choose different underwriting mechanisms freely. Actually for the smaller scale IPO, the issuer can adopt best-effort underwriting or even DPO mechanism if he has certain issuing capability according to the international experience, and the price discovering process will be shorten correspondingly and the issuing cost for the issuer will be reduced. But according to “Securities Law” (2005) (28), the issuers should adopt best-effort mechanism or firm commitment underwriting mechanism when they sell securities to unspecified investors, which excludes the DPO mechanism. We think, this mechanism which can greatly save the issuing cost and need not the participation of the investment bank should be included in IPO mechanisms.

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Notes

Note 1. Of course, the underwriter cannot manipulate the price without any restriction. In America, the underwriter needs to provide detailed report to SEC when he makes market. In the trade of new issuing securities, the leading underwriter can

make market according to the SEC rules, other selling group members can purchase the new issuance only when the leading underwriter declared the selling group was dismissed. The purchased securities to stabilize the market cannot be sold out at higher price than the purchasing price. The loss induced from the dealing is allotted proportionally to the selling group members

Note 2. The statistical materials about the stock issuance cases that have adopted different underwriting mechanisms are very scarce. Through scanning website <http://www.goole.com/zh/CN> to look for the prospectus, issuing announcement, listing announcement one by one and inquiring some target companies by telephone, we confirmed that two companies: Zhong-shan Torch High & Tech. Industrial & Commercial Co. Ltd. (Stock code: 600872) and Dong-fang-dian-ji (Stock code: 600875) adopted the firm commitment underwriting mechanism in their IPOs. The stock listing announcement of Zhong-shan Torch High & Tech. Industrial & Commercial Co.Ltd (published in 1995) disclosed that: "The social public shares can not be issued publicly in 1994 due to the "three policies" that are issued by Securities Supervision Committee of China" in 30th, July 1994, Guangdong Guang-fa Securities Company underwrote 28 million shares of social public stocks at the price of RMB 8 per share in advance as the leading underwriter and transferred the fund to the company's bank account on 28th, October 1994. To diversify the shareholding, Guang-fa Securities resold all the 28 million shares to the public by adopting the combination of "Limit subscription, free appointment, lottery allotment, payment with lot" and "appointment on presentation of documents, payment all in advance, subscription with lot, refund without lot" on 8th, December 1994 and 19th, January 1995. The subscription amount reached 853.658 million shares in the compulsory period and the rate of lot is 3.28%". The listing announcement of Dong-fang-dian-ji (published in 1995) disclosed that: "The issuance of A shares adopted firm commitment underwriting mechanism, and the leading underwriter underwrote the shares by setting up underwriting group".

Table 1. Different Underwriting Mechanisms Adopted in China

Mechanism	Period	Major Characteristics
Self Selling	Before 1 st , January 1993	This was the mainly adopted method of securities issuance at the beginning of reform and open. "Temporary Regulatory of Securities Issuance and Trade Administration" and "Securities Law" have not been issued at that time. The issuers were usually the shareholding system reform experimental companies and they directly sold the securities to the investors.
Best-effort underwriting	Before 31 st , December 1993	This issuance mechanism is used in the early stage of China, and during this stage, "Temporary Regulatory of Securities Issuance and Trade Administration" and "Securities Law" have been issued but the state council has not decided to govern the financial industry and proposed separated industry administrating idea. The securities department of the bank sold the new securities as the agent, and the underwriters did not purchase the stocks and only collected commission according to the amount of the sold stocks.
Stand-by underwriting	After 11 th , April 1991	After Shanghai Securities Exchange and Shenzhen Securities Exchange were officially set up, most IPOs of China adopted this mechanism, that is, the underwriters purchased all the unsold stocks and they received underwriting fees according to the proportion of the collected funds.