A Review of Asia’s IPO Research

Yao-Min Chiang* Department of Finance, National Taiwan University
Vivian Tai Department of Finance, National Chi Nan University
Wanqin Zhang Department of Finance, National Taiwan University

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Abstract
Asian markets provide ideal experimental sample for IPO research. Market development and regulatory changes give academic researchers the chance to gain detail insights on IPO topics. The main objective of this paper is to survey the literature on Asian IPOs. We use Web of Science as a data source to collect related literature. We survey papers using Asian IPO samples to study classical IPO topics and discuss special IPO topics in Asian IPO markets. Finally, we provide suggestions for future research on this subject.

Keywords
Initial public offerings, Asia, Underpricing, Bookbuilding, Auction

* Corresponding Author: yaominchiang@ntu.edu.tw, Tel: +886-2-3366-1089
I. Introduction

The number of initial public offerings (IPOs) in the U.S. has been decreasing since the burst of the internet bubble in 2000 (Ritter, 2012). According to the statistics on Ritter’s website, the total number of U.S. IPOs during 1991–2000 was at a peak of 4,360. The number decreased sharply to 1,010 during 2001–2010 and to 1,248 during 2011–2020. Ritter argues that the situation is mainly attributable to the declining profitability of small firms, in addition to heavy-handed regulations such as Sarbanes–Oxley (SOX) and less analyst coverage of small companies. The year 2020 was a turning point. The stock market performed the fastest bear market in modern history, while the economy faced difficult challenges due to the pandemic. Consistent with the hot issue market, we see an abounding increase of U.S. IPOs in 2020.

IPO markets in Asia are active. Asian countries take efforts to develop IPO markets. For example, the Korea Exchange took several steps to attract firms to be listed. They established a second market, Korea New Exchange (KONEX), in 2013 to allow small and medium-sized enterprises to trade at exchanges, revised regulatory supervision of the overall IPO process, and attracted foreign companies’ inbound IPOs. China also implemented a series of reforms on the IPO process, the purpose of which is to improve issuance efficiency in pricing discovery and allocation to help stock market development. Every government may consider an efficient IPO process to be key to the growth of its capital market.

Why do private companies go public? Lowry, Michaely and Volkova (2017) argue that the need to raise money for investment is not the complete answer. Lee, Ning, Hsieh, and Lee (2020) study a Chinese IPO sample to confirm Lowry, Michaely, and Volkova’s (2017) prediction that the decision to go public is positively correlated with the market-to-book ratio of the corresponding industry. Dong, Zhang, and Xie (2020) use a Chinese sample to support Lowry, Michaely, and Volkova’s (2017) argument that
IPO firms take advantage of the hot issue market to adjust their capital structure. Asian IPO markets provide evidence to test the theories.

IPOs are always an interesting topic for authority, academia and industry. In this paper, we survey studies on Asian IPOs since 2010, reviewing evidence documented by published papers and discussing possible directions for future research.

1. Using SDC to Look for IPO Sample

We first use the Thomson Reuters new issues database (also known as SDC) as the main source for the IPO sample in Asian countries. We follow the procedure of Hanselaar, Stulz, and van Dijk (2019) and Chiang, Vismara, and Ritter (2020) to select IPO data from the SDC. We count IPO numbers of Asian countries and exchanges during the period of 2000–2019.1)

We select eight Asian markets that have more than 400 IPOs during 2010–2019 as our sample to discuss the IPO literature focusing on these markets. These eight markets are China, Hong Kong, India, Japan, Malaysia, Singapore, South Korea, and Taiwan. Table 1 and Figure 1 show the number of IPOs in these markets during 2010–2019.2)

2. Use Web of Science to Survey Papers

The purpose of this paper is to discuss academic research focusing on Asian IPOs. We rely on the electronic database Web of Science as our main source for collecting related papers. The keywords are “initial public offering”, “IPO” and “country name”.

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1) The screening steps are as follows: The data period is 2000–2019. Asian countries and exchanges are considered. Only common shares are included. Only IPOs with Primary shares issued are included. Financial institutions (SIC=49) and utility companies (SIC=6) are excluded. Only main tranches are included. Foreign companies are excluded. One exception to this rule in our sample is Hong Kong. There are many Chinese companies listed in the Hong Kong exchange markets. We use the SDC variable, "IPO flag", to exclude non-IPOs. We include types of securities of Capital Shares, Cl H Common Stk, Class A Ord Shs, Class A Shares, Class B Ord Shs, Class B Shares, Class C Shares, Class D Shares, Class G CommShr, Class H Ord Shs, Class L Shares, Class Share, Common Shares, Equity Shares, Ord/Common Shs., Ordinary Shares, Par Val Com Stk, Reg Non Val Com, and Reg Par Val Com.

2) In this study, we do not compare initial returns for each country. For matching SDC IPO data with Datastream return data, please refer to Cho and Kim (2019), and Chiang, Vismara, and Ritter (2020).
A Review of Asia’s IPO Research

Table 1: IPO number on different Asian markets during 2000–2020.

<table>
<thead>
<tr>
<th>Year</th>
<th>China</th>
<th>Hong Kong</th>
<th>India</th>
<th>Japan</th>
<th>Malaysia</th>
<th>Singapore</th>
<th>South Korea</th>
<th>Taiwan</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>114</td>
<td>64</td>
<td>118</td>
<td>184</td>
<td>31</td>
<td>64</td>
<td>29</td>
<td>45</td>
</tr>
<tr>
<td>2001</td>
<td>51</td>
<td>66</td>
<td>14</td>
<td>150</td>
<td>13</td>
<td>24</td>
<td>45</td>
<td>57</td>
</tr>
<tr>
<td>2002</td>
<td>61</td>
<td>72</td>
<td>2</td>
<td>111</td>
<td>34</td>
<td>21</td>
<td>90</td>
<td>58</td>
</tr>
<tr>
<td>2003</td>
<td>59</td>
<td>32</td>
<td>9</td>
<td>106</td>
<td>45</td>
<td>37</td>
<td>81</td>
<td>91</td>
</tr>
<tr>
<td>2004</td>
<td>88</td>
<td>30</td>
<td>22</td>
<td>145</td>
<td>65</td>
<td>46</td>
<td>61</td>
<td>93</td>
</tr>
<tr>
<td>2005</td>
<td>12</td>
<td>38</td>
<td>47</td>
<td>128</td>
<td>64</td>
<td>30</td>
<td>78</td>
<td>54</td>
</tr>
<tr>
<td>2006</td>
<td>67</td>
<td>24</td>
<td>65</td>
<td>147</td>
<td>30</td>
<td>16</td>
<td>71</td>
<td>43</td>
</tr>
<tr>
<td>2007</td>
<td>103</td>
<td>33</td>
<td>86</td>
<td>95</td>
<td>15</td>
<td>18</td>
<td>70</td>
<td>51</td>
</tr>
<tr>
<td>2008</td>
<td>69</td>
<td>10</td>
<td>32</td>
<td>39</td>
<td>15</td>
<td>15</td>
<td>44</td>
<td>37</td>
</tr>
<tr>
<td>2009</td>
<td>108</td>
<td>22</td>
<td>17</td>
<td>17</td>
<td>9</td>
<td>13</td>
<td>56</td>
<td>34</td>
</tr>
<tr>
<td>2010</td>
<td>328</td>
<td>20</td>
<td>52</td>
<td>19</td>
<td>25</td>
<td>19</td>
<td>66</td>
<td>40</td>
</tr>
<tr>
<td>2011</td>
<td>263</td>
<td>29</td>
<td>32</td>
<td>31</td>
<td>17</td>
<td>13</td>
<td>67</td>
<td>64</td>
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<tr>
<td>2012</td>
<td>139</td>
<td>14</td>
<td>18</td>
<td>42</td>
<td>8</td>
<td>14</td>
<td>27</td>
<td>51</td>
</tr>
<tr>
<td>2013</td>
<td>0</td>
<td>34</td>
<td>24</td>
<td>47</td>
<td>9</td>
<td>14</td>
<td>37</td>
<td>53</td>
</tr>
<tr>
<td>2014</td>
<td>120</td>
<td>30</td>
<td>42</td>
<td>66</td>
<td>11</td>
<td>19</td>
<td>41</td>
<td>40</td>
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<tr>
<td>2015</td>
<td>208</td>
<td>51</td>
<td>63</td>
<td>79</td>
<td>7</td>
<td>8</td>
<td>70</td>
<td>55</td>
</tr>
<tr>
<td>2016</td>
<td>240</td>
<td>56</td>
<td>86</td>
<td>75</td>
<td>10</td>
<td>11</td>
<td>58</td>
<td>49</td>
</tr>
<tr>
<td>2017</td>
<td>399</td>
<td>69</td>
<td>152</td>
<td>78</td>
<td>7</td>
<td>12</td>
<td>57</td>
<td>40</td>
</tr>
<tr>
<td>2018</td>
<td>89</td>
<td>82</td>
<td>152</td>
<td>80</td>
<td>18</td>
<td>8</td>
<td>69</td>
<td>50</td>
</tr>
<tr>
<td>2019</td>
<td>111</td>
<td>40</td>
<td>58</td>
<td>80</td>
<td>24</td>
<td>2</td>
<td>66</td>
<td>33</td>
</tr>
<tr>
<td>Total</td>
<td>2,629</td>
<td>816</td>
<td>1,091</td>
<td>1719</td>
<td>457</td>
<td>404</td>
<td>1,184</td>
<td>1,038</td>
</tr>
</tbody>
</table>

Figure 1: IPO number on different Asian markets during 2000–2019.
Initially, we obtained 548 papers. After excluding unrelated papers,\(^3\) duplicate papers, and those for which we could not download the entire paper, we have 281 articles used for this review.\(^4\)

There are two main streams in this paper. First, we discuss papers using Asian markets as a sample to study classical IPO topics, such as underpricing, long-run returns, and hot issue market. Second, we then survey papers investigating factors, variables, or reasons that can be used to explain IPO performance. Those factors include: underwriter reputation, underwriting fee, lock-up period, media coverage and attention, rent seeking, market share, venture capital back-up, corporate governance, earnings management, and text mining. Third, we survey papers discussing special topics in Asia, including underwriting design, regulatory changes, second markets and small and median enterprises, cross listing, dual-class shares, privatization, social network, pre-markets, special purpose acquisition companies, anchor investors, investor sentiment, bidding behavior, etc.

Building a literature review can be an arduous and stressful task. This is not the first paper and will not be the last to review the literature on Asian IPOs. We highlight important discoveries in the published articles but provide no critique. This study not only attempts to describe the tests of existing theories but also to gain an in–depth understanding of Asian IPO markets. This review paper may recognize past achievements in Asian IPO research on the one hand and spark future efforts on the other.

The remainder of this paper is organized as follows. In Section 2, we discuss evidence in Asia for classical IPO issues, such as underpricing, long-run returns, and hot issue market. Section 3 surveys papers investigating factors that can explain IPO performance. Section 4 describes the special features of Asian IPOs, such as underwriting design, regulation change, and second markets. Section 5 presents suggestions for future studies and conclusions.

\(^3\) The selected paper may not be an IPO paper or inconsistent with the country specified. For example, many papers under the keyword "Singapore" actually discuss Chinese IPOs.

\(^4\) This approach is not comprehensive and may miss important papers. We add more relevant papers from citations.
II. Classical IPO Issues

Three anomalies are associated with initial public offerings: underpricing, hot issue markets, and long-run underperformance. (Ritter, 1991). We start our discussion with these three topics and then on other issues one by one.

1. Underpricing

Cited from Ritter’s website, we can see the average initial returns in the U.S. are 17.2% (N=13,409, 1960–2020). Asian countries have higher average initial returns: China’s rate is 170.2% (N=4,177, 1990–2020); Hong Kong’s is 44.5% (N=2,042, 1980–2017); India’s is 85.2% (N=3,145, 1990–2017); Japan’s is 46.8% (N=3,756, 1970–2019); Korea’s is 55.2% (N=2,007, 1970–2019); Malaysia’s is 50.3% (N=571, 1980–2019); Singapore’s is 25.8% (N=687, 1973–2017); and Taiwan’s is 37.2% (N=1,915, 1980–2019).

Many papers also document the high initial returns in Asian markets. They also try to provide cross-sectional evidence to identify what variables may explain the underpricing phenomenon. For example, Banerjee, Dai, and Shrestha (2011) first show significant underpricing among 36 countries and report that a higher level of information asymmetry is associated with a higher level of IPO underpricing.5)

China has huge underpricing, and underpricing fluctuates over time. Li, Liu, Zhang, and Zhang (2020) argue that market conditions described based on market volatility may have an impact on how different factors affect underpricing. Given less volatile markets, offering size and subscription ratio are important factors deciding underpricing, while in more volatile markets, previous IPO performance and regulation constraints, such as the price to earnings ratio limit, are significant variables that affect underpricing. Instead of market conditions, Tian (2011) argues that the large underpricing in China is caused by government intervention with IPO pricing regulations and the control of...

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5) They identify two types of information asymmetry, namely, “insider–outsider” information asymmetry and “outsider–outsider” information asymmetry.
IPO share supplies. Government intervention may twist investor demand for IPO stocks.

Loughran and Ritter (2002) apply prospect theory to argue that issuers are more tolerant of excessive underpricing if they learn about an aftermarket valuation that is higher than expected. Wang, Su, Coakley, and Shen (2018) support that left-skewed IPOs have a mean first-day return of 65.61% compared with 56.55% for right-skewed IPOs. They calculate expected skewness of returns using all non-IPO stocks belonging to the same sector within the manufacturing industry.

India’s IPOs also show large underpricing. Handa and Singh (2017) report 22.90% underpricing in 404 India IPOs between 1 April 2001 and 31 March 2012 on Bombay Stock Exchange. They argue that a larger board size, representing more difficult coordination, results in larger underpricing. Hawaldar, Kumar, and Mallikarjunappa (2018) compare underpricing between fixed-price IPOs and bookbuilding IPOs. Bookbuilding IPOs are underpriced by a lesser magnitude than fixed-price offerings, 22.05% versus 53.92%, respectively. Manjunath, Raju, and Rehaman (2020) compare Indian IPOs’ short-run return with a market benchmark, NIFTY50, and find that India IPOs have significant underpricing. Ahmad-Zaluki and Badru (2020) argue that growth opportunities stated on IPO prospectuses can be used to predict higher aftermarket returns on India IPOs.

Some factors can serve as signals to reveal the quality of IPO firms. Albada, Yong, Abdul-Rahim, and Hassan (2019) examine how the lock-up period, underwriter reputation, auditor reputation, and board reputation can be used to predict Malaysia’s IPO performance. The lock-up period has no impact on underpricing. Underwriter reputation has no predictive power for underpricing. Auditor reputation and board reputation have a significant effect on underpricing. Badru and Ahmad-Zaluki (2018) also study Malaysia’s IPO performance. They investigate how company size, the pre-IPO Altman Z-score measure, and audit quality may affect IPO initial returns. It is interesting to see that they find that the Altman Z-score is significant in the lower and upper quantiles but not in the median quantile. Investors care about firms’ credit risk more
when they expect very low returns or very high returns, Che-Yahya, Abdul-Rahim, and Rashid (2018) argue that if old shares are used for IPO sales, the initial aftermarket return may be poor. They test this issue using a sample from Malaysia and find that investors are less optimistic in firms whose shares are offered from previously shares owned by existing shareholders.

Analysts’ research on issuing firms may mitigate the information problem. Jia, Ritter, Xie, and Zhang (2018) and Qian, Shao, and Liao (2021) both find that pre-IPO analyst coverage of Chinese IPOs has a positive impact on both offer prices and aftermarket returns. Zhu, Zhang, Li, and Chen (2015) find that a positive effect exists for pre-IPO analyst coverage on IPO performance since it can lower the effect of market-wide sentiment on IPO initial returns. Credit scores provided by agents can also predict IPO performance. Cai, McGuinness, and Zhang (2018) show that S&P Global Market Intelligence’s CreditModel (CM) scores can explain short- and long-run post-IPO performance in newly listed Chinese firms.

A typical definition of initial return is $IR = (P_1 - P_0)/P_0$, the percentage change of the closing price on the first trading day over the original offer price. However, in some periods, some countries impose price limits on daily price changes, which may affect the measure of initial returns. For example, in Taiwan, before 2005, a daily return limit in each direction was imposed on all IPO shares. Chiang, Qian, and Sherman (2010) define the first day when the stock price falls within the limit as the first nonhit day and calculate the initial return based on that day’s closing price.

In China, after January 12, 2014, the IPO prices are limited to a cap on issuing a P/E ratio of no more than 23. The new rule also establishes that the first-day closing price of an IPO cannot exceed 44% above the offer price. The normal 10% daily price limit applies to the following days. Instead of using the closing price on the first nonhit day, Huang, Huang, and Yu (2018) use the opening price on the first nonhit day to calculate the initial returns.\(^6\)

\(^6\) Huang, Huang, and Yu (2018) consider the opening price rather the closing price on the first nonhit day is more likely to
In addition to affecting underpricing measures, Wu, Wang, and Li (2018) consider that price limits may not be effective, providing a cooling period for investors to obtain information and re-estimate stock prices. They think there is a higher probability of the continuous up limit hit followed by another continuous limit hit. There may be an overreaction problem due to price limits.

Wu, Wang, and Li (2018) find that a price limit system will delay price movement. Ni and Huang (2015) argue that price limits may twist share prices for IPO firms. There is a significant price reversal in Taiwan following a hit to the limit and a significant failure of price discovery. In 2005, Taiwan lifted the price limit rule on IPO shares during the first five trading days. Liao, Lin, and Wang (2011) consider this deregulation to be the selling price.

<table>
<thead>
<tr>
<th>Paper</th>
<th>Markets</th>
<th>Sample Size</th>
<th>Period</th>
<th>Average Initial Return (1%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manjunath, Raju, and Rehaman (2020)</td>
<td>India</td>
<td>114</td>
<td>2014–2018</td>
<td>16~71 (annual)</td>
</tr>
</tbody>
</table>
to have a positive effect on price discovery. The level of aftermarket returns in two weeks decreased, the price adjustment speed increased, and the trading volume increased.

The trading mechanism may also affect the measure of initial returns. Zhang and Wang (2020a) find that in China, opening call auctions contribute 95% of the variability in initial returns, while intraday continuous auctions account for another 5%. They argue that only original purchasers in the offering process enjoy high initial returns.

2. Long-run Returns

Loughran and Ritter (1995), among others, find that IPOs significantly underperform relative to non-IPO firms for three and five years after listing. Asian markets also show that excess initial returns of IPOs are followed by underperformance in the long run.

Not all IPOs have poor long-run performance, and we would like to know what kind of companies may have good long-run performance. Nielsen, Rimmel, and Yosano (2015) argue that intellectual capital provides valuable information on the long-term value creation and financial sustainability of a company. They apply a disclosure index methodology to extract intellectual capital information from Japanese IPO prospectuses and find that this intellectual capital may account for a better long-run performance of IPO firms because the voluntary disclosure of intellectual capital reduces information asymmetry and builds investors’ confidence.

Other firm characteristics can also predict IPO long-run performance. Growth opportunities indicated in IPO prospectuses can provide information for investors to estimate the sustainability of the firm. Rahman and Che-Yahya (2019) assess the growth opportunities of 403 Malaysian firms from IPO prospectuses, especially focusing on the "use of proceeds" section. They conclude that more proceeds allocated to growth investment can lead to higher aftermarket returns.

Investors read individual IPO prospectuses to understand the firm. They also study the industrial background of the firm. India has significant IPO underperformance (Singla,
Singla argues that IPOs in the construction sector may have better long-run outcomes because the construction industry is a very important sector during the country’s periods of fast growth. The construction sector is currently the leading driver of the country’s economic development. Singla shows that the construction industry in India consists of over 400 listed firms and more than 130,000 registered firms. Construction IPOs in India have better EPS and larger size and therefore have better long-run IPO performance.

Furthermore, Chang, Lin, Tam, and Wong (2010) test other firm characteristics that may affect the long-run performance of Chinese IPOs. They investigate the aftermarket PE ratio, underwriter reputation, and board size. They find that higher aftermarket PEs lead to lower long-run returns due to investors’ overreaction. Underwriters with good reputations can signal the quality of IPO firms that reduce information asymmetry and improve IPO long-run performance. A large board size implies poor corporate governance and is associated with lower long-run returns. Que and Zhang (2019) find that pre-IPO growth can predict IPO long-run performance in China.

Although Chang, Lin, Tam, and Wong (2010) find that there is a positive relationship between underwriter reputation and IPO long-run returns, Su and Yu (2015) argues that there are heterogeneous effects between different regulatory regimes. Su and Yu states that the effect was stronger after China adopted a more market-oriented approval system in April 2001. After that, underwriters were responsible for reevaluating issuing firms and owing more pricing flexibility.

Su, Bangassa, and Brookfield (2011) find that reported long-run performance of Chinese IPOs is sensitive to the method of analysis. They tried different empirical methods and found significant long-run overperformance for Chinese IPOs using equal-weighted buy-and-hold abnormal returns. However, using cumulative or calendar-time abnormal returns cannot have the same finding.

In an emerging market such as India, sponsored IPOs may convey favorable information to investors about the future earnings and prospects of the firm. Deb and Banerjee (2020) find that private equity sponsored IPOs and venture capital sponsored IPOs have better long-run returns.
3. Hot Issue Markets

The "hot issue market" phenomenon in the U.S. has been documented in several studies (Ibbotson and Jaffe, 1975; Ritter, 1984; Ibbotson, Sindelar, and Ritter, 1988, 1994). Studies on Asian markets have shown that the volume of IPOs in Asian countries also shows periods of high investor demand (Ahn, Kim, and Song, 2007; Honjo, 2020). Hot issue market IPOs have a high market-to-book ratio and may remain so for a long period.

Honjo (2020) studies the IPO timing of more than 10,000 Japanese startup firms to show that firms are more likely to go public when market conditions are good, consistent with findings in hot and cold market studies. Honjo also finds that firms with more innovation, relying more on equity funding at an early stage, and in high-value industries are more likely to go public earlier.

In Korea, year of 2001 was considered a hot issue market period. Ahn, Kim, and Song (2007) show that underwriting fees are lower in hot issue market periods because underwriters have more business and are willing to charge lower fees.

India also has hot and cold issue markets. The literature shows that firms are more likely to go public when market conditions are good. Jain and Kanjilal (2017) use a two-state Markov regime-switching vector autoregressive model to test the causality relationship between IPO volume and average initial returns. In hot issue market periods, there is bidirectional causality between IPO volume and average returns. Hu and Wang (2013) also use the Markov switching model. They use a three-regime model to study Chinese stock markets. They think either hot or cold is not enough to describe the whole picture of the IPO market, so they add an interim period. They are then able to have more variables with predictable power to identify IPO market cycles.

In China, a large number of IPOs are concentrated in certain periods. Consistent with the literature, Jin, Guo, Zhou, and Li (2016) show that there will be more IPO volume when the secondary market is a bull market. Conversely, a high number of
IPOs implies market overvaluation. They also show that when there is more IPO financing, an expansion curse effect may occur to hurt stock prices in secondary markets. Rather than testing how hot issue market IPO prices move after trading has started, Dong, Zhang, and Xie (2020) discuss how hot issue market IPO firms may adjust their capital structure. They find that hot issue market IPO firms may issue more equity to replace debt and decrease their debt ratio more than non-hot issue market IPOs.

III. Reasons Explaining IPO Performance

There is plenty of research explaining the large underpricing. Most of the argument are based on asymmetric information. Several factors can be proxies of information asymmetry. However, as Ritter (2011) pointed out that information-based theories may be valid only for small underpricing. There are other reasons can be used to explain IPO performance. In this section, we survey papers investigating variables, factors, or reasons that can explain IPO performance.

1. Rent Seeking

Prior studies (e.g., Reuter, 2006; Nimalendran, Ritter, and Zhang, 2007; Ritter and Zhang, 2007; Goldstein, Irvine, and Puckett, 2011) have shown evidence that quid pro quo is common in bookbuilding. Chemmanur, Hu, and Huang (2010) use a Chinese sample to show institutional investors who have closer relationship with the underwriters may get more share allocation.

Chang, Chiang, Qian, and Ritter (2017) use a sample of Taiwan's IPOs with pre-market trading to document that pre-market prices are very informative about post-market prices and that the informativeness increases with a stock’s liquidity in the pre-market. However, the average IPO underpricing level remained high during 2005–2011, at 55%.
They show agency problems between underwriters and issuers may lead to excessive underpricing even when the valuation uncertainty is reduced due to pre-market trading.

Chiang, He, Liu, and Zou (2020) study whether dirty auction IPOs in China also show rent-seeking behavior. They take the advantage of rule change on share allocation from pro rata to lottery. They argue that *quid pro quo* should be valuable to a bidder in the lottery allocation scheme. They apply difference-in-difference strategy to identify that *quid pro quo* is facilitated by the underwriter’s leakage of privileged bidding information.

2. Reputation: Underwriters and Auditor

Can a firm’s survivorship be predicted when the firm first goes public? Kim (2019) show that underwriters’ reputations can be used to explain the sustainability of newly listed firms in Korea.

Megginson and Weiss (1991) show underwriter reputation is negatively related to initial returns of US IPOs in the 1980s while Loughran and Ritter (2004) suggest that the negative relation between underwriter reputation and underpricing has reversed in the 1990s with U.S. IPOs. Asian markets also show underwriters reputation has heterogeneous effect on IPO returns. Ong, Mohd-Rashid, and Taufil-Mohd (2020) study Malaysian IPO sample to show that underwriter reputation had a significant negative association with IPO valuation, They think reputable underwriters may set lower offer prices to reduce the probability of having to repurchase unsold IPO shares. Albada, Low, and Yong (2020) also use Malaysian IPOs to find underwriter reputation and auditor reputation can help reduce initial return, But only underwriter reputation can also reduce first-day price range. Differently, Sundarasen, Khan, and Rajangam (2018) show auditors’ reputation documents a positive relationship, while the underwriters’ reputation has a negative relationship.

Su and Bangassa (2011) use a Chinese sample to test underwriter reputation, measured by the registered capital of underwriter, the relative market share, and the number
of all IPOs managed, to find that there is little influence of underwriter reputation on the level of IPO underpricing, but a significantly positive relationship on the level of IPO long-run performance. In 2001, China had a regulation reform on IPO approval system. The verification and approval system were implemented and the old quota system was abandoned. Su and Brookfield (2013) find the impact of underwriter reputation increases in the post-reform period compared to the pre-reform period. Dhamija and Arora (2017a) discuss how the reputation of auditors, the reputation of lead underwriter, grading by credit rating agencies, and presence of anchor investors on the level of IPO underpricing in India. They show that except for IPO grading, other quality certification variables, including auditor reputation and underwriter reputation, do not make a significant impact on the level of underpricing.

The formation of underwriter syndicate may signal the reputation of underwriters. Lee and Cho (2012) investigate underwriter syndicates in Korea and find most shares are allocated by the lead underwriter and most fees are collected by the lead underwriters. The underwriter syndicates have little effect on IPO pricing.

At least one sponsor in addition to the underwriters must be appointed in Hong Kong’s IPOs. These sponsors must hold the license of advising on corporate finance and must have obtained the permission under its license or certificate of registration to undertake work as a sponsor. Their mission is to assure the IPO applicants meet the listing requirements. Tong and Wong (2020) find that sponsor reputation has power in explaining the IPO underpricing and it is even more significant than the underwriter reputation.

Takahashi (2018) says, in Japan, affiliation between issuers’ board members and underwriters can help small issuers to have reputable banks to be their underwriters. The relation between bank and issuing firms may signal the quality of IPOs. Hao, Shi, and Yang (2014) use a sample of Chinese IPOs to show that good bank–firm relationship can reduce the degree of IPO underpricing. Ogura (2017) also finds similar results in Japan.
3. Media Coverage and Attention

Based on information asymmetry and investor limited attention for IPO firms, media coverage plays an important role in theories of IPO pricing. Chen, Goyal, Veeraraghavan and Zolotoy (2020) study how media coverage impacts pricing of IPOs around the world. They provide evidence that higher pre-IPO media coverage reduces information asymmetry among investors, leading to lower IPO initial returns and lower ex post price revision volatility. Internet queries for IPO stocks can be treat as investors’ information demand for IPO stocks. Kang, Bae, Shin, and Jeon (2020) analyze the relationship between the daily online search volume of Korean IPO stocks and their post-IPO stock returns. They find that the higher the amount of online search for stocks before IPO, the lower the stock returns after IPO both in short and long-term, supporting online media also plays important role in information asymmetry reduction.

Legal institutions and the information environment both exhibit substantial variation across countries, thereby the impact of media varies across countries. Based on the information asymmetry reduction mechanism, the role of media coverage should be stronger in countries with a higher level of media penetration and media trust and weaker in countries with a higher level of media censorship, better financial reporting quality, greater shareholder rights protection, and for IPOs “certified” by reputable intermediaries. Content analyzing on financial news coverage of 38 IPO firms from 2004 to 2010 in Hong Kong, Tong (2013) show that substantive media reputation has a significant positive effect on changes in IPO share price.

In addition to media penetration, organizations of information source of IPOs also influence investors decisions, Cheung, Lam and So (2020) use automatic content analysis to record the salience of different IPO issues in the press releases for IPOs listed on the main board of the Hong Kong Stock Exchange and in the subsequent news reports. Their findings provide evidence that press releases influenced the overall news agenda during the early stage of the offering period, and issue salience on the news media.
during the early stage of IPOs showed significant transfer to the latter stages. The similar phenomenon is also happened in Taiwan. Ho, Huang, Lin, and Lin (2010) find that prior to the offerings, IPO firms tend to strategically report higher earnings, disclose inflated earnings forecasts, and manage more good news. News management emerges as the most predominant factor in aftermarket stock prices. Furthermore, IPO firms also tend to engage in more window dressing activities before a larger sale of IPO shares from existing shareholders or a larger decline in insiders’ holdings.

Alongside investors’ decisions, individual investors’ attention influences underwriters’ pricing behavior. Using a unique Chinese IPO bidding dataset and a particular social media dataset, Huang and Zhang (2020) examine the impact of individual investors’ attention on underwriters’ offer price adjustment, offer price revision, IPO initial returns, and long-term performance. They find that when a company receives more attention from individual investors before the underwriter finalizes the offer price, the underwriter will adjust the offer price higher. Moreover, they find that the IPO initial returns are significantly positively related to individual investors’ attention, but no significantly related to IPO long-run performance.

4. Market Share

The relationship between market share, IPO Underpricing, and political factors is increasingly close, and its influencing factors have become a hot topic of discussion. Chen, Shi, and Xu (2014) investigated the determinants of IPO underwriting market share in China and found that underwriting quality is overall positively related to underwriting market share. A further test on regulatory change shows that underwriting quality is playing an increasingly important role in enhancing underwriting market share in China’s new issue reform era. Simultaneously, central government ownership of underwriters is a significant determinant of market share in the IPO market for state-owned enterprises. Political factors may have impact on market share of
underwriters. Huyghebaert and Xu (2015) attest that before 2005, only political connections significantly positively influenced the market share of investment banks. After 2005, the effect of political connections declined, while a low evaluation standard on IPO candidates and low underwriting fees now also significantly enhance market share.

Fung, Gul, and Radhakrishnan (2014) suggest that for China-based IPO firms on the Hong Kong Stock Exchange, investment banks’ initial market shares, obtained through lower underpricing, help them grow their market shares in later periods, possibly through the expertise gained in the initial business. On the contrary, Ammer and Ahmad-Zaluki (2016) show that in Malaysia, IPOs underwritten by underwriters as having a high market share and charging low underwriting spread experience a higher level of underpricing. They reveal that IPOs issued more biased earnings forecasts are related to severe underpricing and the more accurate the earnings forecasts are, the more minimized will be the asymmetric information and hence, the less will be IPO underpricing.

5. IPOs Backed by Venture Capital and by Private Equity

Sohn, Kim, and Hur (2012) discuss a firm backed by venture capital can increase its speed to go public in Korea. They investigate the same effect for government supported firms and find no positive effect to speed up going public. Cho and Lee (2013) show that IPO firms in Korea’s hightech industries with higher R&D investment have higher underpricing because firms’ high R&D carries high uncertainty. They further show that VC may enhance the above relation.

There are independent venture capital and corporate venture capital in Korea, Song and Lee (2018) argue these two types of venture capital: independent VCs and corporate VCs have different monitoring effect on IPO firms in Korea. They find that IPO firms backed by corporate venture capital have less earnings management and better long run performance. Independent venture capital on the other hand has no effects, Sun, Uchida, and Matsumoto (2013) compare performance of independent venture capital with corporate
venture capital affiliated with financial institutions in Japan. They conclude that IPO firms backed by independent venture capital are younger and smaller, use less reputable underwriters, go public on stock exchanges with less strict listing requirements, and have significantly greater underpricing and poorer long-term operating performance.

Chen, Liao, and Lu (2012) argue that venture capital can improve corporate governance of IPO firms. They use a sample of Taiwan’s IPOs to compare earnings management, board composition, and excess control of IPOs backed by VCs with IPOs not backed by VCs. They show the former IPOs have less earnings management, more independent directors, and less excess control. Liao, Lu, and Wang (2014) also show venture capital in Taiwan can improve corporate governance of IPO firms. They further provide evidence to support that VC–backed IPOs are less likely to encounter financial difficulty than non–VC–backed IPOs. Wang, Anderson, and Chi (2017) also check how venture capital can affect IPO firms’ corporate governance in China. They show VCs with more political ties may have more independent directors on their invested firms.

Zhang and Yu (2017) discuss the choice of domestic or foreign venture capital to help go listing on a foreign exchange. They show that companies backed by U.S. venture capital have better chance to go public either in U.S. or in China. They also find that companies backed by VCs having more U.S. experience are more likely to make use of top–tier underwriters, auditors, and attorneys in the foreign IPO process. Venture capital’s experience and social network are important. Wang and Wu (2020) also show venture capital’s social network on political ties may affect the probability of getting IPO approval in China. They find that companies backed by politically–connected VCs are more likely to obtain IPO approval. They also show that VCs with more political ties are more likely to acquire equity in the company at a significant discount and to invest shortly before the IPO application.

He, Li, Tian, and Wang (2016) show that both domestic venture capitalists and foreign venture capitalists choose to invest in companies with higher value potential. However, they find VC backed firms do not have significantly better post IPO profitability than
non-VC-backed firm. On the other hand, Jiang, Cai, Keasey, Wright, and Zhang (2014) find Chinese small and median enterprises backed by venture capital have better IPO performance on higher premiums, lower initial underpricing and higher subsequent market reaction. Tan, Huang, and Lu (2013) also support venture capital has significant certification and monitoring effect on small and median enterprises in China.

Private equity grows rapidly in the Asia-Pacific region. Private equity invests largely on new startups, IPO is a desired exit for private equity capitalists, Deb and Banerjee (2020) show India’s venture capital and private equity cannot help IPO firms have sustainable good performance after listing. They argue if venture capital and private equity can continuously enhance their monitoring and mentoring role, IPO long run performance will be better. Chinchwadkar and Seth (2018) study what may affect a private equity’s exit choice between an initial public offering and an acquisition. They find that a strong network of syndicate private equity increases the probability of an IPO exit, but the presence of a foreign private equity investor reduces the probability. Drebingler, Rai, and Hinrichs (2019) compare aftermarket performance between private-equity-backed IPOs and non-private-equity-backed IPOs. They find that although India IPOs have underperformance one year after listing, private-equity-backed IPOs have lower degree of underperformance. They also find foreign private equities had worse performance than local India private equities.

6. Corporate Governance

As Claessens and Fan (2002) point out corporate governance has been received much attention in Asia after the Asian financial crisis. Agency problems have been exacerbated by low corporate transparency, associated with rent-seeking and relationship-based transactions, extensive group structures and diversification, and risky financial structures. In order to protect investors, both government authorities and stock exchanges impose rules on a company’s board structure and governance practices. Firms need
to satisfy certain requirements in order to apply for IPO and to attract investors to subscribe. The governance policies adopted by a firm may affect its IPO performance.

There are rich studies on corporate governance for Asian IPOs. We category literatures based on topics: including board gender, board characteristics, ownership/group affiliation, information disclosure, corporate social responsibility (CSR), sustainability, trust, and others. Table 3 shows topics and related studies.

### 6.1 Board Gender

Adams and Ferreira (2009) argue that female directors are more likely to raise more questions than the other directors, and might be also more active and tougher monitors. Several studies have investigated the relation between board gender diversity and firm performance in the United States. Adams and Ferreira (2009) find that female directors have better attendance records than male directors and women are more likely to join
monitoring committees. Their results suggest that female directors have a significant impact on board inputs and firm outcomes.

Women on corporate boards play an important role in board decisions that affect firm’s valuation. Badru, Ahmad–Zaluki, and Wan–Hussin (2019) use Malaysian IPOs to show that women on corporate boards have a positive influence on the amount of proceeds to be allocated for investment opportunities. Nadeem (2020) find in China, more female directors can have more information disclosure on intellectual capital, while more female independent directors may have a negative effect of intellectual capital disclosure. McGuinness (2018) shows gender board diversity is much less common in state-owned enterprises for Chinese IPOs. For the privately controlled IPO firms, gender diversity serves as a positive signal on IPO performance. Singh, Singhania, and Sardana (2019) investigate how number of women directors in India’s corporates can affect IPO firms’ aftermarket performance, measured by Tobin’s Q. They conclude that the proportion of women on board has insignificant effect on IPO performance. Ammer and Ahmad–Zaluki (2017a) study Malaysian IPO firms and find an insignificantly positive relationship between gender diversity in audit committees and absolute forecast error. Female directors in audit committee do not show a significant effect. Handa and Singh (2015) show the proportion of women directors has a negative non–significant impact on returns of India IPOs. Badru, Ahmad–Zaluki, and Wan–Hussin (2019) show the proportion of female directors has negative effects on IPO initial returns on Malaysian IPOs. As we can see there are inconsistent results of how female directors affect IPO performance. That is why Ming and Eam (2016) test the non–linear effects of the presence of women directors on the board on the financial performances of Malaysian companies which undertakes IPOs. They find that presence of women directors on the board do not purport to have any significant linear or non–linear impact on the financial performance of the companies under reference, except for the companies in the top 80th percentile of return on equity. Similarly, strong evidence is also found when the number of women as board members is more than 15 percent.
6.2 Board Characteristics

Directors are representors of shareholders to charge with monitoring and advising management and to provide strategic direction for the corporation. Board of directors described by board characteristics can be used to describe the corporate governance principles in firms. Many studies evaluate the impact of board characteristics: board composition, independent directors, board size, board diversity, and board meetings and meeting agenda on firm valuation. These findings highlight the key board characteristics that have significant influence on corporate governance policies.

When applying for IPO, companies must obtain approval from the government authorities. The quality of corporate governance plays a key role on getting approval. Chen, Huang, Li, and Zhang (2018) use a sample of Chinese firms that applied for IPOs between 2006 and 2011 to find that firms with more outside directors, smaller boards, and more balanced ownership among large shareholders are more likely to pass the IPO screening. Firms with better corporate governance have better post-IPO performance. Handa, Singh, and Sharma (2018) discuss the impact of various board characteristics: board reputation, board size, board committees, independent directors, women directors, and age of board on IPO initial returns. They do not find evidence that the corporate governance reforms in India have been completely successful in weeding out information asymmetry and bringing in transparency to the IPO process. He, Ma, Wang, and Xiao (2019) study how China’s deregulation on IPO pricing can improve the IPO firm’s corporate governance. It is because after pricing deregulation, firms with better corporate governance will be priced higher. This motivates IPO firms to choose high-quality governance structures as a commitment device to gain higher valuation.

Besides those traditional measures of board characteristics, Cheung, Dai, Ouyang, and Tan (2018) show IPO performance can be affected by the role of the founders in Hong Kong. The underpricing levels of no-founder, pure-founder, founder-chairman/CEO, and founder-chairman-CEO firms show a descending order of 14.9%, 9.5%, 8.4%, and 7.7%, respectively. Wang and Song (2016) show the impact of founder directors on the
IPO price premium has an inverted U–shape in China. When IPO firms buy D&O insurance for their directors, Kan, Chen, and Krishnamurti (2020) use Taiwan’s sample to support that firms become more aggressive on making higher IPO pricing decisions, because they see there will be a higher retail subscription. Can board chairman celebrity influence IPO underpricing? Ouyang, Zhu, Liu, and Cheng (2021) find in Chinese sample that IPO underpricing is low when organizational celebrity or the board chairman’s celebrity is more. CEO duality, the practice of a single individual serving as both CEO and board chair, has been studied by Kao and Chen (2020a) on Taiwan’s sample to see how duality may affect an IPO firm’s aftermarket R&D expenditure. They find that high–tech IPOs with CEO duality aggressively invest in R&D during the early aftermarket period. Cao, Ding, and Zhang (2016) find that social capital measured based on entrepreneurs’ political connections and firm ownership plays an informal governance role to affect the IPO aftermarket performance in China, while formal governance variables such as board size or board independence have little effect.

6.3 Ownership / Group Affiliation

Corporate governance literatures document inconsistent results on the relationship between board characteristics and firm performance. The above relationship may be influenced by ownership and business group affiliation.

Sakawa and Watanabel (2020) examine how several ownership measures affect Japanese IPOs. First, parent ownership does not have influence on IPO underpricing. Second, CEO ownership increases IPO underpricing. Third, bank ties mitigate underpricing.

Many papers discuss the influence of group affiliation on IPO performance. Kim, Lim, and Yoon (2017) discuss the effect of sale of secondary shares on Korean IPO performance. They show if the secondary shares are from affiliated firms, there will be a negative market reaction. Kouwenberg and Thontirawong (2016) show IPO firms have more earnings management than non–IPO firms in nine Asian countries. However, this effect is mitigated if the issuer is group affiliated. Marisetty and Subrahmanyam
(2010) find there exists a higher underpricing for group affiliated IPOs in India. Takahashi, Yamakawa, and Mathew (2018) use a Japanese sample and Wadhwa, Neupane, and Syamala (2019) use an Indian sample to find board members’ prior affiliations with venture capitals promote financial and human resource investments from the affiliated venture capital firms. However, they do not find evidence that affiliation based resource investments leads to better post–IPO performances.

One specific group affiliation is the family group, which is common in Asia. Ding and Pukthuanthong (2013) discuss a Taiwan sample on the role of non-family directors in the IPOs of family firms. They show that non-family directors improve the monitoring effectiveness of the board and the IPO performance of family firms. Huang, Li, and Zhang (2019) find that the IPO underpricing of family business is lower than non-family business by a 12% in China. The effect of underpricing on family firms is stronger for firms in regions with a relatively good legal environment. However, Yu and Zheng (2012) use a sample in Hong Kong to find that larger IPO underpricing is associated with stronger family involvement.

6.4 Information Disclosure

Information disclosure is a channel through which market can obtain information to evaluate the firm value. Information disclosure and corporate governance are highly connected. Firms’ information disclosure is considered to be a good thing. However, Hermalin and Weisbach (2012) argue greater disclosure may create additional agency problem. It will be interesting to see how information disclosure may affect IPO performance.

Information disclosure can mitigate information asymmetry problem engaged in IPO firms. China Securities Regulatory Commission requires IPO applicants to disclose information on customer concentration of the aggregated total sales ratio of their top 5 customers combined. There are also some firms voluntarily disclosed the specific detailed sales ratios of each of the top 5 customers in the three years before an IPO. Peng,
Wang, and Chan (2019) use the above data to show that when a firm discloses a high customer concentration, its IPO underpricing is low. Information on supplier is also useful to predict IPO performance. Peng, Wang, and Chan (2020) find that firms with stable suppliers have lower IPO underpricing.

In Hong Kong, there is a high proportion of IPO firms disclose profit forecast in their prospects. There is an underestimation phenomenon on this profit forecast. McGuinness (2016a) shows the forecast error has strong connection with IPO performance, namely larger underpricing.

6.5 Corporate Social Responsibility (CSR)

Korea Exchange (KRX) published ‘Guidelines on Disclosure of Corporate Governance’ for listed companies on April 2019 in order to encourage publishing transparent and comparable disclosures among companies. According to the definition by Investopedia, corporate social responsibility is a self–regulating business model that helps a company be socially accountable—to itself, its stakeholders, and the public. By practicing corporate social responsibility, companies can grow their relationship with stakeholders and grow their business.

Jia and Zhang (2014a) argue that different stakeholders interpret the signals sent by corporate philanthropy differently. They use Chinese IPOs to investigate how various stakeholders involved at different stages of IPO process may interpret the signal sent by firm philanthropy. They find that corporate philanthropy attracts less prestige underwriters, less issuing cost, and fewer venture capital investment. They also suggest that firms subject to pre–IPO negative media reports should engage in corporate philanthropy in order to achieve higher market–valuation premiums, measured by net proceeds. However, they argue that there is a U–shape relation between corporate philanthropy and market valuation. Another paper by Jia and Zhang (2014b) also show a U–shape relationship between the pre–IPO corporate social performance and post–IPO short term performance. They measure pre–IPO
CSR by the ratio of giving to profit and the post-IPO performance by 40-day buy and hold returns.

Firms after going public may use proceeds raised to extend their operation and may result in more air pollution. However, Luo, Qian, and Ren (2015) find that IPO firms in China may use proceeds raised to enhance their social responsibility and then reduce air pollution. Li and Hu (2020) use a sample of Chinese IPO firms to show that there is a significant and sustained increase in CSR performance after IPO. They further show the increase in CSR performance is more pronounced in heavily polluting industries, especially at firms that are covered by more securities analysts, and more media.

6.6 Trust

Many studies discuss how reputation of auditors and of underwriters may affect IPO underpricing. In addition to that, Kaur and Singh (2019) study an Indian sample on how corporate reputation of the issuers may affect their IPO performance. They show corporate reputation serves as a signal of issuing company’s credibility, resulting in lower underpricing. They use firm size as the proxy of corporate reputation.

Li, Wang, and Wang (2019) use a concept of social trust to represent corporate reputation. They find that firms in regions of high social trust have lower underpricing in their Chinese sample. They measure province-level social trust using the perceived enterprise trustworthiness at the firm’s home province. The trust score is obtained from a survey by the Chinese Enterprise Survey System across the 31 provinces of China in 2000. Liu and Chiang (2020) study the impact of Confucianism on IPO underpricing using a large sample in China. They find that Confucianism can improve financial reporting quality, which reduce information asymmetry and therefore reduce underpricing. Consistent with the literature discussing trust, their results show that the informal institutions like the ethical philosophy of Confucius can have impact on IPO underpricing.

In Chinese culture, certain digits are lucky and others unlucky. IPO firms may seek
lucky numerical stock listing code to expect a good fortune of the company. Hirshleifer, Jian, and Zhang (2018) find firms with lucky listing codes experience inferior post–IPO abnormal returns, consistent with superstition effects. Lucky listing codes are not good indictors of corporate reputation.

6.7 Others

Not studying directors’ ability but managers’ ability, Hwang, Jung, Yang, and Yu (2018) find that firms in Korea with more talented managers are more likely to go public. However, their firms’ long–run aftermarket performance is poor compared to those IPO firms with less able managers. McGuinness (2019a) studies how female senior managers in Chinese IPO firms affect IPO performance. Unlike female directors, female senior managers have strong effect on IPO initial returns.

7. Earnings Management and Earnings Forecast

Currently, an increasing number of scholars pay attention to the earnings management of IPO firms, especially the influence of underwriters, managers, institutional investors, and IPO ratings on the earnings management. Regarding the correlation between pre–IPO earnings management and underwriter reputation for issuers, Chen, Shi, and Xu (2013) use a sample of Chines IPOs to document a significant inverse relationship between underwriter reputation and pre–IPO earnings management for non–state–owned enterprise issuers only, while no significant association is found for state–owned enterprise issuers. Du, Li, Liu, and Lai (2018) find that a close unexpected accounting receivables, as reflected in repeated collaborations between an underwriter and an audit firm in Chinese IPOs, is positively associated with pre–IPO earnings management. They provide further evidence that unexpected accounting receivables is associated with a greater likelihood of irregular activities in the post–IPO period and poorer post–IPO financial performance.
Management characteristics have a significant impact on the earnings management of IPO firms. Cheon, Kim, and Hwang (2011) suggest that self-serving managers of IPO firms in Korea inflate earnings before selling their shares to increase their profits from insider trading. Earnings management prior to insider trading is of interest to investors, managers, and regulators because it concerns the potentially illegal or unethical transfer of wealth. Unless the capital market negates earnings overstatement that is motivated by insider selling, wealth may be transferred from unwitting investors to self-interested managers. One way to deter managers’ incentives for earnings overstatement prior to insider selling is to enhance the information environment surrounding the firm. Liao, Huang, and Liu (2015) use U.S. sample to examine the relationship between IPO firms’ earnings management behavior during lock-up period and operating performance following lock-up expiration, and the results indicate that discretionary accruals during lock-up are significantly higher than those after lock-up expiration. In addition, the reversal effect of discretionary accruals results in a negative association of discretionary accruals in lock-up period with post-lock-up operation returns on assets. This negative relation is primarily concentrated in small-sized, non-venture backed, high-tech, and hot-market issued IPOs. In contrast, using Taiwan’s sample, Shu, Chiang, and Lin (2012) argue that the offer premium is affected neither by earnings management nor managerial optimism, which is probably due to the greater scrutiny by the associated underwriters who are less gullible to managerial optimism or earnings management. Investors are cautious about taking the face value of earnings management when IPO managers are perceived as moderately optimistic. Managerial overoptimism is the dominant factor in explaining long-run underperformance. Gao, Meng, Chan, and Wu (2017) investigate how Chinese investors, especially institutional investors, react to the issuing firm’s pre-IPO earnings management and suggest that institutional investors’ bid prices are negatively correlated with pre-IPO earnings management. They also document that the retail investor oversubscription ratio is negatively or not associated with pre-IPO
accrual-based earnings management. Purayil and Lukose (2019) examine the impact of ownership dilution on earnings management among India’s IPO firms. They argue that the degree of earnings manipulation by issuer firms is positively associated with the ownership dilution at the time of IPO as well as around the time of lock-up expiration.

Shette, Kuntluru, and Korivi (2016) use an Indian sample to prove that the earnings and market performance of IPO companies are abnormally high in the IPO year as compared to the post-IPO years. Similarly, the quality of earnings during the IPO-year is lower than those in the post-IPO years, Huang and Shu (2014) find that accounting accruals do play a role in post-issue underperformance in China, Maheshwari and Agrawal (2015) aim to examine the impact of IPO grading on earnings management by India’s companies in their IPOs. Specifically, they investigate whether earnings management significantly differs in the pre-IPO and post-IPO grading regimes. Furthermore, they examine whether earnings management significantly differs between high-grade and low-grade IPOs. Earnings management is significantly lower in graded IPOs than in those that are not graded. Furthermore, among the graded IPOs, the high-graded IPOs exhibit lower earnings management than the low-graded IPOs.

Firms’ profit forecast is also a hot topic. Ammer and Ahmad–Zaluki (2017b) seek to examine the impact of disclosure regulation on the levels of bias and accuracy in firms’ earnings forecasts disclosed in the prospectuses of Malaysian initial public offerings. Specifically, they investigated the two environments of the regulation, mandatory versus voluntary, to draw some conclusions regarding the benefits of regulating firms’ earnings forecast disclosure. The empirical results of multivariate regressions indicated that disclosure regulation has a positive and significant impact on the bias and accuracy of firms’ earnings forecasts disclosed in IPO prospectuses. In general, the results suggest that using disclosure regulations to improve the quality of IPO earnings forecasts can be, to some extent, an effective strategy. Ammer and Alsahlawi (2019) examine the impact of Shari’ah-compliant status on the accuracy
of initial public offering (IPO) earnings forecasts and investigate the effect of the existence of Muslim directors on IPO companies’ boards of directors on the accuracy of earnings forecasts. The initial findings show that during the study period, the earnings forecasts of Malaysian IPOs are accurate to some level, although the degree of accuracy is still unsatisfactory. The findings also showed that Shari‘ah–compliant status and Muslim directorship do not positively affect the accuracy of IPO earnings forecasts.

8. Underwriting Fee

In the IPO market of the U.S., an underwriter’s gross spread has clustered at 7% (Chen and Ritter, 2000). Sohn and Seo (2013) show the Korean IPO market spread is clustered at 3.5%, and they argue the concentration is not due to collusion.

9. Lock–up Period

Lock–up provisions are imposed in many markets. For example, all IPO issuers in Malaysia stick to the mandatory lock–up period imposed by the regulator, while being more concerned about the lock–up ratio, that is, the percentage of shares that are prohibited from being sold, disposed, and/or transferred during the lock–up period. Rashid, Abdul–Rahim, and Yong (2014) examine whether the lock–up ratio and lock–up period affect the initial returns. They argued that in an environment characterized by high information asymmetry, a lock–up agreement can serve as an effective mechanism to signal the risk or quality of firms. The lock–up period is significantly positive in explaining IPO initial returns, but the lock–up ratio is not.

Goergen, Mazouz, and Yin (2010) analyze the lock–up issue at different point of view. They used a sample of 272 and 221 Hong Kong IPOs and attributed the

7) According to Investopedia, Shariah–compliant funds are investment funds governed by the requirements of Shariah law and the principles of the Islamic religion. Shariah–compliant funds are considered to be a type of socially responsible investing.
absence of a price reaction to the fact that most of the Hong Kong IPO firms are controlled by one or two non-institutional shareholders who choose not to sell their shares after the lock-in expiry, so the lock-in expiry causes an increase in both trading volume and the bid-ask spread, but no significant change in the share price.

10. Text Mining

Loughran and McDonald (2011) established corporate word lists to measure disclosure tone. They argue that the more uncertain the text contained in the prospectus, the more difficult it is for investors to value the firm. Loughran and McDonald (2013) find that IPO firms with a higher level of uncertainty in the prospectus experience higher underpricing.

When a firm goes public for the first time, its prospectus serves as an important reference for investors. This is because the prospectus is closely related to short-term IPO valuation, IPO initial yield and investment risk. Aerts and Cheng (2012) apply text mining on Chinese IPO prospectus and use the management commentary on firms’ financial performance to predict IPO performance. They find that assertive causal disclosures regarding positive outcomes, such as enhancements and entitlements, are associated with higher IPO offer price valuation and subsequent lower first-day underpricing. Defensive causal disclosures regarding negative outcomes, such as excuses, justifications and causality denials, however, tend to negatively affect IPO offer price valuation but are not associated with first-day underpricing.

Wasiuzzaman, Yong, Sundarasen, and Othman (2018) reveal a direct relationship between IPO initial returns and the disclosure of risk in Malaysia. Overall risk disclosure is found to be highly significant in influencing initial returns. However, further investigation into the individual group of risks shows that only investment risk is highly
significant in influencing IPO initial returns. Ng and Lee (2019) deduce that the IPO prospectuses of Malaysian companies do not provide sufficient risk–relevant information in the risk factor section. The findings imply that, overall, the management of Malaysian companies would neither be able nor willing to disclose the right and relevant information to the public via IPO prospectuses.

IV. Special Features of Asian IPOs

Markets surveyed in this paper are located at the Asia–Pacific region, where has been enjoying the highest growth rates in the world and serves as the engine of world economy. The development of capital markets, especially the IPO market has contributed the economic growth in this area. Many reforms have been taking into practice to increase market transparency and to improve pricing efficiency. Asian IPO markets provide many quasi–experiments for academia to investigate many interesting topics.

1. Underwriting Design

Underwriting design is important for the IPO process to effectively and efficiently structure the offering, set the offer price, and allocate shares to investors. Currently, bookbuilding is the dominant underwriting method in Asian countries. Auctions, dirty auctions, and fixed price offerings have been tried in some of our sample countries. These experiences can provide us with lessons to restructure the offerings and set the offer price efficiently. According to Jagannathan, Jinnyi, and Sherman (2015), underwriters have no allocation discretion or little discretion when the fixed price offerings are oversubscribed. In bookbuilding IPOs, underwriters have pricing and allocation discretions. Underwriters use pricing and allocation discretion to solicit demand information. Price is set after underwriters have built the demand book, Auctions,
either discriminatory or uniform price, are multi-unit sealed-bid auctions, in which price is based on investor bids and allocation rules are determined prior to bidding. Auctions are believed to not possess pricing and allocation discretion. Dirty auctions have been used in China. Dirty auctions allow issuers to choose an offering price strictly below the market-clearing price. A typical dirty auction is a uniform price auction that operates according to the approach of “leave something on the table” by pricing below market clearing (Jagannathan, Jinnyi, and Sherman, 2015). In Chinese dirty auction IPOs, underwriters may observe bids and give some bidders information about the bids of others during the bidding period.

Underwriters in bookbuilding IPOs collect information (Sherman 2005) and have an information advantage (Chiang, Lowry, and Qian, 2019). Price and allocation discretion give power to underwriters to set up lower offer prices because of information production or rent seeking. Benveniste and Spindt (1989) and Sherman and Titman (2002) argue that underpricing is necessary to compensate investors for providing their private information. The other is the agency problem of the underwriter. Loughran and Ritter (2002) and Liu and Ritter (2011) show that because of pursuing their own rent, underwriters may allocate underpriced shares to their favored investors. Chang, Chiang, Qian, and Ritter (2017) provide evidence to show that even with low information asymmetry, the agency problem of underwriters may still cause underpricing.

Before adopting the typical bookbuilding procedure, China once used so-called “dirty auctions” to conduct IPOs. In Chinese dirty auction IPOs, underwriters can observe bidding information and set up a lower price below the market-clearing price. Because of setting up a lower winning price, underwriters allow their favored clients to be qualified for winning shares. Bidding quantity will therefore be larger than the selling quantity, and there must be a way to allocate shares to oversubscribed investors. Before November 5, 2010, shares were allocated to investors on a pro-rata basis, based on the weight of their bidding quantity. After that, the lottery replaced pro-rata to decide how many shares a bidder could obtain. Underwriters can observe bidding information, and they
Asian IPO markets provide an experimental sample to test the effect of pricing and allocation discretion. Chiang, He, Liu and Zou (2021) utilize the above Chinese setting to test whether rent seeking is possible in dirty auctions in which underwriters can observe detailed bidding information. They find underwriters have incentive to share bidding information with their favored clients. Those funds having stronger commission ties with the underwriter submit bids later, place more strategic and accurate bids, have more bids qualified for the allocation round, and are more likely to receive share allocation. They argue that this is evidence of the rent-seeking behavior of underwriters in dirty auctions.

Bubna and Prabhala (2011) used India’s sample to prove that giving underwriter allocation powers helps IPO price discovery. There was a regime switch in India. Prior to November 2005, underwriters had allocation discretion, but no longer controlled allocation after that date. Bubna and Prabhala (2011) used a difference–in–difference approach to compare underpricing between bookbuilding and fixed–price offerings before and after November 2005. They find that allocation is effective in lowering underpricing for bookbuilding IPOs compared with fixed–price offerings. They also find that more than 50% of funds stop participating in IPOs after November 2005.

After 2005, India’s underwriters have no discretion, they used a lottery to assign shares to investors. Anagol, Balasubramaniam, and Ramadorai (2018) document that the winners of IPO lotteries are substantially more likely to hold randomly allocated IPO shares for more months than lottery losers, who bought shares after the IPOs.
2. Regulatory Changes

IPO underpricing can be explained by heterogeneous institutional, regulatory and legal environments across countries. Governments may improve the legal and regulatory framework of the market to improve IPO efficiency. An IPO’s performance is related to legal and political features and the regulatory environment in which it operates. Many articles investigate how regulatory changes help explain IPO performance.

Korea has regulatory requirements on IPO price support differed from the U.S. practice. There was a series of the regulatory change in price support in Korea, Shin (2010) investigate a structural change in August 2003, that underwriters’ obligation on price support was relaxed. Before the reform, the mandatory price support covered all tradable shares. After that, a put–back option was granted only to retail investors. Shin (2010) argues the relief should reduce underwriters’ costs of underpricing. However, the results do not show a consistent significance.

Japan changed listing requirements in 1990s several times. Takahashi and Yamada (2015) investigate the impact of relaxing listing requirements on firms’ growth around initial public offerings. They find that relaxing listing requirements enables high–growth firms to be eligible to go public.

To protect the interests of investors and enhance the transparency of the stock market, the China Securities Regulatory Commission issued the non–tradable shares (NTSs) reform in 2005. This reform, designed to convert non–tradable shares into tradable shares, is believed to restore the distorted supply–demand relationship of newly issued shares and reduce the information asymmetry. Huang, Li, and Chen (2019) show that financial market development after the NTS reform helps to reduce IPO underpricing and enhance long–run stock performance, Khurshed, Tong, and Wang (2018) further show IPO shares issued by state–owned enterprises and non–state–owned enterprises had similar underpricing rates before the reform. However, non–state–owned enterprises
IPOs have smaller underpricing than those of state-owned enterprises after the reform.

In Hong Kong, an IPO includes both a placing tranche and a public subscription tranche. When the public offer tranche is oversubscribed, a regulation prescribes certain clawback arrangements whereby given proportions of the shares will be transferred from the placing tranche to the public offer tranche. Clawback rule to bring fairness between institutions and retail investors is a unique feature of that market. Vong and Trigueiros (2017) find that allocating new shares to retail investors increased after the new regulation. This effect not only widen the ownership base for IPO firms but also entice small investors to participate in subsequent IPOs by the same underwriters. They also show underpricing became smaller.

Guo, Ge, Hsu, and Fung (2019) investigate IPO underpricing for a sample in China during a period when “window guidance” policy was suspended. They find in that period that investors had a greater chance of losing money by investing in newly listed IPOs than by investing in the secondary market.

China has a listing requirement on excess employment. Johansson, Luo, Rickne, and Zheng (2017) study the role of excessive employment in applying for IPOs. They find that firms having more excess employment are more likely to be approved for an IPO.

An important regulatory change is on underwriting mechanism. Pu and Wang (2015) study a sample of Chines IPO during 2003 to 2007 to see how underpricing has been affected after underwriting mechanism changed. China switched IPO underwriting method form fixed-price offering to bookbuilding without allocation discretion. They find underpricing of IPOs became significantly higher. Liu, Uchida, and Gao (2014) find another effect after the change of underwriting mechanism. They show the relation between manager ownership and earnings management disappeared after the fixed price offering was dropped. Zhang, Zhang, Huang, and Zhou (2015) find underpricing decreased after the introduction of bookbuilding in China.
3. Second Markets and Small and Medium Enterprises (SMEs)

The fewer number of firms going public in recent years has raised concerns with governments. Regulations have been changed to encourage more IPOs. Many countries have encouraged the creation of public markets for small and medium companies (SMEs). Many of these “second markets” have lower listing requirements than the main boards. The second market is usually part of the existing main board to list private companies. Investors are able to buy and sell securities of private companies depending on fundamentals such as supply, demand, financial statements and other disclosures. Canada has the Toronto Venture Exchange, and Germany set ill-fated Neuer Markt in 1997–2003. In Asia, China sets the ChiNext market and requires just one year of positive earnings, and in Korea, the KONEX market has been open since 2013. The KONEX market supports small and medium-sized startups to raise capital. The IPO requirement for the KONEX market is less rigorous than the requirements for the KOSDAQ market. Chiang, Ritter, and Vismara (2019) show that many countries develop second markets to attract more IPOs for small firms. However, those IPOs’ performance was poor and hurt investors.

Asian countries have developed second markets for small firms. Several papers discuss IPO performance in newly developed second markets. For example, although the listing requirements are lower on ChiNext, firms still need to pursue efficient ways to gain government approval for listing. Firms seek support from VCs. Zhang, Zhang, Schwab, and Zhang (2017) show that VC investors affiliated with powerful organizations can promote entrepreneurs preferential access to stock market gatekeepers, eq. government agencies, securities traders, and universities, will gain better chance. ChiNext is parallel to other main boards to use bookbuilding without allocation discretion to sell IPO shares. Deng and Zhou (2017) argue this process causes principal–agent conflicts between the underwriter and the issuer, in effect, contributing to large initial IPO underpricing. Anderson, Chi, and Wang (2015) compare IPOs’ performance on the ChiNext with those

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8) To classify markets into main and second markets, please read Henselaar, Stulz, and van Dijk (2018).
on the Main Board and those on the Small and Medium Enterprise Board. They find that initial average market adjusted returns on ChiNext is higher than those on the other markets, while buy-and-hold abnormal returns on ChiNext is smaller than those on other markets. They argue the results are due to the significant worse operating performance of IPO firms on the ChiNext. Deng and Zhou (2016) show that subscription ratio during the IPO process, market condition before listing, and offer size can predict the opening price and closing price for ChiNext IPOs. Does that mean price discovery on ChiNext is efficient? Luo and Ouyang (2014) say no, They use the Bayesian stochastic frontier analysis to show that most of the information about the issuers is not reflected in the offering price of ChiNext IPOs, Funaoka and Nishimura (2019) provide empirical evidence to show that certain institutional investors, especially securities firms, use their information advantage to make profit from IPOs on ChiNext.

The ChiNext market, which was launched in October 2009, and the SME Board was launched in May 2004. Ge, Guo, Fung, and Guang (2019) use a sample on Chinese SME Board during a period when window guidance” policy was suspended and find that CEOs’ political connections plays a significant role in deciding the offering price but no role in the short–term returns of the IPO. Hou and Li (2019) say industry support from government has a positive effect on IPO performance for firms on the Chinese small and medium–sized enterprises board.9) Small and median enterprises in China may attract minority state investment. Does minority state ownership affect IPO performance? Wang, Jiao, Xu, and Yang (2018) show minority state ownership has no impact on underpricing for SME IPOs. However, it has effect on price premium, measured by percentage difference of offer price and book value. Yang, Ma, and Doty (2020) found that family SME firms tend to exhibit less IPO underpricing than nonfamily SME firms. They also show family members’ political ties enhance the negative relationship between family involvement and IPO underpricing. Guo, Wang,
Li, and Fung (2013) test how the following factors, high first-day turnover ratio, small price update, good stock market condition, and high average initial returns of other firms prior to an IPO issue, may have positive effects on initial return for SME IPOs. Zou, Cheng, Chen, and Meng (2020) use a stochastic frontier approach to estimate the fair value of SME IPOs to show that actual offering price is lower than its fair price.

Arora and Singh (2020a) study the subscription level and examine the determinants of oversubscription of India’s SME IPOs. Positive effects are from firm size, underwriter reputation, and hot market. On the contrast, issue price, pricing mechanism, and listing delay show negative influence on oversubscription. Regarding the aftermarket performance, Dhamiija and Arora (2017b) find the level of underpricing is lower than that of IPOs listed on the main board stock exchanges in India. This is inconsistent with studies in other countries. However, Arora and Singh (2020b) do document that presence of female directors on board reduces the underpricing of India’s SME IPOs. Kalra and Kansara (2017) conclude that no IPO characteristics can explain short run aftermarket returns for Indian SME IPOs.

In Korea, SMEs can apply matching fund program (MFP) from the Korea Core Industrial Technology Investment Association (KITIA) to support their operation. Heo, Sohn, and Ji (2014) find that firms with MFP are easier to go public than those firms without MFP.

4. Cross Listing

We see many dual listings across countries, especially for Chinese companies. Many papers discuss the cross-listing issues of Chinese firms on U.S. Exchanges. Amin, Wu, and Haque (2019) state that Chinese firms started issuing stocks in the U.S. in 2001 after China joined the World Trade Organization (WTO). They use SDC to identify Chinese firms listed on the U.S. exchange markets, collecting 210 cases during 2001–2014. Their paper and earlier studies recognize the growing foreign IPO activities of Chinese enterprises,
Alibaba made history with the largest IPO of 25 billion on the NYSE in 2014. We see evidence of the success of Chinese companies in raising huge amounts of capital in the U.S. However, scandals that occurred later hurt the confidence of U.S. investors.

There are many Chinese companies listed on the U.S. exchange markets. We would like to know what factors lead to the decision to list abroad and what background features in the pre-IPO period are associated with better IPO performance. Bai, Tsang, and Xia (2020) suggest that the CEO’s education background has a strong impact on a firm’s decision to list abroad.

For performance of cross listing IPOs, Haggard, Walkup, and Xi (2015) find that the short-term performance of Chinese firms that go public on U.S. stock exchanges has a mean first-day return of 20.71%, lower than 35.94% of a matched sample of their U.S. counterparts. They argue that these Chinese firms should be good and large enough to be listed on U.S. markets. Jia (2017) studies how pre-IPO ownership from the host country may affect IPO issuing costs and analyst coverage after listing. The evidence shows a positive effect that issuing costs will be lower and analyst coverage will be greater because more pre-IPO holdings of local investors mean less information asymmetry and more attention. Amin, Wu, and Haque (2019) focus on how a CEO’s background may affect Chinese companies’ IPOs in the U.S. If CEOs have international work experience, IPO firms have better IPO performance, measured by net proceeds. They also find that if the firm has a strong political connection, the IPO performance will be worse. This implies a negative reaction of U.S. stock markets to the signal of political connections. Bai, Tsang, and Xia (2020) find that CEOs with a prestigious local education who graduated from one of the top 100 universities in China tend to take their companies public in China, while those with foreign degrees tend to list abroad. The local listing decision is enhanced by CEO tenure and founder identity.

Some Chinese firms use a two-stage approach to be listed on U.S. stock markets. In the first stage, Chinese firms acquire a shell company in the U.S., and then in the second stage, they conduct an IPO to raise public equity capital to finance the
original companies in China, Jog, Otchere, and Sun (2019) find that two-stage IPOs of Chinese firms in U.S. markets have lower issuing costs and lower underpricing because the introduction process reduces the information asymmetry problem, as Derrien and Kecskes (2007) suggest.

5. Listing of Companies with Dual-Class Shares

There were many initial public offerings of companies with dual-class shares in recent years, including Facebook, Snap, Alibaba, and LinkedIn. According to Papadopoulos (2019), approximately 7% of Russell 3000 companies currently have a dual-class share structure in place.

Alibaba abandoned its plan to list shares in Hong Kong because its dual-class structure did not pass muster with local regulators in 2014. To attract tech listings, Hong Kong stock exchanges changed their regulation on dual-class shares.

In 2018, Hong Kong and Singapore allowed the listing of companies with dual-class shares back to back. Xiaomi is the first company with a dual-class structure to go public on the Hong Kong stock exchange. The Shanghai Exchange in China also created a new board to permit this dual-class structure. McKenzie (2020) considers this is a strategy of Asian exchanges to attract more companies to list on their exchanges and to extend their listing number. However, many investors, regulators and corporate governance experts pay attention to this and worry about the risk imposed on common shareholders.

However, Abdullah, Zhou, and Shah (2017) find that Chinese dual-class firms outperform their single-class counterparts in market performance in both years after IPO. The reason is that Chinese dual-class firms bound themselves to the high standards of U.S. exchanges as opposed to the low Chinese local standards. This implies that cross-listing to a market with higher standards improves, not hurts, minority shareholders’ wealth.
6. IPOs of State-Owned Enterprises (SOEs)

In the 1980s, the United Kingdom government conducted a series of privatizations of state-owned enterprises. The trend has been followed in many countries to promote the development of capital markets, Asian countries used to have many state-owned companies, so the privatization of state-owned companies has become an important policy focus.

How did privatization perform in the long run? Choi, Lee, and Megginson (2010) find that privatization IPOs significantly outperform their domestic stock markets in the long run. Instead of measuring short-term returns, they calculate long-run buy and hold returns to compare privatization with benchmark companies. Their sample covers 42 countries, including many Asian countries. Allen, Qian, Shan, and Zhao (2014) discuss the privatization of large financial institutions in China. The main characteristic in this case is that the Chinese government retains majority equity ownership of the bank, but foreign institutional investors hold only minority equity stakes. Allen, Qian, Shan, and Zhao (2014) suggest this may be a model for the privatization of large state-owned financial institutions because they see that this kind of firm outperformed its counterparts.

Then, how about short-term returns of privatization? Do SOEs have a more serious information asymmetry problem? Chen, Wang, Li, Sun, and Tong (2015) find that SOEs have more serious IPO underpricing problems than IPOs of private firms. The reasons lie on uncertainty due to a change of management focus that does not care much about proceeds, and a desire to attract ownership diversification.

A firm’s information asymmetry problem is serious before IPO and can be lessened after the IPO. Banks may charge higher interest rates to private firms before they go public, which is evidence of rent extraction based on banks’ information advantage. Yu, Liang, and Wang (2020) find that Chinese banks cut loan interest rates after firms’ IPOs because their information advantage erodes. This phenomenon is especially
significant for SOEs.

It is interesting to see that Cheng, Wang, and Wei (2015) show that SOEs engaged in earnings management around IPOs to a lesser degree than nonstate-owned companies. Two incentive factors can be used to explain this phenomenon: CEO shareholding and bank relationships. Not only do CEOs of SOEs care less about manipulating financial performance, but there is also less need for earnings management when there is better access to bank loans.

7. Social Networks

In Asia, especially in China, social connections and networks are culturally rooted in every aspect of social activities, including business. Rumokoy, Neupane, Chung, and Vithanage (2019) consider that underwriters in China make use of peer networks to enhance their underwriting performance. They prove that more central underwriters are more likely to attract institutional participation and have better long-run post-IPO performance. If underwriters have good social networks, they can have good IPO performance. If they have political connections, their IPO performance will be even better. They also define underwriters as being more central to their social networks if they have more political connections. They argue that underwriters with better political connections have better IPO performance.

Several papers find that political connections have a significant impact on IPO performance. In China, an IPO screen committee is formed by the China Securities Regulatory Commission to evaluate IPO applicants. To gain approval, firms may utilize their political connections. Yang (2013) argues that audit firms that are politically connected can help reduce their clients’ IPO rejection risk if their partners are serving on the screening committee. Political activities can accelerate IPO activities, Piotroski and Zhang (2014) show that the impending turnover of local politicians can accelerate the pace of IPO activity in China.

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10) Social network is defined as the structure of relationships that exist among a set of nodes. For operational definitions of social networks, please refer to Chuluun (2015) and Bajo, Chemmanur, Simonyan, and Tehranian (2016).
is stronger for state-owned enterprises and is interesting to see for non-state-owned enterprises, although with a temporary increase. Feng, Johansson, and Zhang (2014) further support that entrepreneurial firms and non-state-owned companies controlled by entrepreneurs who participate in politics exhibit superior post-IPO performance. Amin, Wu, and Haque (2019) consider that political connections can even affect a firm’s decision to cross-list in U.S. markets. They measure IPO performance to be the natural log of net proceeds and political connections to be the percentage of top executives who held various positions in political institutions. They find that IPO firms with stronger political connections perform worse in the U.S. market. They believe that political connections impart negative perceptions of U.S. investors.

8. Pre-IPO Markets/ When-Issued Markets

Can pre-IPO markets help improve pricing efficiency for IPO firms? New trading markets for pre-IPO firms have emerged around the world. In the U.S., there are online sites such as SecondMarket and SharesPost. The United Kingdom has a well-organized Alternative Investment Market (AIM). Derrien and Kecskés (2007) show that the underpricing of IPO firms through the introduction of AIM is smaller than that of direct IPOs. In Europe, “gray market” trading exists for many IPOs. India has also established an active gray market. In Taiwan, firms must be traded on a well-organized premarket, named the “Emerging Stock Market”, for at least six months before applying for an IPO.

Cornelli, Goldreich, and Ljungqvist (2006) use the European gray market to test premarket prices as a proxy for investor sentiment. They prove that high gray market prices are a very good predictor of first-day aftermarket prices. Premarket trading can provide valuable information, Chang, Chiang, Qian, and Ritter (2017) study the only mandatory premarket in the world, Taiwan’s Emerging Stock Market, to argue

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11) They consider the following to be political institutions: central government, provincial government, municipal government, Communist Party of China, the military and the Ministry of Commerce.

12) A Gray market is an unofficial market where individuals buy to-be-IPO shares with dealers. It is similar to forward market.
that the agency problem is the main cause of IPO underpricing. Premarket prices are informative about IPO pricing. Trading information in the premarket can reduce uncertainty about a firm’s valuation and mitigate the information asymmetry problem. The traditional reason for information asymmetry causing underpricing should be eliminated. Underpricing exists because of underwriters’ rent-seeking behavior.

Kao and Chen (2019) also prove that Taiwan’s premarket provides information about offerings and reduces the value of bidders’ private information. The existence of a premarket and dual tranche with a clawback provision prevents bidders from revealing their private information. Kao and Chen (2020b) further show that due to premarket in Taiwan, the main role of the pre–IPO audit committee is not to reduce information asymmetry by increasing the quality of financial reporting but rather to mitigate the bargaining power of underwriters and the agency problem.

As Cornelli, Goldreich, and Ljungqvist (2006) indicate, premarket trading provides evidence of investors’ sentiment. Neupane, Paudyal, and Thapa (2014) use an Indian sample to test whether the participation of retail investors depends on market sentiment revealed from the gray market or the fundamental quality of the firms based on the credit rating.

9. Specified Purpose Acquisition Companies (SPACs) and Reverse Mergers

There has been a wave of Specified Purpose Acquisition Companies (SPACs) in U.S. IPO markets since their emergence in 2003. As we mentioned earlier, the number of IPOs has decreased among several countries, including the U.S. However, the number of SPACs and SPAC shares have been increasing in U.S. IPOs in recent years. According to Ritter’s statistics, there are 237 SPAC IPOs, while the number of ordinary industry IPOs is only

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13) Taiwan has a hybrid IPO process that include two stages. First, bookbuilding or an auction is used to collect demand information and then set the offer price and distribute shares to institutional or individual investors. Second, only individual investors are allowed to subscribe to shares based on the offer price set at the first stage. The proportion of shares at the two stages depends on the subscription of retail investors at the first stage.

14) In India, IPO firms are graded by a rating agency on a scale of 1 (poor fundamentals) to 5 (strong fundamentals) with a rating of 3 or more (2 or less) considered to be firms with above average (below average) fundamentals. (see Neupane, Paudyal, and Thapa, 2014)
Lakicevic, Shachmurove, and Vulanovic (2014) argue that the institutional structure of SPACs changes over time, including size, the amount of the IPO proceeds, upfront shares by founders, etc. They show that U.S. SPACs focusing on China are especially successful. The increasing number of SPACs is not a unique phenomenon in the U.S., but it is also observed in Asia. Since the first SPAC IPO was listed on KRX on February 22, 2010, the Korean stock markets have experienced many SPAC investments. Kim, Ko, Jun, and Song (2020) argue that because controlling shareholders try to avoid diluting their ownership in the IPO process, they prefer merging with a SPAC. SPACs have become popular in Korea. Evidence shows that the median controlling shareholders’ ownership is approximately 80.2% for SPAC merger firms and larger than 37.1% for regular IPO firms. They also find that firms merging with SPACs are smaller in size than regular IPO firms.

Firms must satisfy listing requirements to go public and then can raise money from capital markets. If a private firm cannot meet the requirements, they may seek to merge with a public shell company to obtain listed status. What kind of companies are more likely to use reverse mergers? Cheng, Fleming, and Liu (2017) find that private firms with financial constraints and investment thirst are more likely to use reverse mergers. Song, Kim, and Chang (2014) prove that firms backed by venture capitalists are more likely to use reverse mergers. It is an exit strategy for VCs. When VCs consider it is difficult to have private firms to go public via regular IPO processes, they may choose reverse mergers to collect their profits as soon as possible.

The next question is about the performance of these reverse mergers. Lee, Qu, and Shen (2019) find that Chinese reverse mergers are large in size, more profitable, and less politically connected than regular IPO firms. Reverse mergers have not shown poor long-run performance as has been the case with peered IPO firms. This is considered to be a contradiction to the U.S. observation that reverse mergers tend to be small and underdeveloped startups.

Since 2000, many Chinese firms have gone public in U.S. stock markets via reverse mergers. Lee, Li, and Zhang (2015) argue that these Chinese reverse mergers outperformed their
matched peers because they tend to be more mature and less speculative. However, Chinese reverse mergers in U.S. stock markets have been frozen due to several financial fraud cases.

10. Anchor Investors

An anchor investor is brought into the IPO process before the formal bookbuilding process has begun. An anchor investor agrees in advance of an IPO to acquire a certain number of shares and is guaranteed a full allocation of orders. In Hong Kong, benefit other than allocation guaranty is prohibited. The anchor investors pay the IPO offer price without discount. Anchor investors agree to a lock-up period of at least six months aftermarket and to give up the right to be a director on the board. These arrangements can help the IPO process to be smooth by providing confidence to potential IPO investors.

Anchor investors are commonly seen in Hong Kong’s IPOs after the Asian Crisis of 1997. Espenlaub, Khurshed, Mohamed, and Saadouni (2016) investigate two types of anchor investors in Hong Kong: strategic investors and cornerstone investors to see how they can affect the length of listing. They find that IPO firms with anchor investors that are committed long-term investment may list longer on the exchanges. McGuinness (2014) studies the effect of four properties: presence, size, number, and lock-up period, within anchor investors on IPO aftermarket performance: market-to-book ratio and Tobin’s Q. Anchor investors play a signaling role in Hong Kong’s IPO valuation since the market is full of retail investors. All these four factors exhibit a strong positive association with initial IPO value. These facts support that anchor investors offer a strong certification effect, McGuinness (2019b) argue that IPO firms have an incentive to attract anchor investors. They show a firm with strong pre-IPO financing ability, younger CEOs, and a greater number of family-connected board can have more anchor investors to subscribe.

India introduced anchor investors in 2009. Seth, Vishwanatha, and Prasad (2019) document that in 92% of anchor-backed IPOs, the final offer price is set equal to the

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15) Anchor investors are less regulated in Europe. Arrangements are reached among anchor investors, underwriters and issuing firms.
price at which anchor investors were allocated shares. This implies the introduction of anchor investors in India help price revelation. As Gupta, Singh, and Yadav (2019) say the purpose of this new regulation is to reduce information asymmetry. We can use a two-stage framework to describe India’s IPO process. At the first stage, anchor investors can be allocated up to 30% (60% after 2014) of shares at the pre-determined price. Then at the second stage, other investors can subscribe shares. Bhattacharya, Chakrabarti, Ghosh, and Petrova (2020) investigate two effects of anchor investors on underpricing: share proportion allocated to anchor investors and number of anchor investors participation. The find when more shares allocated to anchor investors, underpricing will be smaller. On the contrast, when more anchor investors subscribe, underpricing will be larger. The net impact of these two effects on underpricing is offset. In Gupta, Singh, and Yadav’s (2019) empirical work, they also find participation of anchor investors increases underpricing, which is contrasted with other studies. They also show an anchor backed IPO may have a better long-run performance. An earlier work by Sahoo (2017) does find a positive effect of anchor investors on underpricing. They calculated the number of anchor investors invested in the IPO firm and find larger participation of anchors increase subscription rate and decreases underpricing. Seth, Vishwanatha, and Prasad (2019) also show a negative relation between anchor investors and underpricing. More studies are needed to clarify this issue.

11. Investor Sentiment

During the bookbuilding process, underwriters collect information on investor demand. Investor sentiment is an important indicator of investor demand. Investor sentiment can be measured by the subscription rate. Chung, Kim, and Park (2017) use the subscription rate as a proxy of investor sentiment to describe excess investor demand in Korean IPOs. They test how the subscription rate in the IPO process may affect initial returns and after-market trading liquidity. They show higher initial returns, larger after market
liquidity, and lower long-run returns related to a higher subscription rate indicate overvaluation by retail investors.

Clarke, Khursheed, Pande, and Singh (2016) use an Indian sample to decompose initial returns into two parts: voluntary underpricing by underwriters and underpricing related to first-day trading sentiment. They believe that individual investor sentiment, measured by retail investor demand, drives IPOs’ first returns. There is an overvaluation or overreaction problem.

Tsukioka, Yanagi, and Takada (2018) use a different proxy for Japanese investor sentiment. They apply a text mining mechanism to extract investor attention and sentiment from Yahoo! Japan Finance message boards. They find that bullish investor sentiment positively affects IPO offer prices and initial returns.

We can see that different studies use different definitions of investor sentiment. Wang and Yao (2020) use principal component analysis to construct the investor sentiment index based on several variables: the number of new investors, the consumer confidence index, the market turnover rate, the number of IPOs, monthly trading volume, and margin financing balance. They prove that Chinese IPOs show a positive relationship between investor sentiment and IPO underpricing.

12. Bidding Behavior

Academia has difficulty to study how institutions subscribe during IPO process due to lack of data. Eom (2018) received an IPO bookbuilding data of allocations, oversubscription, and bids. These data provide an opportunity to analyze the bidding decisions of institutional investors in Korean IPO markets. Institutional bidding behaviors may depend on a number of external factors, especially on underwriter’s latitude on pricing and allocating. Eom (2018) finds that the degree of underwriter pricing discretion positively affects institutional incentives of submitting aggressive bids. In addition to subscription ratio, Joh and Kim (2017) use a Chinese sample to argue that prices bid
by institutional investors can reveal their private information, and then yield positive effects on offer price and IPO initial returns.

McGuinness (2016b) studies a sample of Hong Kong IPOs on how subscription cascades can affect IPO performance. Results suggest that weak subscription demand brings strong aftermarket returns while strong demand predicts weak post-IPO returns. Sahoo (2015) investigates the relationship between subscription rate and aftermarket volatility for IPOs issued in India. Subscription rate can be used to predict aftermarket volatility of IPO stocks. Retail subscription rate is relatively more significant than institutional investors’ subscription.

Gao, Brockman, Meng, and Yan (2020) show that the IPO issue price is positively related to the quantity-weighted average bid price and unrelated to the market-clearing bid price. It means that underwriters in China will take the bidding information into account to decide the offer price. In China, 62.07% of the bid prices by institutional investors cluster at integers (Gao, Lu, and Ni, 2019). This figure decreased after a regulatory change. Gao, Lu, and Ni (2019) show that increasing fraction of integer bid price may cause post-IPO return to decrease because institutional investors round the bid price upward to the nearest integer. Gao, Meng, Chan, and Chan (2018) further show investors focus on integer numbers closest to non-integer endpoints of proposed IPO price range as cognitive reference point when making bids. Geertsema and Lu (2019) argue that Chinese regulatory changes may affect the prediction power of institutional subscription on IPO performance. They show that during 1996–2004, oversubscription did not affect IPO initial returns, but had effects after that, 2005–2015. The deregulation makes market force a power on influencing the relation between oversubscription and IPO returns. Mutual funds, as an important type of institutional investors, have impact on IPO subscription and post market returns. Peng and Johansson (2015) show in China that with more mutual fund subscription, IPO returns will be higher. Shen, Cheng, Han, and Chan (2020) show that Chinese IPOs with higher expected skewness have higher institutional bidding prices. Skewness is used to describe the preference for lottery-like IPO shares of institutional investors.
According to Investopedia, Shariah-compliant funds are investment funds governed by the requirements of Shariah law and the principles of the Islamic religion. Shariah-compliant funds are considered to be a type of socially responsible investing. It is believed that the Shariah-compliant status serves as a platform that sends a credible signal to investors, which could possibly explain the IPO oversubscription anomaly. Tajuddin, Abdullah, and Mohd (2018) and Tajuddin, Rashid, Khaw, and Yahya (2019) support this argument in Malaysian IPOs.

Wang, Tang, and Chen (2017) use a sample of fixed-price IPOs in Taiwan during the period of December 1997 to December 2010 to investigate the herding behavior of retail investors. They find the herding behavior has large sensitive effect of post IPO trading. Taiwan used auction method to sell IPO shares in late 1990s\textsuperscript{16}. Hsu and Shiu (2010) study detailed bidding data on these auction IPOs. They argue that frequent bidders in Taiwan’s auction IPOs bid too aggressively. These frequent bidders have lower returns than infrequent bidders.

Chiang, Qian, and Sherman (2010) uses the complete bid information for every IPO auction in Taiwan during 1995–2000 to show that the bids of institutional investors are generally consistent with the predictions of IPO auction theory for informed bidders, while those of individual investors are not. Institutional investors are informed and are also able to submit bids adequately. Individual investors as a group exhibit return-chasing behavior, are uninformed, and systematically overbid. By tracing investors’ bidding history, Chiang, Hirshleifer, Qian, and Sherman (2011) examine how experience affects the decisions of individual investors and institutions in IPO auctions to bid in subsequent auctions and their bidding returns. For individual bidders, (1) high returns in previous IPO auctions increase the likelihood of participating in future auctions; (2) bidders’ returns decrease as they participate in more auctions; (3) auction selection ability deteriorates with experience; and (4) those with greater experience bid more aggressively. These findings are consistent with naive reinforcement learning.

\textsuperscript{16} Taiwan uses auction again from 2016.
wherein individuals become unduly optimistic after receiving good returns. In sharp contrast, there is little sign that institutional investors exhibit such behavior.

13. Other Issues

The U.S. still uses GAAP, while many Asian countries have adopted IFRS. Hong, Hung, and Lobo (2014) find that after countries adopt IFRS, IPO underpricing decreases significantly, and it is easier for firms to raise proceeds from foreign markets. They believe that IFRS adoption can improve the quality of financial reports and thus reduce information asymmetry. In contrast, Lee, Oh, and Park (2020) study Korea alone on how IFRS adoption affects IPO underpricing. They find that IPO underpricing has increased following the mandatory adoption of K–IFRS in 2011. In particular, certain types of firms with larger information asymmetry, such as non–VC–backed firms, experience larger underpricing. Lee, Oh, and Park (2020) argue that the negative impact of adopting IFRS on underpricing is mainly due to the high information asymmetry of small and young startups.

There is a negative spillover of IPOs on the price of existing stocks in China. Li, Sun, and Tian (2018) find that IPO approval announcements and IPO listings have a negative impact on existing stocks. These events may cause a supply shock on existing stocks. Shi, Sun, and Zhang (2018) also find that sizable IPOs have a negative impact on stock markets on subscription days and listing days.

At present, lots of research on IPO underpricing are consistent with the signaling hypothesis. Gao and Hou (2019) support the signaling hypothesis in Taiwan’s high–technology IPOs, with the results that overallocation is negatively related to underpricing, whereas market momentum, first–day trading volume, and managers’ ownership retention rates are positively related to underpricing, particularly for high–technology IPOs. Wong, Ong, and Ooi (2013) test the significance of sponsors in Asian REIT IPOs viz–a–viz quality certification, a signal of firm value, and commitment to alleviate moral hazard concerns. They find a positive and significant bidirectional
relationship between the fraction of shares held by the sponsor in IPO and underpricing which is consistent with signaling model. Wong, Wei, and Chau (2014) show that the degree of IPO underpricing is larger for firms listed in Mainland China than those listed in Hong Kong and that the findings are consistent with the signaling hypothesis—good firms signal their quality to investors by listing in the market with the more stringent regulatory environment where other firms cannot afford to imitate.

Different types of enterprises have different degrees of difficulty in listing. IT industry is very important to Korea’s economy. Many IT startups were seeking the opportunity to go public. Kim and Heshmati (2010) show that these new small enterprises listed on KOSDAQ had a poor post-IPO ROE. A further investigation shows that entrepreneurs’ experience and the number of patents can predict a better post-IPO profitability.

Biotechnology and medical companies are easier to go public and post IPO performance are good, Honjo and Nagaoka (2018) explores the initial public offering and financing of biotechnology startups in Japan, and find that biotechnology startups initially backed by venture capitals and those originating from universities are more likely to go public within a shorter period. Komenkul and Kiranand (2017) argue that the health care IPOs in ASEAN countries overperform in the long-run, irrespective of the alternative benchmarks and methods. Huang and Chang (2018) find the relationships among CEOs’ or owners’ internal motivations, external environment forces, and determinants of their decision to go public, as well as the performances of travel agencies after listing. The result shows that Taiwanese travel agencies consider nine internal motivations, eight external environment forces, and eleven determinants for the decision to go public and ten performance indicators post-IPO.

Some financial companies’ IPO could be underpriced and yet the efficiency has not been improved. Ooi, Mori, and Wong (2019) examine the rationale behind IPO underpricing using a sample of REIT IPOs in Asia. Although the IPOs registered an average initial return of 3.08%, the issuers were able to sell the IPO shares above their fundamental values by timing the listings in periods when existing REIT stocks are traded at a premium.
to their net asset values, Yin, Yang, and Mehran (2015) employ a stochastic frontier approach to measure bank efficiency and assess the selection and dynamic effects of public listing and find strong selection effects. That is, banks that choose to go public are significantly more efficient than those that do not. However, the analysis of the dynamic effects shows no evidence that bank efficiency improves after going public, either in the short run or in the long run. By further look into bank performance around IPO events with non-parametric analysis and find that banks significantly outperform their counterparts prior to IPOs, but this superior performance disappears immediately after IPOs.

In China, high-speed railways change the geographic location segmentation and information transition speed. Hong and Li (2020) find that the introduction of high-speed railways in China reduces IPO underpricing.

V. Future Research and Conclusions

Choi (2011) survey studies on the classical issues in Korea IPOs and conclude that no hypothesis can dominantly explain large initial returns. Our survey also has the similar observation. More studies using more promising approach to study Asian IPO markets are needed.

Ritter (2011) indicates there are four types of IPO rent seeking behaviors. Ritter calls them CLAS controversies, C: Underpriced shares are allocated to clients that can generate high trading commission for the investment bank, L: is after listing purchases of the IPO shares, A: is biased analyst recommendation, and S: is spinning. IPO allocations can be tied to future corporate business for the banks. Underwriters may allocate underpriced shares to managers of potential firms to be listed in the near future. Rent seeking behavior other than information asymmetry may be an important reason to explain underpricing in Asian IPOs.

Regulatory changes on IPO process serve as a quasi-natural experiment to study
the impact of regulation shocks on IPO performance. Specifically, one can use a difference–in–differences method to identify the causality effects between the key explanatory variable and IPO performance.

Some countries are developing pre–markets for private firms to trade before IPOs. Trading before IPO can reduce valuation uncertainty. Trading information at pre–market can help set offer price and predict post–market prices. IPO pricing efficiency can be improved and underpricing should be decreased.

IPO will be going to be a research concern. IPO markets are an important sector in Asian capital markets. The development of IPO markets leads growth of economy. We expect to see more studies on Asian IPOs.

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