Pre-IPO Analyst Coverage: Information Production or Hype?

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Abstract

Until recently, analyst coverage before an IPO was common in China. We find that analyst coverage and optimism for an IPO before trading starts are positively related to its offer price revision, first-day return, and long-run return. Analysts with connections to the underwriter are more likely to cover an IPO, and they provide more optimistic earnings forecasts. The positive impact of pre-IPO analyst research on IPO pricing remains after connected analysts are excluded. Unlike the U.S. and other markets, higher offer price revisions are associated with lower initial returns in China. Our findings have implications for regulatory policy.

Keywords: Analysts, IPOs, Primary Market, Offer price revision, Underpricing, China

JEL classification: G14, G15, G18, G24

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I. Introduction

Initial public offerings (IPOs) are persistently underpriced around the world.[1] An important reason for this underpricing for both developing and developed markets is information asymmetry. Analysts are known to play an important role in producing and disseminating information in securities markets. In the U.S., pre-IPO coverage by affiliated analysts has generally been prohibited, and pre-IPO analyst coverage has been almost non-existent. In China, however, pre-IPO research was common until recently. We use China's IPOs to address the question of whether primary market (pre-IPO) analyst research helps improve the pricing of IPOs. More specifically, we try to answer some simple yet fundamental questions: Does primary market analyst research matter? If analysts indeed have significant influence over IPO pricing, do they produce useful information, or do they mostly just hype the stock? Do analysts' reputational concerns dominate? Alternatively stated, does pre-IPO analyst research do more good than harm?

It is challenging to evaluate the potential impact of pre-IPO analyst research in the U.S. market since to date few analysts publish their research before a firm's IPO. To ensure equal information access, in the U.S. market quiet period restrictions limit public statements to information that is already in the written prospectus filed with the Securities and Exchange Commission (SEC), although some oral communications to institutional investors are permitted. The quiet period for a U.S. IPO, which starts from the time a firm is "in registration," has varied from 25 to 40 calendar days after the IPO until a reduction to 10 days in 2015.[2] Whether quiet period restrictions provide the proper balance between information production and limiting

[1] See, for example, Table 1 of Jia, Kanagaretnam, Lim, and Lobo (2024).

[2] See FINRA Rule 2241, Section (b)(2)(I), which became effective in September 2015. The rule reduces the quiet period to a minimum of 10 days following the date of an initial public offering. The regulatory restrictions also apply to oral statements to the general public. Oral statements made to institutional investors are permissible. Note that quiet period restrictions in the U.S. do not prevent unaffiliated brokers, investment banks, and other research houses from publishing their research on an IPO.

hype remains debatable. Indeed, the May 2012 Facebook IPO started a new round of debate about this regulation.[3] Many argue that the quiet period restrictions could "provide institutional investors with an informational advantage over ordinary investors" and "inhibit price discovery in the IPO process."[4] As a response to such concerns, including inquiries from the U.S. Congress, as well as a part of the rulemaking for implementing the 2012 JOBS Act, the SEC and FINRA issued new rules governing communications during IPOs.[5] Note that, although the U.S. quiet period restrictions were lifted or relaxed in 2012 and 2015, industry practice continues to be that unaffiliated analysts generally do not initiate coverage, and affiliated analysts wait 25 days before initiating coverage, for IPOs in the U.S. It is beyond the scope of this paper, but we suspect that path dependency plays a role in such practices and changes will happen slowly. How to encourage and regulate information production, including analyst research, at the time of an IPO is still of importance, as it probably always has been.

Pre-IPO analyst research can either help or hinder IPO price discovery. For China's IPOs, as well as other markets, the decision for an analyst to cover an IPO is strategically driven by three interconnected forces within the inherent information asymmetries of the primary market. These different incentives affect the role of analysts in providing information to the market. First, brokerage firms actively cultivate relationships with institutional asset managers by providing IPO coverage. Institutional clients of the brokerage firm can gain additional insights by talking to the

[3] Immediately prior to the IPO, Facebook made oral disclosures to some institutional investors that it was having difficulty monetizing usage that occurred on mobile phones, used by a growing percentage of its users. This difficulty was not disclosed publicly until later, and the stock price fell by 50% from its offer price during the next four months.

[4] See page 17 of former SEC Chairman Mary Schapiro's letter to Congressman Darrell Issa on August 23, 2012.

[5] See https://www.sec.gov/spotlight/jobs-act.shtml for more information on the JOBS Act. The Act significantly expands the role of analysts working for the underwriters of an EGC's IPO ("EGC-affiliated analysts"). Crucially, it permits them to attend pitch meetings and due diligence sessions alongside investment bankers, and to interact with potential investors at the bankers' request—all before the IPO occurs. Dambra, Field, Gustafson, and Pisciotta (2018) find that these analysts initiate coverage that is more optimistically biased.

analyst covering a given firm. We expect that this reason would incentivize analysts to produce information to improve IPO market efficiency, and the incentive would be stronger when institutional investors express greater interest in a stock.

Second, analyst coverage can also be influenced by institutional investors' expressed interest in a stock without providing new information. For the Chinese IPO market, indications of interest from institutional investors for an IPO, which is often referred to as offline subscriptions, are available to securities firms during the IPO pricing process.[6] Rather than producing new information, analyst coverage can simply reflect such institutional demand. That is, analysts can serve as information intermediaries and use their coverage to reduce search costs for the market. This role for analyst coverage is consistent with the limited attention argument by Liu, Lu, Sherman, and Zhang (2023). Here, we would expect analyst coverage to reflect institutional demand without producing new information.

Third, analysts and brokerage firms also have incentives to be players in driving investor sentiment. This incentive can be especially important as retail investors play a large role in China. As a result, analysts could amplify prevailing market sentiment – potentially through biased research – to generate trading commissions, thereby hyping valuations and misleading retail investors about fundamental value.

Pre-IPO research coverage was very active for China's IPOs during 2019-2012. For the 859 Chinese IPOs in our sample during this period, the average number of analysts covering a stock before its first trading day is 10.63, and it ranges from zero to 28 brokers. Over 98% of the IPOs had pre-IPO analyst coverage. This active pre-IPO research coverage provides a unique opportunity for researchers to shed light on the role of analysts for arguably one of the most opaque

[6] Indications of interest from retail investors are referred to as online subscriptions. We provide detailed discussions of institutional background in Section II.

security types – IPOs.

We acquire detailed information on analyst research for 859 IPOs in the Chinese market from 2009 to 2012, a period during which the China Securities Regulatory Commission (CSRC, China's counterpart to the U.S. SEC) did not impose price caps on IPO offer prices. There are three key dates for an IPO in China: the filing date, the pricing date, and the trading date. The three dates refer to when the IPO application is filed with the CSRC, when the offer price is determined, and when the stock starts trading, respectively. Unlike IPOs in the U.S., for which there is typically only one evening between pricing and listing/trading, there are typically a few days between the pricing date and the trading date for China's IPOs. In order to differentiate the effects of analyst research on offer price and initial returns, we categorize pre-IPO analyst reports into pre- and post-pricing date reports. We do not include reports issued after the trading date. It is reasonable to argue that only the reports issued before the pricing date affect the offer price. The reports issued on or before the trading date presumably can affect initial returns. Accordingly, we construct measures of pre- and post-pricing date analyst coverage and optimism, where coverage is measured using the number of brokers providing research, and optimism is measured using the industry-adjusted earnings/price (E/P) ratio based on earnings forecasts. We use the industry-adjusted E/P ratio because a more optimistic earnings forecast results in a higher E/P ratio. Unlike the U.S., for our sample period, the CSRC requires that IPO candidates have positive pre-IPO earnings, and it is rare for analysts to forecast negative earnings, allowing the use of E/P ratios.

We first examine how analyst coverage and optimism affect offer price revisions. The offer price revision for an IPO is defined as the percentage change from the expected offer price, which we infer from the detailed descriptions of the use of proceeds required in China, to the final offer price. For U.S. IPOs, the literature uses the mid-point of the file price range as the expected offer

price before the underwriter does the roadshow and collects information from investors.[7] In China, the issuing firm and its underwriter do not report such a price range in their initial filings with the CSRC. Instead, an IPO prospectus contains detailed information on the proposed investment project(s) that the IPO proceeds will be used for. In other words, the proposed investments essentially provide an estimate of the proceeds that the issuing firm expects to raise. We then divide the proposed investments by the number of shares for the IPO to get the expected offer price, and use the actual offer price to calculate the offer price revision. The average offer price revision in our sample is 140%. This number is vastly greater than the average for the U.S. We do not see reasons, however, for this estimate to exhibit any cross-sectional patterns that would prevent this estimate from being a useful starting point to calculate offer price revisions.

After controlling for firm and issue characteristics, we find that pre-pricing date analyst coverage and optimism each have statistically significant positive impacts on offer price revisions in most specifications. Our estimates indicate that a one standard deviation increase in the number of brokers covering an IPO before the pricing date (3.61 brokers) from the mean (7.70 brokers) is associated with a 6.88% increase in the offer price. For pre-pricing date optimism, a one standard deviation increase (2.83) in the industry-adjusted E/P ratio measure, reflecting a higher, more optimistic earnings forecast, is associated with a 73% higher offer price. Both of these estimates are statistically significant. Economically, these estimates suggest a substantial economic impact of analyst coverage on the offer price. For example, the 6.88% increase in the offer price that is associated with coverage by a one standard deviation increase in the number of analysts represents an increase of 58.9 million Chinese Yuan (equivalent to US$9.37 million based on the December 31st, 2012 exchange rate of 6.29) in offer proceeds for an average IPO in our sample.

[7] In recent years, most U.S. IPOs set a file price range on a Friday and begin their road show the following Monday with the offer price set no later than the middle of the next week, less than two weeks after setting the file price range.

We also analyze the first-day return, measured from the offer price to the first-day market closing price. We use first-day return, underpricing, and initial return interchangeably in the paper. We find that the post-pricing date number of analysts that initiate coverage of an IPO has an insignificant impact on initial returns. The coefficients on post-pricing date optimism are positive and statistically significant in regressions with initial return as the dependent variable. Economically, a one standard deviation increase in this optimism measure implies that the first-day return will be 6.6% higher (e.g., from 35.1%, which is the mean, to 41.7%).

An interesting and important result for IPOs in China is a negative relation between offer price revisions and initial returns. For IPOs in the U.S. and many other markets, an upward price revision is a reliable predictor of a higher first-day return. This empirical pattern is the well-known partial adjustment phenomenon (Hanley (1993), Loughran and Ritter (2002), Jenkinson, Morrison, and Wilhelm (2006), Kutsuna, Smith, and Smith (2009), and İnce (2014)). For the 859 IPOs in our sample, the offer price revision has a statistically significant negative effect on initial returns, suggesting that the offer price adjustment is more than complete in China.

Pre-IPO analyst research can be subject to endogeneity concerns. For example, the number of analysts covering an IPO and their earnings forecasts may be affected by how "hot" an IPO is expected to be, and potential omitted variable bias can arise if we fail to control for important variables predicting a hot IPO. In Two-Stage Least Squares (2SLS) regressions, we use a dummy variable indicating the implementation of the *Provisional Rules for Publishing Securities Research Reports* (effective on January 1, 2011) as an instrumental variable for analyst coverage decisions. The regulations in this policy affect analyst incentives and are thus relevant. The timing of this policy implementation is largely exogenous. We also employ two more instrumental variables: the number of days of the interval from the filing of the prospectus to the pricing date of the IPO for

pre-pricing analyst coverage, and the length of the interval from the pricing to the listing date of the IPO for post-pricing analyst coverage. Note that an analyst is more likely to provide coverage for an IPO during a particular interval when she has more time, and the length of either of these two intervals is thus relevant. Due to China's bureaucratic IPO approval procedures, the dates of pricing or listing exhibit plausible exogeneity relative to firm-specific characteristics or strategic coverage decisions. Overall, the results suggest that our findings are robust to addressing the potential endogeneity concern of analyst coverage.

Our results suggest that pre-IPO analyst research has a significant influence on the pricing of IPOs. But do analysts produce/disseminate useful information, do they just aggregate public information, or do they try to hype the stock? Furthermore, will the lead underwriter of an IPO use its connections to boost analyst coverage for its IPO? Will such connections result in more optimistic research? These issues are important for assessing the tradeoffs underlying regulations on pre-IPO analyst research because the goal of such regulations is to encourage information production but limit market manipulation. We shed light on these issues with three different sets of results.

First, we examine the relations between analyst research and investor demand. We find that pre-pricing analyst coverage has a statistically significant positive association with offline (institutional) oversubscription for an IPO. Conversely, we find no significant association between pre-pricing analyst coverage and online (retail) oversubscription. Moreover, we investigate how the change from pre-pricing date optimism to post-pricing date optimism is related to oversubscriptions. We find that both offline and online oversubscriptions are not statistically significantly associated with changes in optimism, suggesting that analysts do not update their forecasts in response to investor demand. Taken together, these findings provide empirical support

for our interpretation that analysts primarily serve an information production role for sophisticated market participants rather than engaging in hype generation targeting retail investors.

Second, we calculate the one-, two-, and three-year buy-and-hold returns (BHRs) for IPOs in our sample starting from the end of the first month after trading started. We find that pre-IPO analyst research has predictive power for IPO long-run returns. The coefficients on post-pricing analyst coverage are positive and marginally statistically significant when it is used to predict the one- and two-year BHRs. The pre-pricing date analyst coverage also has marginally statistically significant predictive power for the two- and three-year BHR. The market is unlikely to underreact to hype in the long run. Thus, the weakly positive relation between pre-IPO analyst coverage and long-run returns again suggests that the pre-IPO analyst research produces information.

Finally, we use cross-ownership among investment banks to examine how such cross-ownership affects analyst coverage on IPOs. It is common for China's investment banks to have cross-ownership – one shareholder can own one investment bank while being a large shareholder of another investment bank. We call analysts who are affiliated with investment bank A *Relationship Analysts* for investment bank B if investment banks A and B have such cross-ownership. If hype is a concern for pre-IPO analyst coverage, it is more likely to happen with relationship analysts because quid pro quos can be more easily coordinated with connected banks. We indeed find that relationship analysts are more likely to cover an IPO underwritten by a connected investment bank before the pricing date, but their coverage is not more optimistic. The effects of analyst coverage on offer price revisions and initial returns remain reliably positive, even if we remove all research coverage from relationship analysts. This robustness test provides further support for the idea that pre-IPO analyst research is informational, although hype is also likely to exist.

Information production is critical for the pricing of IPOs as modeled by, for example, Sherman (2005). The literature suggests that pre-IPO trading, which exists for some European and Asian markets and is largely driven by retail investors, can be informative (Löffler, Panther, and Theissen (2005), Aussenegg, Pichler, and Stomper (2006), Cornelli, Goldreich, and Ljungqvist (2006), Derrien and Kecskés (2007), Dorn (2009), and Chang, Chiang, Qian, and Ritter (2017)).

The existing evidence on IPO analyst coverage only has an indirect connection to the debate regarding information production regulations because the existing research using U.S. data is based on activities in the aftermarket after the quiet period ends (see, e.g., Michaely and Womack (1999), Bradley, Jordan, and Ritter (2003, 2008), Cliff and Denis (2004), James and Karceski (2006), Degeorge, Derrien, and Womack (2007), and Liu and Ritter (2011)). Our research directly examines analyst behavior before a firm goes public.

Three related Chinese IPO papers use the same sample period that we use. Cao, Leng, Liu, and Megginson (2017) find that the dispersion in institutional bids is positively associated with first-day returns. Chemmanur, Ma, Wu, and Yu (2025) find that institutions' bidding contains information about the intrinsic values of IPO firms, and that underwriters use such information in IPO pricing. Qian, Shao, and Liao (2024) examine the underwriter-affiliated analyst's investment valuation report that is distributed to institutional investors during an IPO and find that affiliated analysts make highly overoptimistic forecasts. We complement these papers and provide the first comprehensive evidence on the role of publicly available analyst research before an IPO is priced and traded.

Our evidence is relevant and helpful for understanding the information production issues beyond China's IPO market. Although there are still many institutional differences between China and developed markets such as the U.S., analysts in China are also affiliated with securities firms

that engage in brokerage and investment banking services. Research analysts in China also try to balance their own reputational concerns against pressure to attract trading and investment banking business for their affiliated firms.[8] Our evidence for China's pre-IPO analyst research suggests that analysts' reputational concerns dominate and that they produce useful information.

II. Institutional Background

A. IPOs in China

Our sample period, spanning 2009 to 2012, constitutes a distinctive regulatory phase in China's IPO market, representing the longest suspension of administrative pricing controls since the establishment of the Shanghai (SSE) and Shenzhen (SZSE) stock exchanges in 1990 and 1991, prior to the recent relaxations of such controls beginning in 2019.[9] In most periods, the CSRC either explicitly or implicitly has set price-earnings (P/E) ratio caps that constrain offer prices.

IPOs in China operate under a hybrid auction mechanism mandated by the CSRC, featuring a dual-tranche allocation system designed to balance institutional price discovery with broad retail participation. The offline institutional tranche functions as a uniform-price auction targeting qualified institutional investors, including mutual funds, securities firms, insurance companies, and trust firms. Participants submit binding bids specifying both price and quantity during a standardized three-day bookbuilding and roadshow window. Crucially, underwriters exercise no discretion over allocations, unlike the bookbuilding procedure widely used in the U.S. and many other countries. After collecting competitive bids, underwriters and issuers collaboratively set a

[8] Research is generally supported by investment banking and trading activities within a brokerage or investment banking firm, rather than being paid for directly. See, e.g., Cliff and Denis (2004), Irvine (2001), Jackson (2005), Niehaus and Zhang (2010), and Michaely and Womack (1999) for descriptions on how research is paid for and the resulting biases in research. Recently, European regulators have introduced restrictions on paying for research indirectly; MiFID II became effective on January 3, 2018.

[9] We provide a detailed description of the recent developments of China's IPO market in an online appendix.

final offer price below the market-clearing equilibrium. Valid bids (those at or above the final offer price) receive shares either pro rata to bid size (predominantly until November 2010) or via lottery allocation (implemented on SZSE after November 2010). The lottery system reduces the number of successful bids but increases allocation sizes per recipient, aiming to enhance bidding discipline. The resultant offer price from this institutional auction is then used for the online retail tranche, where allocations are exclusively determined by lottery when there is excess demand. IPOs are routinely oversubscribed in both tranches, but regulatory provisions ensure that retail investors receive no less than 50% of the total shares for an IPO.

The IPO process follows a structured timeline, typically culminating in trading a little more than two weeks after the initial announcement. The sequence of events commences with the publication of the offering announcement and underwriter research reports on Day T-6. Institutional bidding and price discovery occur from Days T-5 to T-3. The final offer price is established on Day T-2. Retail subscriptions and deposit collections from both institutional and retail investors take place on Day T. Allocation announcements and refunds for unfulfilled orders occur between Days T+1 and T+3. Trading starts about ten business days after the pricing date, with institutional allocations subject to a mandatory three-month lockup period for offerings prior to June 2012. This hybrid structure, operating without P/E caps, facilitates unprecedented market-driven price discovery while maintaining regulatory oversight through predefined allocation rules and tranche segregation (Qian, Ritter, and Shao (2024)).

The CSRC used guidance and written rules or regulations to effectively limit the P/E ratio (based on the offer price) to be below certain levels through 2008. IPOs were suspended beginning in October 2012, ending our sample period. IPO activity resumed in December 2013. The CSRC reinstated price controls by implementing a rigid, albeit unwritten, P/E cap of 23 on all IPOs after

June 2014. These price controls were largely removed when significant IPO regulatory reforms started in 2019. The SSE's Science and Technology Innovation Board (the STAR Market) was launched in July 2019 to pilot a U.S.-style registration system, in which regulators do not consider valuations in deciding whether to approve IPOs. The SZSE's ChiNext market adopted similar registration-based requirements in August 2020, as did the Beijing Stock Exchange in November 2021 when it opened. The A-share market, including the main boards of the SSE and SZSE, transitioned fully to a comprehensive registration-based system on February 17, 2023. A key feature of the registration-based system with the aforementioned regulatory reforms is that the IPO offer price is determined by the underwriter and issuer via auctions, without regulatory impositions of any price caps.

In recent years, pre-IPO analyst coverage has dramatically fallen. Because investors have been willing to buy the vast majority of IPOs at prices higher than the price that yields a P/E ratio of 23, there has been severe underpricing, with the average first-day return exceeding 100% in 11 of the 13 years from 2014 to 2025, including recent years when P/E ratio caps have no longer been present for most IPOs. Because of the near certainty of a high return on IPO shares, both the offline and online trances have seen oversubscription ratios averaging in the thousands since 2012. Consequently, the extremely low probability of obtaining shares, combined with the almost guaranteed profit opportunity, has fundamentally diminished the incentive for institutional investors to demand information from analysts.

Furthermore, because of regulatory preferences for technology-focused firms, and relaxed profitability requirements, new listings in recent years have been predominantly smaller companies in high-tech sectors.[10] This shift also drastically reduces analyst incentives for pre-IPO

[10] Despite the registration system under which the market forces supposedly determine which firms go public, after 2022, the CSRC has approved few IPOs by firms that are not on the "Made in China 2025" list of strategic industries.

coverage. Specifically, for IPOs during 2019-2024, another period without regulatory pricing controls for most IPOs, 87.4% of offerings had zero pre-IPO analyst coverage, while only 8.33% had a single analyst report, and fewer than 5% had coverage by more than one analyst. This lack of pre-IPO coverage for IPOs under the new regime after July 2019 starkly contrasts with that for the IPOs in our sample period of 2009-2012, where over 98% of IPOs had multiple pre-pricing/pre-listing coverage.[11]

B. Sell-side Analysts in China

The financial analyst profession formally emerged in China during the 1990s. Securities companies began establishing dedicated research departments to explore their role and develop research capabilities. Early milestones included Wanguo Securities hiring the first cohort of securities researchers in 1993 and Junan Securities building a research team exceeding 100 analysts in 1996. Detailed regulations on the dissemination of securities research, such as publications of research reports, remained underdeveloped during this period. Analysts were primarily employed by securities firms offering integrated services (investment banking, brokerage, and asset management), though some worked for specialized investment advisory firms.

A pivotal development that facilitated the growth of securities research was the establishment of the mutual fund industry in 1997. Similar to soft dollar payments in the U.S., the commissions on trades by mutual funds provide a revenue stream that is linked to sell-side research. With the development of securities investment consulting services, the expansion of institutional investors, and the growth of commission-related income, China's securities research institutions have gradually formalized.

The licensing requirements for financial analysts were implemented in 1999. Additional

[11] We provide detailed summary statistics for IPOs after our sample period in the online appendix. We also discuss in detail the reasons for the scarcity of analyst reports on tech companies on the STAR Market and other stocks.

significant regulatory steps were taken in 2000: The Securities Association of China (SAC) instituted a disciplinary committee to supervise analysts (Huyghebaert and Xu (2016)) and formed the Securities Analyst Professional Committee (July 5, 2000), initiating formal self-regulations.

A significant event occurred on February 16, 2007, when the CSRC issued the *Circular on Improving the Trading Seat System for Securities Investment Funds and Related Issues*.[12] This document encouraged funds to lease trading seats from securities companies with sound financial conditions, standardized operations, and strong research capabilities, thereby directly linking fund commission sharing to securities firms' research capabilities for the first time.

The CSRC then put in place explicit formal regulations on securities research, titled "*Provisional Regulations on the Publication of Securities Research Reports*."[13] The rules, which were published on October 12, 2010 and became effective on January 1, 2011, represented a major institutional achievement. Comprising 23 articles, they provide comprehensive guidance and requirements on the publication process, covering business models, workflow management (explicitly detailing requirements for topic selection, writing, quality control, compliance review, and publication), and compliance management. The key provisions addressed critical areas such as information barriers ("firewalls"), crossing firewalls, and quiet periods, aligning with international regulatory practices. The implementation of these regulations provided a robust framework, standardizing and promoting the development of the securities research report publication business in China, while further strengthening conflict-of-interest management.

III. Data and Descriptive Statistics

[12] See https://fg.amac.org.cn/governmentrules_3854/zcgz_gfxwj/gfxwj_gmjj/gfxwj_gmjj_qt/201912/t20191222_24778.html for the regulation announcement.
[13] https://www.gov.cn/gongbao/content/2011/content_1808619.htm

A. Sample Construction

Our data are from the China Stock Market & Accounting Research (CSMAR) database and several other sources. We start with a sample of 885 IPOs from 2009 to 2012 from the CSMAR database. We choose the 2009-2012 sample period because, until recently, this is the period for China's IPOs during which the CSRC did not have a price/earnings ratio cap for the IPO offer price and had a significant amount of pre-IPO analyst coverage. During our sample period, from May 2012 to September 2012, the CSRC did restrict offer prices to be no more than 125% of the P/E ratio of comparable firms, a much less restrictive limit. It is not clear how many IPOs were affected by this window guidance, but it appears to have had a minimal effect on our empirical results.[14] It is important for the underwriter and the issuing firm of an IPO not to have a P/E ratio cap so that the offer price can reflect pre-IPO information production.

From the 885 IPOs, we exclude 11 financial institutions, 15 firms with shares already traded or being simultaneously listed on the Hong Kong Stock Exchange (H-Shares), and five exchange offers (exchange IPO shares for existing shares of another public company). Because five IPOs appear in two different categories on this exclusion list, the resulting sample consists of 859 IPOs. To investigate the post-IPO performance of these firms, we also retrieve daily stock prices, the market index returns (value-weighted average total returns using all stocks listed on the Shanghai or Shenzhen stock exchanges), and accounting information from the CSMAR database.

One contribution of this paper to future research on China's IPOs is the construction of the expected offer price. For IPOs around the world where bookbuilding is used, the underwriters acquire information from investors and revise the offer price accordingly. The adjustment from the

[14] In addition to combing through published rules and regulations, we also have had numerous discussions with officials at the CSRC, investment bankers, and mutual fund managers. Different sources have confirmed that from 2009 to May 2012, there was no P/E cap on IPO pricing. Furthermore, the CSRC did not require the IPO offer price to be lower than the mean and/or median of bidding prices from investors, including mutual funds.

midpoint of the initial file price range to the final offer price is often used to measure such information acquisition (Hanley (1993)). For China's IPOs, an issuing firm and its underwriter(s) do not report any explicit price range in their filings with the CSRC before the road show, making it difficult to measure information production in the primary market. The issuing firm, however, always reports the proposed investment project(s) for which the proceeds from the IPO will be used. A detailed financing plan will be included if other sources of funding are used. Such investment proposals are approved by the appropriate government agencies before the IPO prospectus is presented to investors during the road show. The proposed investment amount from the IPO can thus be used as a reliable measure for the total expected proceeds. In addition, the maximum number of shares offered for the IPO also has to be approved by the CSRC. For all IPOs in our sample, the maximum approved number of shares has been the final number of shares offered. We thus manually search both the preliminary and final prospectuses for each IPO and retrieve the proposed investment amount and the approved maximum number of shares for each IPO. We use the ratio of the two figures as a measure of the expected offer price.[15]

Data on analyst research coverage is also from the CSMAR database. We only include research reports that are issued no later than the trading date of an IPO. After excluding reports with a missing report date or identity of the broker, we have 8,863 reports covering 848 IPOs. These reports are issued by at least 88 different brokers.[16] Earnings forecasts are the most common item in these reports. All our sample firms were required to have continuous positive earnings

[15] The prospectuses for all IPOs listed on the Shanghai and the Shenzhen Stock Exchanges can be found on CNINFO (https://www.cninfo.com.cn/new/index), a CSRC designated website for disclosing securities information. In China, IPOs include only newly issued shares, and except for large firms, a minimum public float of 25% is required.

[16] The CSMAR Analyst database is similar to the I/B/E/S database. Both databases include forecasts of accounting variables for different fiscal years, as well as stock recommendations. The CSMAR database includes the name and broker ID of the broker for each observation. We count the brokers based on the broker ID. Note that some reports do not include EPS forecasts.

before the IPO.[17] In contrast, Loughran and McDonald (2013) report that only 37% of the firms in their U.S. IPO sample have positive earnings in the year before the IPO. Our research optimism measure is calculated based on earnings forecasts for the current fiscal year (fiscal year 1, or FY1) if the IPO pricing date is at least 90 days away from the end of FY1. If the IPO pricing date is close to the current fiscal year end (within 90 days), we use the forecasts for the next fiscal year. These forecasts are simply referred to as FY1 forecasts for the rest of the paper. Note that our earnings forecasts are from unaffiliated analysts. Although the regulations do not explicitly prevent the lead underwriter from issuing analyst reports before the IPO, we see very few analyst reports from affiliated analysts.[18]

B. Variable Definitions

We study the impact of analysts on the pricing of IPOs, and our dependent variables are two price changes (returns) for an IPO. The first dependent variable, *Offer Price Revision*, is defined as the percentage difference between the expected offer price and the offer price. The second dependent variable, denoted as *IR*, is the initial return for an IPO and is defined as the percentage change from the offer price to the first-day market closing price. We will briefly discuss the construction of the independent variables for the rest of this sub-section. A list of variable definitions is provided in Appendix Table A1.

Our key independent variables are measures for pre-IPO analyst coverage and analyst optimism. We use the number of brokers that issue reports during a particular period of the IPO

[17] For the Shanghai and Shenzhen exchanges, three years of positive earnings are required. For the Shenzhen ChiNext market, one year of positive earnings is required.

[18] Lead underwriters do issue valuation reports before the IPO. These valuation reports, used by Qian, Shao, and Liao (2024), were kept confidential before 2011. After 2011, the lead valuation reports have been made public after the initial price inquiries and before the final offer price is set. These reports from lead underwriters are labeled differently and are not treated as analyst reports. We have a small number of regular research reports from affiliated analysts. These analyst reports are likely to be published in the gray area of the CSRC quiet period regulations. Our results remain virtually the same whether we include these reports or not.

process as a measure of the breadth of analyst coverage for an IPO for that period. To study the impact of analyst coverage on offer price revisions, we use the number of brokers that issue reports before the pricing date, which we call *Pre-Coverage*. We denote the number of brokers issuing reports after the pricing date (but no later than the trading date) as *Post-Coverage*, and the total number of brokers issuing reports until the trading date as *Overall-Coverage*.[19] We link both *Post-* and *Overall-Coverage* to the initial return of an IPO.

Optimism for a particular analyst is calculated from his/her FY1 earnings forecasts.[20] To measure the implied optimism for an earnings forecast for an IPO, we first calculate the implied E/P ratio based on the FY1 estimated earnings per share (EPS) and the latest stock price before the report date of the forecast. For an EPS forecast published before the pricing date, the expected offer price is used. For an EPS forecast published after the pricing date, the offer price is used for the implied E/P ratio.[21] A more optimistic EPS forecast results in a larger E/P. We use the industry-adjusted E/P ratio to measure optimism for a particular analyst report:

$$Optimism = \left(Implied\ {}^{E}/_{P}\ from\ EPS\ Forecast - Industry\ average\ {}^{E}/_{P}\ of\ IPOs\right) \times 100$$

where *Industry average E/P of IPOs* is the average of the implied E/P ratios of pre-IPO EPS forecasts of all the IPOs in the same industry in the past 12 months.[22] We use two optimism

[19] We include analyst reports that are published on the day of listing (trading date) for the post- and overall-coverage measure. The trading date is also the first day of trading for the IPO. We use the day that is the deadline for institutional investors to subscribe to the IPO as the pricing date. This date is also referred to as day *T*.

[20] In unreported analysis, we also use price targets to calculate analyst optimism. The results are consistent with those of earnings forecasts. Note that price targets are likely to be a much noisier measure for analyst optimism since price targets involve the estimation of long-term earnings growth trends. We do not use recommendations because the number of recommendations is low.

[21] In untabulated tests, we use the expected offer price for both pre-pricing and post-pricing optimism and find qualitatively similar results.

[22] IPO firms are classified into 21 industries following the coding system by the CSRC. More specifically, firms in nonmanufacturing sectors are classified based on the first industry code (letter code) while manufacturing firms are classified based on the first two industry codes (both letter and number codes). We use the average implied E/P ratio of all IPOs in the past 12 months if there are less than five IPOs in a particular industry in the past 12 months.

measures, *Pre-Optimism* and *Post-Optimism*. We use the average of pre-pricing EPS forecasts for calculating *Pre-Optimism* and the average of post-pricing EPS forecasts for *Post-Optimism*.[23]

We follow the literature in choosing some of our control variables (see, e.g., Jia, Kanagaretnam, Lim, and Lobo (2024)). The names for these control variables are self-explanatory and their detailed definitions are in Appendix Table A1. We also include some variables that are specific to China's IPO market. Both institutional and retail investors have access to an IPO in China and their respective subscriptions are publicly available. To control for investor demand, we include both *Ln(Offline OverSub)* and *Ln(Online OverSub)*, which are defined as the natural logarithms of oversubscription ratios from institutional (offline) and retail (online) investors during the offering, respectively.[24] For both demand measures, oversubscription is calculated as the ratio of the subscription from a particular group of investors (offline or online) divided by the number of shares offered for that group. *SOE Central* and *SOE Local* are dummy variables for State Owned Enterprises, defined as those with the controlling shareholder of the issuing firm affiliated with the central government or local government, respectively. These variables are included to control for the effect of political connections on IPO pricing (Fan, Wong, and Zhang (2007)).

C. Summary Statistics

We report the summary statistics for issue and firm characteristics for our sample IPOs in Table 1. One noticeable feature about China's IPOs has been high initial returns. The average initial return for the 859 IPOs in our sample from 2009 to 2012 is 35.1%. We also report the

[23] In untabulated tests, we construct a forecast error measure to capture the EPS differences between analysts' forecasts and the realized values. While such measures are not observable at the time of IPO, we find that the pre-IPO research on average is less biased compared to post-IPO analyst forecasts for listed firms. This conservatism – evident across pre-pricing and pre-trading periods – is consistent with the interpretation that analysts prioritize reliable information production during high-uncertainty IPO events rather than engaging in hype.

[24] Institutional investors can participate in the online part as well, but their participation is uncommon. See Chemmanur et al. (2025) and Cao et al. (2017).

quarterly number of IPOs and the average initial returns for 2009-2012 in Figure 1. Although the average initial return of 35.1% during 2009-2012 is greater than in the U.S. and most other markets (initial return numbers for 55 countries are available at https://site.warrington.ufl.edu/ritter/ipo-data/), average initial returns for IPOs in China have been even higher in every other year from 1990-2025, other than 2013, which had no IPOs.[25]

The average offer price revision, measured from the CSRC-approved proceeds per share (i.e., the expected offer price) to the offer price, is 139.5% for our sample. This average increase is much higher than the comparable U.S. figure. For example, Hanley and Hoberg (2010) report an average price adjustment of 4.3% for the 1996-2005 period. Note that not all IPOs in our sample have positive price revisions. The minimum offer price revision for our IPO sample is -61.9%.

The large magnitude of offer price revisions does not make the expected offer price an invalid reference point. An issuing firm has to go through a lengthy process to get the proposed investments approved, and the proposed investments and hence the expected offer price become a useful anchor point for investors to value the company. Although the magnitude of the adjustments from the expected to the final offer price is large, we do not see any cross-sectional patterns that make the expected offer price an invalid starting point to measure premarket information production. Furthermore, our expected offer price measure is also consistent with file price ranges when such comparisons are available due to simultaneous listings on multiple exchanges. For example, Metallurgical Corporation of China, Ltd. went public in September 2009 on both the Stock Exchange of Hong Kong (SEHK) and the Shanghai Stock Exchange (SSE). In its prospectus for the SEHK, the initial file price range is HK$6.16-6.81. Using the midpoint of HK$6.49, the company reports that the amount of expected proceeds is HK$15,988 million. This amount is the

[25] See the online appendix for information on number of IPOs and initial returns for these years.

same as the amount of investment for the three projects reported in the prospectus for its listing on the SSE. That is, the implied offer price based on proposed investments for the IPO proceeds and the number of IPO shares, which we call the expected offer price, is the same as the actual midpoint of the file price range for the listing on the SEHK.

During our sample period of 2009 to 2012, private firms account for a large portion of IPOs. Many state-owned enterprises had already gone public before 2006. As shown in Table 1, only 9% of our IPOs are controlled by either the central or local governments.

We report the summary statistics on pre-IPO analyst coverage and optimism in Table 2. The average number of brokers covering an IPO before listing is 10.6 (the median is 10), reflecting the unique active primary market analyst coverage of IPOs in China. Neither Chinese nor U.S. quiet period regulations prohibit recommendations by independent analysts. In the U.S., these reports are rare for IPOs, whereas in China they were common during our sample period. A likely reason for the difference is that both retail and institutional investors in China do not depend on being a client of an underwriter to get an allocation of shares in an IPO. For both institutional and retail investors, if there is excess demand, shares are allocated pro rata or by lottery with no underwriter discretion involved. Thus, when institutional demand is high, a brokerage firm has an incentive to cover the stock prior to the IPO even though it is not part of the underwriting syndicate.

Figure 2 provides the distribution of analyst coverage across IPOs. The histogram reveals that zero-coverage instances are exceptionally rare: Only seven IPOs have zero overall analyst coverage (Panel A), 13 have no pre-pricing coverage (Panel B), and 35 lack post-pricing (pre-trading) coverage (Panel C). Coverage measures the number of analysts who initiate coverage.[26]

Analysts working for the underwriters have an incentive to hype an IPO in order to achieve

[26] The correlation between pre- and post-pricing coverage stands at 0.32, indicating a moderate positive relationship.

higher IPO pricing. Generally speaking, analysts have incentives to be excessively optimistic in their research reports for three reasons (Bradley, Jordan, and Ritter (2008)). First, if issuing companies prefer to hire investment banking firms that provide positive coverage for future deals, analysts have an incentive to cover a company and make optimistic forecasts. Second, if management is unwilling to talk to analysts who have a negative recommendation on the firm, a pessimistic analyst is put at an informational disadvantage. Third, owners of stock want an analyst to be publicly optimistic. This latter incentive may have been especially strong in China during our sample period because short selling was prohibited until March 2010, and it is still prohibited for the three months after an IPO.

Table 2 also reports analyst optimism based on FY1 EPS forecasts. We use the industry average of implied E/P ratios of all pre-IPO analyst forecasts, both before and after the pricing date, to account for any industry-specific component. The averages for *Pre-* and *Post-Optimism* measures are 0.31 and 0.19, respectively. Our optimism measure does not take into account differences in growth rates between stocks. For cross-sectional comparisons, IPOs with a greater growth rate will, in general, have higher prices and higher P/E ratios, which will result in lower optimism measures since analyst optimism is the adjusted E/P ratio. Because growth companies generally have more price revisions and greater underpricing, this will create a bias against us.

IV. Pre-IPO Analyst Research, Offer Price Revisions, and Initial Returns

The literature suggests that analyst research in the secondary market is informative and affects stock prices and corporate activities (see, e.g., Brennan and Subrahmanyam (1995) and Derrien and Kecskés (2013)). In the primary market, greater analyst following can produce more information and reduce information asymmetry, which in turn reduces a firm's cost of capital by

allowing a firm to go public at a higher offer price. Furthermore, pre-IPO analyst coverage can also increase the stock price by increasing the investor pool (Merton (1987) and Zhang (2004)) or by attracting more media coverage and hence more attention from unsophisticated investors (see, e.g., Bhattacharya, Galpin, Ray, and Yu (2009)). More optimistic coverage can induce greater demand and result in a higher stock price (see, e.g., James and Karceski (2006)). Overall, analysts can have a significant impact on IPO pricing because of their information production and marketing efforts. We thus hypothesize that more research coverage and greater optimism will have a positive impact on the first-day market closing price and hence a positive impact on the initial return of an IPO if the offer price is not proportionally increased.

Since analyst research is publicly observable, the underwriter and the issuing firm can condition the offer price on pre-issue analyst reports. In particular, when coverage is more extensive and/or optimistic, the lead underwriter anticipates that the institutional investors will be more willing to accept a higher offer price. Thus, we posit that an increase in analyst coverage and optimism before the pricing date will have a positive impact on offer price revisions.

In this section, we test the above hypotheses by examining the relations between pre-IPO analyst research and offer price revisions and initial returns.

A. Analyst Research and Offer Price Revisions

We first investigate the relations between pre-pricing date analyst coverage/optimism and offer price revisions. The results are reported in Table 3. We include *Ln(1+Pre-Coverage)*, which is the natural logarithm of one plus the number of brokers covering an IPO before the pricing date, in Regressions (1) – (3) and (5). We further include analyst optimism in Regressions (4) and (5). Neither industry nor year fixed effects are included in Regression (1). Regression (2) includes year fixed effects, and Regressions (3) – (5) include both industry and year fixed effects.

The IPO market condition (measured as *IR[-30,Pricing]*, the average initial return of all IPOs that were listed during the 30 calendar days before the pricing date) has a positive coefficient in all regressions and is statistically significant in Regressions (1), (4), and (5). The positive coefficient on *IR[-30,Pricing]* suggests that a favorable IPO environment gives the underwriter of an IPO more room to revise the offer price upward. The coefficient on the overall market condition (*MktRet[-30,Pricing]*, the return on the composite market index for the 30 days before the pricing date) is statistically insignificant in all regressions, in contrast to the positive coefficients typically found in U.S. studies.

The coefficient on *Ln(Assets)* is negative and statistically significant at the one percent level in all regressions, consistent with Aggarwal and Wu (2025). The statistically negative coefficient on *Overhang*, the number of shares retained divided by the number of shares offered, in Regressions (1) through (3), is consistent with a negatively sloped demand curve – a greater share overhang will depress the price expectation of an IPO given that more shares will become available when the share lockup expires.[27] The share overhang coefficient becomes insignificant, however, when we also include analyst optimism in Regressions (4) and (5).

Table 3 also shows that IPOs with higher earnings (higher *ROE*) have more positive offer price revisions, but underwriter reputation (measured as market share, *Lead MktShare*) seems to have little impact on offer price revisions. We also control for the identity of the controlling shareholder to examine whether firms with connections to the government have greater price revisions. Inconsistent with Fan, Wong, and Zhang (2007), the coefficients on *SOE Central*

[27] Liu et al. (2023) theoretically differentiate the retention (the ratio of shares retained by the existing owners to the total number of shares before the IPO) from expansion (the ratio of new shares being issued to total post-IPO shares). However, our sample period (2009–2012) presents a critical institutional constraint: secondary share sales by existing owners were explicitly prohibited by Chinese regulators during these years. The first regulatory framework permitting such sales was introduced in December 2013. Even post-reform, secondary offerings remain exceptionally rare.

Dummy and *SOE Local Dummy* are statistically insignificant in all regressions. The different impact of government ownership in Fan et al. (2007) and our regressions might be due to the difference in how we measure political connections. Fan et al. (2007) measure whether the CEO has political connections, and the two dummy variables that we use only capture the political identity of the controlling shareholder. Furthermore, in our sample period fewer issuers have government ownership, and these IPOs may have lower growth prospects.

The coefficients on the key independent variable, *Ln(1+Pre-Coverage)*, are positive and statistically significant in all regressions except Regression (3). The coefficients on the other key independent variable, *Pre-Optimism*, are positive and highly significant, with and without controlling for the breadth of analyst coverage.[28] Economically, if we use Regression (5) as an example, a one standard deviation increase in the number of brokers covering an IPO before the pricing date (3.61 brokers) from the mean (7.70 brokers) is associated with a 6.88% ($19.81 \times [\ln(1 + 7.70 + 3.61) - \ln(1 + 7.70)]$) increase in the offer price. For an average IPO with an expected offer price of ¥11.87 and issuing 71.9 million shares, the 6.88% increase in the offer price represents an increase of 58.9 million yuan (US$9.37 million based on the 2012 exchange rate) in IPO proceeds. For earnings forecast optimism, the coefficient of 25.80 on *Pre-Optimism* suggests that a one-standard-deviation increase in *Pre-Optimism* is associated with a 73.0% (25.80×2.83) higher offer price revision. This effect is also economically very significant. Note that the adjusted R^2 increases substantially when *Pre-Optimism* is included as an explanatory variable, suggesting that higher EPS forecasts are strongly associated with higher offer prices. These results suggest that greater analyst coverage and more optimistic research enable the lead

[28] The correlation between *Ln(1+Pre-Coverage)* and *Pre-Optimism* is very low and slightly negative (-0.03). We also do not have stability concerns due to high correlations among other independent variables. The drop of significance for *Ln(1+Pre-Coverage)* in Regression (3) is due to statistical power for adding the fixed effects.

underwriter of an IPO to adjust the offer price further upwards.

Note that some of our variables, such as the offer price revision, have high standard deviations. To make sure that our results are robust, we also use bootstrap estimates for calculating the standard errors and t-statistics for the regressions in Tables 3 and 4. To obtain sufficient accuracy, we use 500 bootstrap repetitions (Andrews and Buchinsky (2000)). The statistical significance of the coefficients on our key variables remains virtually the same.

B. Analyst Research and Initial Returns

In this subsection, we examine the relations between pre-IPO research and initial returns. Since initial returns are measured as the price difference from the offer price to the first-day market closing price, we distinguish analyst research before and after the pricing date in studying the relations between primary market research and initial returns.

The regression results are reported in Table 4. We include industry and year fixed effects in all regressions. We report the baseline regression with only the control variables in Regression (1). These control variables are generally well behaved, and their coefficients are consistent with what has been reported in the literature. Both lagged IPO returns and lagged market returns, as captured by *IR[-30, Pricing]* and *MktRet[-30, List]*, have a statistically significant positive impact on the initial returns. It is noteworthy that, in Table 3, offer price revisions do not adjust to market returns, resulting in a large effect of market returns on initial returns in Table 4. Large and highly profitable firms, as indicated by the coefficients on *Ln(Assets)* and *ROE*, are less underpriced. This pattern is expected since these firms are less risky and have less information asymmetry. Share overhang is positively related to initial returns, albeit insignificant in some regressions, showing a weaker effect than in studies using U.S. data (Bradley and Jordan (2002)). Lead underwriter reputation, as captured by *Lead MktShare,* has a significantly negative impact on initial returns. IPOs with high

investor demand and larger oversubscriptions have more would-be investors who do not get share allocations. If they then buy in the aftermarket, this demand explains the reliably positive coefficients on *Ln(Offline OverSub)* and *Ln(Online OverSub)*. IPOs controlled by local governments are more underpriced.[29]

The key variables of interest are the analyst-related measures. In Regression (3), we include the number of brokers making recommendations after the pricing date through the trading date, *Ln(1+Post-Coverage)*. This variable has a positive but insignificant coefficient. In Regression (4), we include the measure of the number of brokers making recommendations before the pricing date and find a negative but insignificant coefficient. We further include both *Ln(1+Post-Coverage)* and the measure for analyst optimism, *Post-Optimism*, in Regression (5). The coefficient on *Post-Optimism* is positive and highly significant. The coefficient on *Ln(1+Post-Coverage)* remains statistically insignificant. Economically, a one standard deviation increase in *Post-Optimism* is associated with an increase of 6.61% (5.47×1.21) for the first-day return. For the IPOs in our sample, this effect represents an increase of about 18.9% of the mean first-day return of 35.1%.

To shed light on the impact of pre-pricing date analyst research on initial returns, in Regression (4), we replace post-pricing analyst coverage with the pre-pricing coverage measure, *Ln(1+Pre-Coverage)*. We then include pre- and post-pricing date coverage and optimism measures in Regression (6). The coefficient on *Ln(1+Post-Coverage)* remains positive but is statistically insignificant, and the coefficient on *Post-Optimism* is positive and highly statistically significant. Meanwhile, the coefficients on pre-pricing date coverage are negative and statistically significant, and those on optimism are positive but not statistically significant in Regression (6).

[29] Institutional (offline) and retail (online) oversubscriptions can be affected by analyst coverage and optimism. We drop *Ln(Offline OverSub)* and *Ln(Online Oversub)* and re-estimate the regressions in Table 4. The coefficients on key variables remain qualitatively the same.

These results are consistent with those in Table 3, suggesting that pre-pricing analyst research is incorporated in setting the offer price. We also re-run the analysis using measures of overall analyst research (aggregating pre- and post-pricing research), rather than treating these measures separately, in Regression (7). The results confirm that analyst optimism remains positively associated with initial returns.

Another important variable of interest is the offer price revision. The coefficients on *Offer Price Revision* in all regressions in Table 4 are reliably negative, without and with analyst-related measures on the right-hand side of the regressions. Economically, the coefficients on *Offer Price Revision* imply a decrease of 5.41% to 9.72% in the initial return for an IPO if its offer price revision is increased by one standard deviation (108.11%). The measure of *Offer Price Revision* captures information production in the primary market, similar to offer price revisions in the literature; the generally significant and economically important negative coefficients on *Offer Price Revision* suggest that the well-documented partial adjustment phenomenon, as in Hanley (1993), does not exist for China's IPO market. This non-positive relation is likely due to the fact that the lead underwriter for an IPO in China does not control the allocation of the IPO shares and hence cannot reward institutional investors with underpriced shares. The underwriter instead tries to obtain a higher offer price so that its percentage spread income will be higher.[30] Everything else being equal, a higher offer price will leave less room for the price on the first trading day to go up, resulting in a negative relationship between the offer price revision and the initial return.

From an agency perspective, the lack of a positive coefficient on *Offer Price Revision* is also consistent with the Loughran and Ritter (2002) prospect theory explanation for the partial

[30] Note that the lead underwriter's incentives to increase the offer price will not result in zero average underpricing. The lead underwriter still has the incentive to avoid a failed IPO and investors still need to be compensated for the risk of investing in an IPO. The risk-related factors are supported by the negative coefficients on *Ln(Assets)* and *ROE*.

adjustment of offer prices, since without share allocation discretion, leaving money on the table does not generate additional revenue from rent-seeking investors. Using U.S. data, Ince (2014) conducts tests that he interprets as supporting the agency theory. Regardless, the negative coefficients on *Offer Price Revision* suggest that underwriters' offer price adjustment behavior changes when they do not have share allocation discretion, as is also the case for Indian IPOs (Bubna and Prabhala (2011)).

Overall, the results reported in Tables 3 and 4 suggest that greater pre-pricing date analyst coverage and optimism are associated with higher offer price revisions, and that post-pricing date optimistic analyst coverage has a positive impact on initial returns. These results suggest that analyst coverage for IPOs in the primary market can significantly impact IPO pricing.

V. Addressing Potential Endogeneity of Analyst Coverage

The number of analysts covering a company at the time of the IPO is not random; it is partly driven by market conditions, analyst expertise, client needs, etc. Bradley, Jordan, and Ritter (2008) identify market cap and turnover ratio as the most important determinants of coverage by unaffiliated analysts in the year after the IPO for U.S. IPOs. In our empirical setup, offer price revisions or initial returns happen after pre- or post-pricing analyst coverage measures, respectively. Even if an analyst chases hot IPOs, i.e., if the expected price revisions and expected returns positively affect coverage, she has to forecast which IPOs are hot. So, biased estimates on analyst coverage and optimism in Tables 3 and 4 due to reverse causality can only arise when we fail to control for factors that significantly affect both analyst coverage and IPO pricing.

We use instrumental variables (IVs) to formally address any endogenous concerns. First, we use the implementation of the *Provisional Rules for Publishing Securities Research Reports*

(effective on January 1, 2011) as an instrumental variable for analyst coverage decisions.[31] This regulation on analyst reports constituted a significant exogenous regulatory shock that fundamentally altered incentives governing equity analyst behavior during IPOs in China. Second, we employ the length (number of days) of two intervals between two key dates during a firm's IPO process as instrumental variables: the length of the prospectus-to-pricing interval for pre-pricing coverage and the length of the pricing-to-listing interval for post-pricing coverage.

To save space, we put detailed discussions on the relevance and plausible exogeneity of these IVs and the IV regression results in the Internet Appendix of the paper. The first-stage regressions using these IVs for pre- and post-pricing analyst coverage suggest that these IVs are valid. The second-stage regression results suggest that our results in Tables 3 and 4 are not driven by potential endogeneity of analyst coverage.

VI. Analyst Coverage and Institutional Investor Demand

In this section, we examine the relations between analyst research and institutional investor behavior. We show that institutional investor demand is affected by analyst coverage, but research optimism does not respond to investor demand. These results shed further light on the information production nature of pre-IPO analyst research.

First, we regress two investor demand measures, including offline oversubscription for institutional investors and online oversubscription for retail investors, on pre-pricing analyst coverage. The results are presented in the first two columns of Table 5. Column 1 demonstrates a statistically significant positive association between pre-pricing analyst coverage and offline oversubscription (institutional investor demand). Conversely, we find no significant association

[31] See more details about this policy at https://www.gov.cn/gongbao/content/2011/content_1808619.htm.

between pre-pricing analyst coverage and online oversubscription (retail investor demand) in Column 2. This pattern – where analyst coverage aligns with institutional subscriptions but not retail subscriptions – provides empirical support for our interpretation that analysts serve an information production role for sophisticated market participants rather than engaging in hype targeting retail investors.

Next, to shed further light on the information production explanation, we investigate whether the change of analyst earnings forecasts simply reflects investor demand as captured by offline (institutional) and online (retail) oversubscriptions. To focus on changes in earnings forecast, we first re-calculate post-optimism using the expected offer price as the benchmark. We then define the *Optimism_Change* measure simply as post-optimism minus pre-optimism. Note that both of these measures are scaled now by the expected offer price. We regress the change of optimism on oversubscription variables. We control for firm characteristics, industry fixed effects, and year fixed effects in the regressions. Results are shown in Columns 3 to 4 of Table 5. We find that both offline oversubscription (institutional demand) and online oversubscription (retail demand) show no significant relationships with changes in optimism. The combined oversubscription measure is also statistically insignificant.

Collectively, the absence of a statistically significant relation between institutional demand and shifts in analyst optimism suggests that analysts do not passively echo investor sentiment. These results reinforce our conclusion that analysts contribute to independent information production rather than merely reflecting institutional demands during the IPO process.

VII. Long-Run Performance and Relationship Analysts

Quiet period restrictions and the relaxations of such restrictions in the JOBS Act are

motivated by attempting to balance the good (information production that can help improve IPO pricing) and the bad (hype that can mislead investors). It is not easy to quantify the relative magnitude of hype and information production for analyst research in either the primary or the secondary markets, especially for the subset of hype efforts that aim at misleading investors. But for both investors and regulators, it would be useful to show that information production is not a sideshow or dominated by hype. In this section, we present additional evidence by examining two additional aspects of pre-IPO analyst research: the long-run return prediction power of primary market analyst research and the consequence of excluding research reports from analysts affiliated with brokers that are at least partly owned by the lead underwriter.

A. Analyst Research and IPO Long-Run Performance

In this sub-section, we examine the relations between primary market analyst coverage and optimism and the long-run performance of IPOs. Price reactions of analyst forecasts on the secondary market are often incomplete, and a post-forecast drift has been documented (Gleason and Lee (2003); Hui and Yeung (2013)). Such a drift can also exist in the stock returns of IPOs due to underreactions to the pre-IPO research. There could also be a potential long-run role of analyst coverage (Liu, Sherman, and Zhang (2014)), according to Merton's attention hypothesis. If analyst research is dominated by misleading hype (a collection of marketing efforts), pre-IPO analyst research ought to have negative marginal predictive power for the long-run performance of IPOs. If analyst research contains new information, and if a forecast drift due to underreaction exists, pre-IPO research would have a positive impact on IPO long-run performance.

We use one-, two-, and three-year buy-and-hold returns (BHRs) after the IPO as the measures for IPO long-run performance. We calculate the buy-and-hold returns for a specific holding period (one to three years) using compounded monthly returns starting with the first month after the IPO

trading date (e.g., March for any IPO during February). As a control variable, the market buy-and-hold returns for the same holding period are based on the value-weighted market return of both the Shanghai and Shenzhen stock exchanges. The market-adjusted buy-and-hold (Adjusted_BHR) for an IPO is calculated as the compounded monthly total return differences of the IPO and the corresponding market index for the same holding period.

We report the summary statistics of IPO long-run performance in Panel A of Table 6. The regression results are reported in Panel B of Table 6. We use the one-, two-, and three-year BHRs, respectively, as the dependent variable in the three regressions. The coefficients on *Ln(1+Post-Coverage)* are positive and statistically significant for predicting the one- and two-year BHRs, while positive but not statistically significant for predicting the three-year BHR. The coefficients on *Ln(1+Pre-Coverage)* are positive and statistically significant in the two-year and three-year BHR regressions. The coefficients on *Pre-Optimism* and *Post-Optimism* are not statistically significant. These results are inconsistent with the hypothesis that analysts have hyped the stock to an unsustainably high level and provide some support for the argument that analyst coverage involves information production. Note that we need market underreactions to have positive coefficients on the analyst coverage variables. Such underreactions are more likely to exist if analyst forecasts involve information production.

Moreover, offline oversubscription exhibits a statistically significant positive association with 1-year post-IPO returns, suggesting institutional investors initially identify firms with stronger short-term prospects. In contrast, online oversubscription demonstrates a negative and statistically significant effect in the first year. These results are consistent with the winner's curse problem for retail investors and institutional investors being informed (Chiang, Qian, and Sherman (2010)). However, this relationship for institutional subscription reverses over the longer horizon: Offline

oversubscription shows a significant negative correlation with 2-year and 3-year returns. Meanwhile, it shows no statistically significant relationships for retail subscriptions with 2-year and 3-year returns. Most of the other control variables in the regressions are statistically insignificant. In all three regressions, the coefficients on *Ln(assets)* are negative and statistically significant. This negative relation between firm size and long-run returns is in contrast to the positive relation found in studies using U.S. data.

B. Relationship Analysts

In our sample, all underwriters are subsidiaries of securities firms that also have asset management and brokerage businesses. Except for one specialized research firm, almost all analyst reports are from such securities firms. At the end of 2012, there were 113 securities firms in China. A large shareholder can hold shares in no more than two securities firms, and if a particular large shareholder does hold shares in two such securities firms, it can at most control one of them (controlling is usually defined as holding more than 50% of the shares). This limitation is called the "one equity participation, one controlling" policy by the CSRC. Although it is not a widespread phenomenon, some of the securities firms that issue research reports and engage in IPO underwriting do have a large shareholder in common.

All securities firms in China are required to file annual reports with the government. We collect large shareholder information of all the securities firms that issue research reports or engage in IPO underwriting from the website of the Securities Association of China (SAC at http://www.sac.net.cn/). In a given year, we then combine all IPO lead underwriters and all securities firms (brokers) that have issued any reports. This procedure results in a matrix of 54,622 underwriter-broker pairs.[32] Note that an underwriter would be paired with each broker twice if it

[32] We do not have the same 113 brokers each year, and not all of them issued reports in every year. So the total number of broker-IPO pairs is less than 97,067 (113×859).

has underwritten two IPOs. For each possible lead underwriter-broker pair, we code a dummy variable, $Relationship$, that equals one if the underwriter and the broker have the same larger shareholder, and equals zero if no cross-ownership between the pair exists.[33] Note that for a particular underwriter-broker pair, the broker may or may not cover any given IPO.

Panel A of Table 7 reports the summary statistics for the underwriter-broker pairs. The mean value of the $Relationship$ measure is 2.67%, showing that over our sample period 2.67% of the 54,622 underwriter-broker pairs have cross-ownership. An analyst from a broker that has cross-ownership with the lead underwriter (*Relationship*=1), which we call a relationship analyst, is twice as likely to cover an IPO (29.95% probability compared to the 15.86% unconditional probability).[34]

It is also possible that a relationship analyst receives pressure to provide more optimistic coverage. We report the summary statistics on coverage optimism with different relationship values in Panel B of Table 7. For both the pre- and post-pricing date coverages, there is a difference in analyst optimism for connected ($Relationship = 1$) vs. unconnected ($Relationship = 0$) brokers, although the difference for post-pricing date optimism is very small.

We examine the relationships between cross-ownership and analyst research using multivariate regressions to control for the impact of confounding factors, and the results are reported in Regressions (1) through (4) of Panel C of Table 7. Consistent with the patterns in the summary statistics in Panels A and B of Table 7, *Relationship* has a statistically significant positive impact on pre-pricing date research coverage, while its impact on post-pricing date coverage is statistically indistinguishable from zero. Again, the insignificant result for post-pricing date

[33] Central Huijin Investment Ltd. and China Jianyin Investment Securities Co., Ltd. are treated as same shareholder since the former is the parent company of the latter, and both are shareholders of big securities firms.

[34] Note that all analysts covering an IPO in the primary market in our sample are unaffiliated with the lead underwriter.

coverage is not surprising, since the offer price is already determined on the pricing date.

For the pre- and post-pricing date earnings forecasts, the coefficients on *Relationship* in Regressions (3) and (4) of Panel C of Table 7 are positive but not statistically significant. These results suggest that relationship analysts are not more likely to provide more optimistic research. Note that earnings forecast optimism has a significant positive impact on IPO pricing as reported in Tables 3 and 4. These results indicate that hype does not seem to dominate pre-IPO analyst research even when the connections between the analyst and the underwriter are strong (such as cross-ownership). Our results are consistent with those reported by Huyghebaert and Xu (2015).

Given that cross-ownership has a significant positive impact on analyst coverage, we want to make sure that the significant impact of analyst coverage on offer price revisions (the results reported in Table 3) and the significant impact of post-pricing date optimism on initial returns (the results reported in Table 4) are not driven by relationship analysts. We thus remove all the individual analyst reports by relationship analysts ($Relationship$=1) and recalculate the pre- and post-coverage and optimism measures. We then re-run the regressions and report the results in Regressions (5) (for offer price revisions) and (6) (for initial returns) in Panel C of Table 7.

For the initial return regression, Regression (6) of Panel C of Table 7, only the coefficient on post-pricing date earnings forecast optimism is positive and statistically significant. The point estimates of post-pricing date analyst coverage and earnings forecast optimism are also similar to those reported in Table 4. For the offer price revision in Regression (5) in Panel C of Table 7, the coefficients on *Ln(1+Pre-Coverage)* and *Pre-Optimism* are still positive and are still statistically significant at the one percent level. The results suggest that pre-IPO analyst coverage and earnings forecast optimism still have a significant impact on offer price revisions even after we remove all the research reports from relationship analysts.

VIII. Conclusion

More than thirty years after the rebirth of China's stock market, many of the operations and regulations of the IPO market are similar to those in developed markets such as the U.S. Unlike the U.S., however, it was common in China for unaffiliated brokers to initiate coverage of an IPO before trading starts during the period from 2009-2012. For a sample of 859 IPOs from 2009 to 2012, there are on average 10.63 brokers that provide pre-IPO coverage for each offering. Such widespread pre-IPO coverage provides a unique opportunity to examine how analysts and their information production can affect the pricing of IPOs.

We find that analyst coverage and optimistic earnings forecasts have a significant positive impact on offer price revisions and initial returns. For example, our estimates suggest that the offer price revision of an IPO is, on average, 6.88% higher when the number of brokers that publish reports before the pricing date increases by 3.61 (one standard deviation) above the mean. For an average IPO, this effect represents a gain of ¥58.9 million (US$9.4 million) in proceeds.

A one standard deviation increase in optimism based on forecasted earnings is associated with a 73% higher offer price. Importantly, there is no evidence that higher earnings forecasts are linked to lower long-run returns. In other words, the earnings forecasts are not merely used for hyping the IPOs. Instead, the evidence suggests that underwriters are rationally pricing IPOs based on forecasted earnings rather than merely relying on historical earnings.

We also examine the relations between pre-IPO research and the long-run performance of IPOs. We find that pre-IPO analyst coverage is associated with higher IPO long-run buy-and-hold returns. When we examine research reports from connected and non-connected analysts, we find that a connection due to cross-ownership makes an analyst more likely to cover an IPO before the

pricing date. But after we remove the research reports from these connected analysts, pre-IPO analyst research by the remaining analysts still demonstrates a significant positive impact on IPO pricing. Together, these results suggest that analysts do produce useful information in their pre-IPO coverage, although hype/marketing likely exists on China's IPO market.

Finally, an interesting result for China's IPOs is that offer price revisions are negatively associated with initial returns. This finding is in contrast to the partial adjustment phenomenon documented for IPOs in the U.S. and many other countries. We interpret this result as a consequence of the pro rata share allocation rules for China's IPOs. Since the lead underwriter cannot use allocations of underpriced shares to reward regular investors for supplying information or for being a profitable client, positive information provided by analysts and other sources is more fully incorporated into the offer price.

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Figure 1

Number of IPOs, Offer Price Revisions, and Initial Returns, 2009-2012

We plot the quarterly numbers of IPOs and initial returns for our sample period from 2009 to 2012 (based on trading dates). We also report offer price revisions on the right axis. Since no IPOs were subject to price caps between 2009 and 2012, the initial return is simply defined as the percentage change from the offer price to the market closing price on the first day of trading. Offer price revision is defined as the percentage difference between the expected offer price and the offer price. We do not subtract market index returns for either price change.

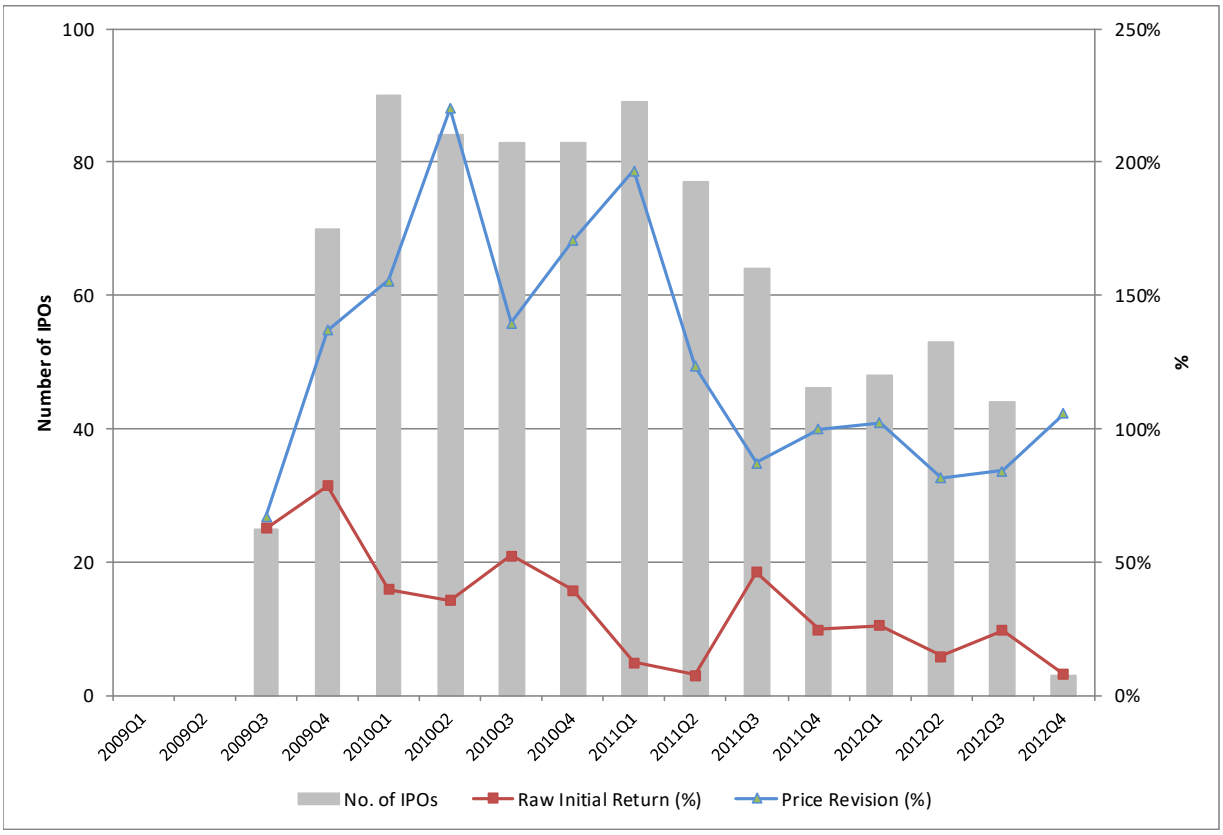
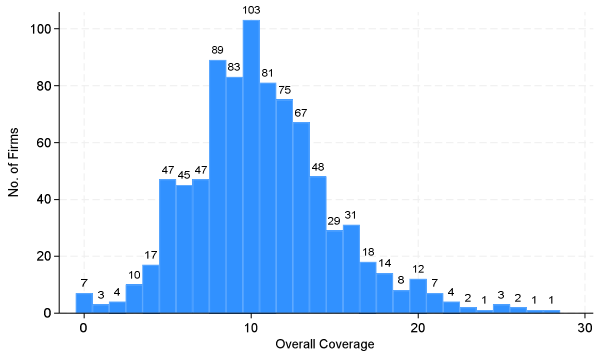


Figure 2

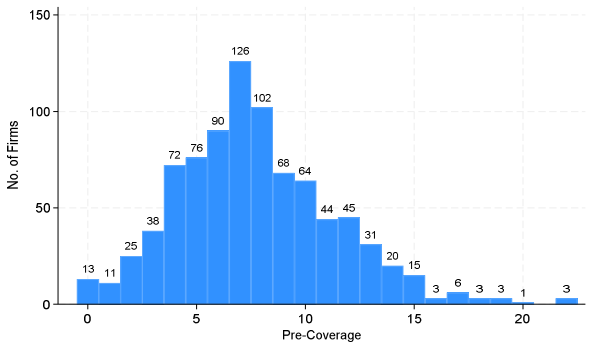
The Distribution of Analyst Coverage

The histograms in this figure show the distribution of analyst coverage for the IPOs in our sample. The data are from the China Stock Market & Accounting Research (CSMAR) database. Panel A plots the distribution of *Overall Coverage* for the entire period before the trading of an IPO. Panel B plots the distribution of *Pre-Coverage*, the number of analysts covering an IPO for the period before the pricing date. Panel C plots the distribution of *Post-Coverage*, the number of analysts covering an IPO from the pricing date to the trading date (inclusive). For all three panels, the number of analysts is shown on the X-axis, while the number of firms (IPOs) is shown on the Y-axis.

Panel A: Overall Coverage



Panel B: Pre-Coverage



Panel C: Post-Coverage

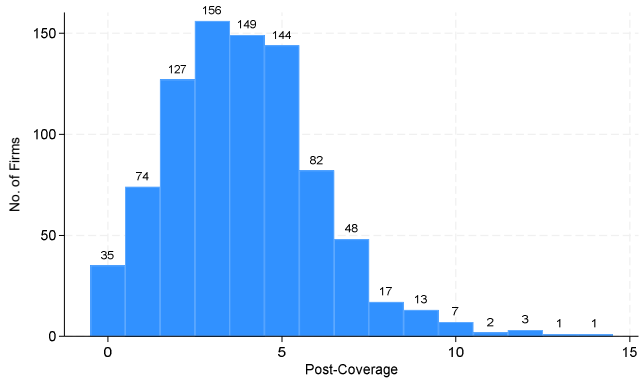


TABLE 1

Descriptive Statistics of IPOs, 2009-2012

This table reports the summary statistics of 859 Chinese IPOs from 2009 to 2012. The data are from the China Stock Market & Accounting Research (CSMAR) database. Financial firms and exchange offers are excluded. We also exclude firms that have shares listed on the Hong Kong Stock Exchange before or simultaneously with the current IPO. *IR* (%) is the initial return of an IPO, defined as the percentage change from the offer price to the first-day market closing price. *Offer Price Revision* (%) is calculated as the percentage change from the expected offer price to the offer price. *Expected Offer Price* is the ratio of the *Expected Proceeds* (reported as proposed investments for the use of IPO proceeds) over the *Expected Number of Shares* offered (the maximum number of shares that can be offered as approved by the CSRC). IPOs in China are allocated to both institutional investors and retail investors. The *Off-* and *On-line Oversubscription*s are the ratios of the number of shares subscribed to the shares allocated for institutional and retail investors, respectively. For the other issue characteristics, offer price, shares offered, and proceeds are from the CSMAR database, and overhang is the ratio of the number of shares retained by the issuing firm's existing owners over the number of shares offered. Market returns are based on the value-weighted index of all the stocks listed on the Shanghai or Shenzhen stock exchanges. *MktRet [-30, Pricing Date]* (*MktRet [-30, Trading Date]*) is the compounded market return from the 30 calendar days before the pricing date (the trading date) to the pricing date (the trading date). The *Market Share of Lead Underwriter*(s) is computed using all the IPOs during the recent three years prior to the current IPO. When there are multiple lead underwriters for an IPO, we split the proceeds equally to calculate market share. For firm characteristics, sales, assets, leverage (percentage debt over assets), P/E ratio (offer price over the latest EPS before IPO), and age (IPO year minus year of firm being founded) are based on the reported items for the latest fiscal year before the IPO. *Shares after IPO* is the total number of shares outstanding after the IPO. *Ownership of controlling shareholder (%)* is the percentage of shares both directly and indirectly under the control of the controlling shareholder (it's set as missing if no controlling shareholders exist). These data items on firm characteristics are also from the CSMAR database. We define *SOE Central* (*SOE Local*) as a dummy variable that equals one if the controlling shareholder is, or is controlled by, the central (local) government, and zero otherwise. *Market Value of Equity* is defined as the first-day market price times the total number of shares outstanding after the IPO. Assets, market value, and IPO proceeds (expected and actual) are adjusted for inflation (using the Consumer Price Index) and are in 2011 Chinese Yuan. The numbers for the IPOs in 2012 are not adjusted. For more detailed variable definitions, see Appendix Table A1.

Variable	N	p10	p25	Mean	Median	p75	p90	S.D.
IR (%)	859	-5.01	6.96	35.09	26.38	51.52	85.13	39.99
Offer Price Revision (%)	857	12.53	61.36	139.53	125.76	196.73	278.29	108.11
Expected Offer Price (Yuan)	857	6.27	7.97	11.87	10.62	14.06	18.01	6.72
Expected Proceeds (Million Yuan)	857	161.86	205.95	553.61	300.59	493.80	899.91	1,783.74
Expected Shares Offered (Million Shares)	857	15.00	20.00	71.88	27.00	42.00	70.00	462.52
Offer Price（Yuan）	859	12.00	17.00	26.43	23.00	32.00	43.00	14.82
Shares Offered (Million Shares)	859	15.00	20.00	70.25	27.00	42.00	70.00	451.74
Proceeds (Billion Yuan)	859	0.35	0.47	1.06	0.68	1.08	1.77	2.23
Offline Oversubscription	859	5.20	11.38	51.27	30.50	70.77	119.25	57.43
Online Oversubscription	838	42.00	76.00	157.64	133.00	202.00	290.00	122.52
Overhang	859	2.93	2.97	3.30	3.00	3.00	3.00	1.24
MktRet [-30, Pricing Date](%)	859	-8.40	-4.71	-0.51	-0.92	3.86	7.19	6.43
MktRet [-30, Trading Date](%)	859	-8.29	-5.09	-0.29	-0.79	4.27	8.56	6.73
Market Share of Lead Underwriter (%)	859	0.10	0.62	2.68	1.41	3.19	7.05	3.46
Sales (Billion Yuan)	852	0.15	0.24	1.52	0.45	0.98	2.29	8.77
Assets (Billion Yuan)	857	0.19	0.28	1.51	0.46	0.94	1.95	9.11
Leverage (%)	849	25.43	34.43	45.88	46.24	57.13	66.58	15.86
ROE (%)	855	17.47	21.79	29.76	26.94	34.98	44.55	13.62
P/E (trailing, using offer price)	859	26.78	34.57	49.93	47.51	61.29	76.14	20.35
Age (Years)	853	2.00	4.00	8.33	8.00	11.00	15.00	4.96
Shares After IPO (Million Shares)	859	60.00	78.60	281.94	107.85	175.00	400.52	1,280.11
Ownership of Controlling Shareholder (%)	818	22.98	31.57	44.75	43.71	56.51	66.19	16.87
SOE Central Dummy	859	0.00	0.00	0.04	0.00	0.00	0.00	0.19
SOE Local Dummy	859	0.00	0.00	0.05	0.00	0.00	0.00	0.23
Market Value of Equity (Billion Yuan)	859	1.78	2.44	5.75	3.50	5.67	9.83	9.68

TABLE 2

Descriptive Statistics of Primary Market Analyst Coverage of IPOs

This table reports the summary statistics of pre-IPO (primary market) analyst coverage. The analyst coverage data are from the CSMAR database. We report both the breadth and optimism of analyst coverage of an IPO. Breadth of coverage is measured in two different ways, the number of brokers covering the firm and the number of reports of earnings per share (EPS) forecasts, and for three periods: *Overall Coverage* for the whole period before the listing of the IPO, *Pre-Coverage* for the period before the pricing date at which the offer price is determined, and *Post-Coverage* from the pricing date to, and including, the trading date. We also report the optimism measures based on fiscal year 1 (FY1) EPS forecasts for the pre- and post-periods. For each period,

$$Optimism = \left(Implied\ {}^{E}/_{P}\ from\ EPS\ Forecast - Industry\ average\ {}^{E}/_{P}\ of\ IPOs\right) \times 100\ .$$

The *Pre-Optimism* measure uses the average EPS forecasts before the pricing date and the expected offer price, and the *Post-Optimism* measure uses the average EPS forecasts between the pricing date and the trading date, divided by the offer price. We use the industry-adjusted E/P ratio for FY1 EPS forecasts. A more optimistic EPS forecast leads to a higher E/P ratio, and a greater number for the optimism measures implies more optimistic coverage.

Variable	N	p10	p25	Mean	Median	p75	p90	S.D.
Overall Coverage: Total No. of Brokers before IPO Trading Date	859	5.00	8.00	10.63	10.00	13.00	16.00	4.28
Pre-Coverage: No. of Brokers before Pricing Date	859	3.00	5.00	7.70	7.00	10.00	12.00	3.61
Post-Coverage: No. of Brokers from Pricing to Listing	859	1.00	2.00	3.90	4.00	5.00	7.00	2.19
Overall: No. of EPS Forecasts	859	5.00	8.00	10.73	10.00	13.00	16.00	4.53
Pre-Coverage: No. of EPS Forecasts	859	3.00	5.00	6.90	7.00	9.00	12.00	3.51
Post-Coverage: No. of EPS Forecasts	859	1.00	2.00	3.83	4.00	5.00	6.00	2.22
Pre-Optimism	833	-2.96	-1.52	0.31	-0.07	1.74	3.77	2.83
Post-Optimism	819	-0.98	-0.52	0.19	-0.05	0.66	1.55	1.21

TABLE 3

Analyst Research and Offer Price Revisions

This table presents regression results with *Offer Price Revision*, defined as the percentage change from the expected offer price to the offer price, as the dependent variable for IPOs from 2009-2012. The key independent variables are *Ln(1+Pre-Coverage)* and *Pre-Optimism*. *Pre-Coverage* is measured as the number of brokers covering an IPO before the pricing date. *Pre-Optimism* for an IPO is measured as the industry-adjusted implied E/P ratios based on all FY1 EPS forecasts before the pricing date for the IPO. A higher optimism measure implies more optimistic earnings forecasts. For the detailed definition of the expected offer price as well as the control variables, see the notes in Tables 1, 2, and A1. We include industry fixed effects for 21 industries defined by the CSRC and/or year fixed effects in some regressions, but do not report their coefficients. We report heteroskedasticity-consistent t-statistics in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Dependent Variable: Offer Price Revision (%)				
	1	2	3	4	5
Ln(1+Pre-Coverage)	23.12***	12.14*	7.31		19.81***
	(3.08)	(1.65)	(0.95)		(2.87)
Pre-Optimism				25.93***	25.80***
				(18.04)	(18.20)
IR [-30,Pricing]	0.51***	0.07	0.01	0.32**	0.33**
	(2.92)	(0.36)	(0.07)	(2.24)	(2.32)
MktRet [-30, Pricing]	-0.56	0.08	0.15	-0.41	-0.57
	(-0.99)	(0.15)	(0.29)	(-1.02)	(-1.42)
Overhang	-7.38***	-8.10***	-8.47***	3.08	2.99
	(-2.69)	(-3.05)	(-2.91)	(1.31)	(1.28)
Lead MktShare	-1.44	0.84	0.75	0.74	0.62
	(-1.24)	(0.78)	(0.68)	(0.79)	(0.65)
Ln(Assets)	-15.37***	-15.38***	-12.07***	-22.27***	-23.02***
	(-3.76)	(-3.86)	(-2.70)	(-7.02)	(-7.20)
ROE	1.82***	2.01***	1.98***	0.36	0.36
	(4.52)	(5.18)	(5.24)	(1.44)	(1.44)
SOE Central Dummy	6.09	-1.86	-12.96	1.04	-1.95
	(0.29)	(-0.09)	(-0.57)	(0.06)	(-0.12)
SOE Local Dummy	-17.28	-16.06	-25.49	-16.32	-16.24
	(-1.14)	(-1.13)	(-1.59)	(-1.43)	(-1.46)
Constant	39.07*	55.64**	57.15*	32.85	-9.94
	(1.67)	(2.24)	(1.94)	(0.67)	(-0.21)
Industry FE	No	No	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes	Yes
Obs.	851	851	851	827	827
Adj. R^2	0.096	0.169	0.189	0.608	0.612

TABLE 4

Analyst Research and Initial Returns

This table presents the regression results for the impact of analyst coverage on initial returns for an IPO. The dependent variable, *IR (%)*, is defined as the percentage return from the offer price to the market closing price on the first trading day. The key independent variables are as follows. *Ln(1+Post-Coverage)* is defined as the natural log of 1 plus the number of brokers covering an IPO after the pricing date. *Ln(1+Pre-Coverage)* is defined as the natural log of 1 plus the number of brokers covering an IPO before the pricing date. *Post-Optimism* is measured as the industry-adjusted implied E/P ratios based on all FY1 EPS forecasts for the IPO after the pricing date, and *Pre-Optimism* is measured in the same way with analyst forecasts before the pricing date. A greater optimism measure implies more optimistic coverage. *Ln(1+ Overall Coverage)* is defined as one plus the number of brokers that provide analyst coverage for the whole period before the listing of the IPO. *Overall Optimism* is measured as the industry-adjusted implied E/P ratios based on all FY1 EPS forecasts for the IPO before the listing date. *Offer Price Revision* is defined as the percentage change from the expected offer price to the offer price. For the definitions of other variables, see Tables 1, 2, and A1 for more information. All regressions include industry and year fixed effects. We report heteroskedasticity-consistent t-statistics in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Dependent Variable: IR(%)						
	1	2	3	4	5	6	7
Ln(1+Pre-Coverage)			-2.38			-7.24**	
			(-0.97)			(-1.98)	
Ln(1+Post-Coverage)				1.11	2.30	4.09	
				(0.44)	(0.76)	(1.27)	
Pre-Optimism						0.61	
						(0.85)	
Post-Optimism					5.47***	4.61***	
					(4.75)	(3.44)	
Ln(1+Overall Coverage)							-2.27
							(-0.72)
Overall Optimism							3.35***
							(4.47)
Offer Price Revision		-0.06***	-0.06***	-0.06***	-0.05***	-0.06***	-0.09***
		(-5.13)	(-5.11)	(-5.12)	(-4.31)	(-3.14)	(-6.34)
IR [-30,Pricing]	0.27***	0.29***	0.29***	0.29***	0.34***	0.34***	0.33***
	(4.06)	(4.30)	(4.28)	(4.29)	(4.75)	(4.74)	(4.91)
MktRet [-30,List]	1.86***	1.83***	1.86***	1.83***	1.71***	1.76***	1.79***
	(11.74)	(11.67)	(11.25)	(11.69)	(10.65)	(10.24)	(11.12)
Lead MktShare	-0.67**	-0.61**	-0.59**	-0.61**	-0.62**	-0.58*	-0.57*
	(-2.47)	(-2.15)	(-2.08)	(-2.15)	(-2.15)	(-1.96)	(-1.92)
Overhang	1.83	1.49	1.47	1.51	2.20*	2.17*	2.36*
	(1.52)	(1.25)	(1.23)	(1.25)	(1.85)	(1.83)	(1.96)
Ln(Offline OverSub)	5.01***	6.18***	6.40***	6.09***	6.50***	6.98***	6.59***
	(3.20)	(4.05)	(4.09)	(3.98)	(4.10)	(4.32)	(4.24)
Ln(Online OverSub)	8.58***	6.47***	6.42***	6.42***	5.47***	5.25***	5.81***
	(5.38)	(4.04)	(4.00)	(3.98)	(3.35)	(3.12)	(3.62)
Ln(Assets)	-4.82***	-5.55***	-5.35***	-5.67***	-8.72***	-8.31***	-7.90***
	(-2.64)	(-3.05)	(-2.92)	(-3.08)	(-4.36)	(-4.08)	(-4.08)
ROE	-0.32***	-0.24***	-0.23***	-0.24***	-0.35***	-0.37***	-0.33***
	(-3.45)	(-2.65)	(-2.62)	(-2.68)	(-3.70)	(-3.79)	(-3.47)
Leverage	0.01	-0.01	-0.00	-0.00	-0.01	0.00	-0.01
	(0.16)	(-0.06)	(-0.06)	(-0.03)	(-0.06)	(0.01)	(-0.10)
SOE Central Dummy	1.43	0.63	0.89	0.39	1.47	2.38	2.90
	(0.28)	(0.11)	(0.16)	(0.07)	(0.25)	(0.40)	(0.51)
SOE Local Dummy	13.09*	12.59*	12.67*	12.46*	12.52*	12.02	12.56*
	(1.80)	(1.76)	(1.77)	(1.73)	(1.69)	(1.63)	(1.76)
Constant	-34.65*	-29.60*	-26.67*	-30.56*	-43.21***	-13.50	-30.56*
	(-1.80)	(-1.90)	(-1.71)	(-1.94)	(-2.80)	(-0.75)	(-1.86)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	825	824	824	824	786	771	815
Adj. R^2	0.395	0.412	0.412	0.412	0.430	0.432	0.429

TABLE 5

Analyst Research and Investor Demand

This table reports the regression results on interactions of analyst research and investor demand. Columns (1) and (2) regress investor demand on analyst coverage. The dependent variable in Column (1) is the natural log of offline oversubscription, which captures demand from institutional investors. In Column (2), the dependent variable is the natural log of the online oversubscription, which captures the retail demand for an IPO. The key independent variable in Columns (1) and (2) is *Ln(1+Pre-Coverage)*, defined as the natural log of 1 plus the number of brokers covering an IPO before the pricing date. In Columns (3) and (4), we regress changes of analyst optimism on indications of investor demand. The dependent variable is a modified measure of the difference between post-optimism and pre-optimism, where we re-calculate the post-optimism measure for an IPO using the expected offer price instead of the offer price so that both pre- and post-optimism are scaled using the same price (expected offer price). Note that *Pre-Optimism* is the same as before. The key independent variables are the natural logs of offline and online oversubscriptions, as well as the natural log of the overall oversubscription. T-statistics are in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Dependent Variable			
	Log_OverSub_offline	Log_OverSub_online	Optimism_Change	Optimism_Change
	1	2	3	4
Ln(1+Pre-Coverage)	0.20***	-0.01		
	(3.67)	(-0.23)		
Log_OverSub_offline			0.00	
			(0.16)	
Log_OverSub_online			-0.02	
			(-1.07)	
log_OverSub_total				-0.02
				(-1.12)
MktRet[-30-Offer]	-1.38***	0.69*		
	(-3.31)	(1.93)		
MktRet[-30,List]			0.00	0.00
			(0.56)	(0.51)
IR[-30,Pricing]	1.08***	1.10***	-0.00	-0.00
	(8.06)	(8.91)	(-0.16)	(-0.04)
Offer Price Revision			-0.00	-0.00
			(-1.38)	(-1.33)
log(Asset)	-0.34***	-0.36***	0.01	0.01
	(-7.83)	(-8.26)	(0.37)	(0.24)
ROE	-0.01***	-0.02***	0.00	0.00
	(-5.79)	(-6.06)	(0.74)	(0.66)
Leverage	0.00	0.01***	-0.00	-0.00
	(0.92)	(2.73)	(-1.15)	(-1.11)
SOE_Central	0.33**	0.12	-0.09	-0.09
	(2.22)	(0.90)	(-1.27)	(-1.25)
SOE_Local	0.20	0.25***	-0.00	-0.00
	(1.39)	(2.99)	(-0.06)	(-0.03)
Overhang	0.07***	0.09***	-0.01	-0.01
	(3.21)	(4.46)	(-0.61)	(-0.53)
Lead_MktShare	-0.00	-0.01*	-0.00	-0.00
	(-0.65)	(-1.86)	(-1.01)	(-1.02)
Constant	4.26***	4.80***	0.12	0.15
	(14.30)	(18.45)	(0.34)	(0.42)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	825	825	771	771
Adjusted R^2	0.644	0.427	0.055	0.056

TABLE 6

Analyst Research and IPO Long-Run Performance

This table presents the descriptive statistics and the regression results on one-, two-, and three-year buy-and-hold returns (BHRs) after the IPO for 859 IPOs from 2009-2012. We calculate the buy-and-hold returns for a specific holding period (one to three years) using compounded monthly returns starting from the first month after the IPO trading date (e.g., June for all IPOs that listed in May). The market buy-and-hold returns for the same holding period are based on the value-weighted market index return of both the Shanghai and Shenzhen stock exchanges. The Market-adjusted BHR for an IPO is calculated as $[\prod_{t=1}^{T}(1+r_t^{IPO}) - \prod_{t=1}^{T}(1+r_t^{Mkt})] \times 100\%$, where r_t^{IPO} and r_t^{Mkt} are the monthly returns for the IPO and the market index for month t and T equals 12, 24, and 36 for one-, two-, and three-year abnormal returns, respectively. Delistings have been rare in China, and all 859 of our sample IPOs survived for at least 36 months after the IPO. Panel A reports the summary statistics for BHRs and CARs in percentages. Panel B reports the regression results with the corresponding BHRs as the dependent variables. The variables of interest are the analyst coverage and optimism variables, and they are defined in the same way as in Tables 3 and 4. The control variables are defined in Appendix Table A1. We report heteroskedasticity-consistent t-statistics in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Note that the number of observations in each regression is less than 859 as reported in Panel A, because of missing values for analyst measures and other control variables.

Panel A: Summary Statistics of Post-IPO Performance

Variable	N	Mean	Median	S.D.	Min	Max
1 Year BHR after IPO (%)	859	-8.3	-16.8	37.6	-65.6	259.1
2 Year BHR after IPO (%)	859	-2.5	-22.5	66.1	-79.8	567.4
3 Year BHR after IPO (%)	859	45.1	-5.1	138.6	-84.1	1,078.9
1 Year Market-adjusted BHR after IPO (%)	859	-2.8	-11.4	34.1	-60.7	263.7
2 Year Market-adjusted BHR after IPO (%)	859	9.5	-8.6	62.0	-63.5	575.3
3 Year Market-adjusted BHR after IPO (%)	859	41.6	2.2	119.0	-122.6	988.7

Panel B: Regression of Post-IPO Performance

	Dependent Variable		
	1 Year BHR after IPO	2 Year BHR after IPO	3 Year BHR after IPO
	1	2	3
Ln(1+Post-Coverage)	5.69**	12.90**	13.74
	(1.97)	(2.41)	(1.55)
Post-Optimism	0.25	1.79	-2.73
	(0.21)	(0.82)	(-0.66)
Ln(1+Pre-Coverage)	-0.46	9.22*	16.49*
	(-0.15)	(1.79)	(1.91)
Pre-Optimism	-0.35	-0.21	0.55
	(-0.72)	(-0.25)	(0.35)
Log_OverSub_offline	3.18**	-4.33	-12.15**
	(2.07)	(-1.62)	(-2.40)
Log_OverSub_online	-3.48*	-6.13	-5.32
	(-1.87)	(-1.32)	(-0.89)
Initial Return	-0.10***	-0.10*	-0.18*
	(-2.95)	(-1.86)	(-1.65)
1 Year Market Return after IPO	1.49***		
	(15.01)		
2 Year Market Return after IPO		2.14***	
		(11.75)	
3 Year Market Return after IPO			1.84***
			(12.48)
log(Asset)	-5.32***	-16.89***	-28.13***
	(-2.78)	(-4.24)	(-4.41)
ROE	-0.06	-0.32	-0.76**
	(-0.53)	(-1.51)	(-2.31)
Leverage	0.02	0.20	0.03
	(0.17)	(0.79)	(0.07)
SOE_Central	2.52	7.49	14.45
	(0.40)	(0.44)	(0.60)
SOE_Local	-5.67	3.52	-20.16
	(-1.18)	(0.50)	(-1.13)
Overhang	-1.73	1.08	-1.28
	(-1.46)	(0.53)	(-0.47)
Ownership(%)	0.08	-0.05	0.03
	(1.21)	(-0.44)	(0.15)
Lead_MktShare	0.89*	1.85**	2.52*
	(1.89)	(2.39)	(1.74)
Constant	95.25***	54.29	145.41*
	(5.67)	(1.19)	(1.85)
Industry FE	Yes	Yes	Yes
Obs.	735	735	735
Adjusted R^2	0.263	0.231	0.429

TABLE 7

Relationship Analysts and Research Coverage

This table presents the summary statistics on relationship analysts (analysts that are related to the underwriter through cross-ownership) and their impacts on research coverage, offer price revisions, and initial returns. We report the percentage of coverage for IPO-broker pairs in Panel A, where we count coverage as one if a broker has an analyst who provides coverage for an IPO for a particular IPO-broker pair and zero otherwise. We report average optimism for individual analyst reports in Panel B. Regression results are reported in Panel C. For the underwriter-broker pair sample in Panel A, we include all the possible pairs of all brokers and all IPOs (underwriters) for a particular year, regardless of whether a brokerage firm issues an analyst report for an IPO or not. We do exclude the underwriter-broker pair if the brokerage firm is the same as the underwriter of the IPO (research coverage by affiliated analysts is not included in our early analysis). Note that the pairing is on an annual basis. *Relationship* is a dummy variable that equals one for an underwriter-broker pair if the large shareholder of the underwriter of the IPO is also listed as a major or controlling shareholder of the brokerage firm. For Panel B, the mean values of optimism measures are based on individual reports (note that the summary statistics on optimism reported in Table 2 are based on IPOs), and the dummy variable *Relationship* is defined in the same way as in Panel A for the relationship between the brokerage firm that issues the report and the underwriter of the IPO under coverage. For Panel C, the dependent variable is reported at the top of each column. *Relationship* is a dummy variable as defined in Panels A and B, and the other independent variables are defined in the same way as in Tables 3 and 4. For presentation purposes, *Offer Price Revision*, the revision of the offer price from the expected offer price, is rescaled in this table and is in decimal format when used as an explanatory variable. For Regressions (1) and (2) on pre- and post-coverage and *Relationship*, the sample is the underwriter-broker pairs as in Panel A, and the model specification is a probit model. For OLS Regressions (3) and (4) on pre- and post-optimism and *Relationship*, the sample is the individual reports as in Panel B. The number of observations is slightly smaller than that in the respective sample in either Panels A or B due to missing values. For OLS Regression (5) of *Offer Price Revision* and Regression (6) of *Initial Return* (*IR*), the sample is the IPO sample as in Tables 3 or 4. For OLS Regressions (5) and (6), the research reports from relationship analysts (reports for which *Relationship* equals one) are excluded in the calculations of the coverage and optimism variables. For all regressions, heteroskedasticity-consistent t-statistics are reported in parentheses, and *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Summary Statistics for Brokerage-IPO Pairs

	Overall			*Relationship*=1			*Relationship*=0		
Variable	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Relationship (%)	54,622	2.67	16.12						
Coverage (%)	54,622	15.86	36.53	1,459	29.95	45.82	53,163	15.47	36.16
Pre-Coverage (%)	54,622	10.50	30.65	1,459	25.50	43.60	53,163	10.08	30.11
Post-Coverage (%)	54,622	5.79	23.35	1,459	5.66	23.04	53,163	5.79	23.36

Panel B: Summary Statistics for Individual Analyst Reports

	Overall			*Relationship*=1			*Relationship*=0		
Variable	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Pre-Optimism	5,695	0.40	0.87	365	0.52	0.93	5,330	0.40	0.86
Post-Optimism	3,168	-0.73	0.78	82	-0.70	0.65	3,086	-0.73	0.78

Panel C: Regression Result

	Dependent Variable					
	Pre-Coverage Dummy	Post-Coverage Dummy	Pre-Optimism	Post-Optimism	Offer Price Revision (%)	IR (%)
	1	2	3	4	5	6
Relationship	0.62***	-0.01	0.02	0.01		
	(16.12)	(-0.24)	(0.23)	(0.28)		
Ln(1+Pre-Coverage)					13.80***	
					(2.75)	
Pre-Optimism					21.23***	
					(12.32)	
Ln(1+Post-Coverage)						1.80
						(0.78)
Post-Optimism						5.48***
						(4.75)
Offer Price Revision (%)		0.00		-0.00***		-0.05***
		(0.39)		(-5.69)		(-4.31)
IR [-30,Pricing]	-0.00	-0.00	-0.00**	-0.00***	0.33**	0.34***
	(-0.88)	(-1.33)	(-2.05)	(-5.44)	(2.35)	(4.75)
MktRet [-30, Pricing]	0.01***		0.02		-0.40	
	(4.81)		(1.33)		(-1.06)	
MktRet [-30, List]		0.00*		0.01		1.71***
		(1.84)		(1.38)		(10.67)
Ln(Expected Proceeds)	0.04**		-3.95***		-55.34***	
	(2.12)		(-20.05)		(-7.13)	
Overhang	0.01	-0.00	-0.62***	-0.10***	-1.47	2.20*
	(0.96)	(-0.46)	(-9.45)	(-2.83)	(-0.64)	(1.85)
Lead MktShare	0.00	-0.00	0.08***	0.00	2.02**	-0.62**
	(1.14)	(-0.07)	(3.42)	(0.01)	(2.18)	(-2.13)
Ln(Offline OverSub)		0.06***		-0.17***		6.51***
		(4.48)		(-3.48)		(4.10)
Ln(Online OverSub)		0.02		0.02		5.48***
		(1.08)		(0.21)		(3.36)
Ln(Assets)	-0.00	0.06***	2.93***	0.39***	13.41**	-8.70***
	(-0.15)	(3.28)	(16.63)	(5.49)	(2.15)	(-4.34)
ROE	0.00	0.00***	0.11***	0.02***	1.25***	-0.35***
	(0.21)	(3.96)	(9.20)	(5.13)	(3.82)	(-3.67)
Leverage		-0.00		0.00		-0.01
		(-1.57)		(0.75)		(-0.06)
SOE Central Dummy	0.04	0.14***	0.08	-0.31	6.87	1.46
	(0.66)	(2.71)	(0.15)	(-1.63)	(0.42)	(0.25)
SOE Local Dummy	-0.02	0.07	-0.50	0.21	-18.69*	12.49*
	(-0.51)	(1.52)	(-1.41)	(1.06)	(-1.69)	(1.68)
Constant	-1.53***	-1.66***	-15.19	-23.05***	321.20***	-43.65***
	(-8.38)	(-8.74)	(-1.36)	(-5.15)	(6.52)	(-2.83)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	54,132	52,344	8,721	8,279	827	786
Pseudo/Adjusted R^2	0.016	0.009	0.439	0.376	0.637	0.430

Appendix

TABLE A1
Variable Definitions

We use data from the China Stock Market & Accounting Research (CSMAR) database or directly from the IPO prospectus filed with the CSRC to construct the variables for IPOs from 2009-2012. Most of the data are from the CSMAR database unless otherwise noted. For sales, assets, and proceeds (actual and expected), the number is adjusted for inflation and is expressed in the 2011 level of Chinese yuan. The numbers for the IPOs of 2012 are not adjusted.

Variable	Definition
IR (%)	The percentage change from the offer price to the first-day market closing price.
Offer Price Revision (%)	The percentage difference between the expected offer price and the offer price, i.e., $\frac{offer\ price - expected\ offer\ price}{expected\ offer\ price} \times 100\%$.
Expected Offer Price	The ratio of the expected proceeds divided by the expected number of shares offered as approved by the CSRC.
Expected Proceeds	The proposed investments for the use of IPO proceeds, as reported in the prospectus, manually retrieved from the filings with the CSRC.
Expected No. of Shares	The maximum number of shares that can be offered as being approved by the CSRC.
Proceeds	Offer price times the number of shares offered, where the number of shares offered is almost always the maximum number of shares approved by the CSRC.
Ln(Expected Proceeds)	The natural logarithm of expected proceeds.
Offline Oversubscription	The ratio of the total subscriptions from institutional investors divided by the number of shares that are allocated to institutional investors.
Online Oversubscription	The ratio of total subscriptions from retail investors divided by the number of shares that are allocated to retail investors.
Ln(Offline OverSub)	The natural logarithm of *Offline Oversubscription*.
Ln(Online OverSub)	The natural logarithm of *Online Oversubscription*.
Overhang	The number of shares retained is divided by the number of shares offered.
IR [-30,Pricing]	Average percentage initial return for the IPOs during the past 30 calendar days before the pricing date of the current IPO.
IR [-30,Listing]	Average percentage initial return for IPOs during the past 30 calendar days before the trading date of the current IPO.
MktRet [-30, Pricing]	The compounded market percentage return for the past 30 calendar days before the pricing date of the current IPO. Market returns are based on the value-weighted index of all stocks listed on the Shanghai or Shenzhen stock exchanges.
MktRet [-30, Listing]	The compounded market percentage return for the past 30 calendar days before the trading date of the current IPO.
Lead MktShare	The percentage market share for a lead underwriter is based on the total IPO proceeds credited to the lead divided by the total proceeds of all IPOs during the past three years from the current IPO. For multiple lead underwriters in an IPO, the proceeds are split equally for each underwriter.
Assets	Total assets for the latest fiscal year before the IPO.
Ln(Assets)	The natural logarithm of assets.
Leverage (%)	Percentage of total debt over assets for the latest fiscal year before the IPO.
ROE (%)	Return on equity for the latest fiscal year before IPO.
Prospectus After 2011	A binary variable that equals one if the prospectus of the IPO firm is released after 2011, and zero otherwise.

TABLE A1 (continued)

Variable	Definition
Ln(Prosp. to pricing Interval)	The natural logarithm of the days of the prospectus-to-pricing interval.
Offer After 2011	A binary variable that equals one if the IPO is offered after 2011, and zero otherwise.
Ln(Offer to Trading Interval)	The natural logarithm of the days of the pricing-to-trading interval.
P/E	Offer price over the earnings per share (EPS) for the latest fiscal year before the IPO. This EPS number is reported in the final prospectus and is available from the CSMAR database.
Market Value of Equity	First-day market closing price times the number of shares outstanding after IPO
Ownership of Controlling Shareholder (%)	Percentage of shares directly or indirectly under the control of the controlling shareholder before IPO.
SOE Central Dummy	A binary variable that equals one if the controlling shareholder of the IPO firm is controlled by the central government, and zero otherwise.
SOE Local Dummy	A binary variable that equals one if the controlling shareholder of the IPO firm is or controlled by a local government at the provincial or city level, and zero otherwise.
Pre-Optimism	The mean optimism based on EPS forecasts issued before the pricing date. The mean value of the industry-adjusted E/P ratios based on all Fiscal Year 1 (FY1) EPS forecasts issued by analysts before the pricing date for an IPO. The implied E/P ratio for an EPS forecast is the ratio of the EPS forecast over the expected offer price before the pricing date. The adjustment is as follows: (*Implied E/P-Industry E/P*), where *Industry E/P* is the average of the implied E/P ratios of pre-IPO EPS forecasts of all the IPOs in the same industry in the past 12 months. Note that the industry adjustments are based on all IPOs in the past 12 months if there are fewer than five IPOs in a particular industry. The raw number is then multiplied by 100.
Post-Optimism	The mean optimism based on EPS forecasts issued after the pricing date. The calculation of this measure is similar to *Pre-Optimism*, except that we use the offer price to calculate the E/P ratio.
Overall Optimism	The mean optimism based on all EPS forecasts issued before the listing date. The calculation of this measure is similar to *Post-Optimism*, and the offer price is used for all EPS forecasts in calculating E/P ratios.
Overall Coverage	The natural logarithm of one plus the number of brokers covering the IPO before trading.
Ln(1+Pre-Coverage)	The natural logarithm of one plus the number of brokers covering the IPO before the pricing date.
Ln(1+Post-Coverage)	The natural logarithm of one plus the number of brokers covering the IPO between the offer and the trading dates.
Relationship	Dummy variable that equals one for a brokerage firm-IPO pair if the largest shareholder of the underwriter of the IPO is also listed as a major or controlling shareholder of the brokerage firm.

Internet Appendix for "Pre-IPO Analyst Coverage: Information Production or Hype?"

In this appendix, we provide an up-to-date description of China's IPO market and provide details on addressing the endogeneity of analyst coverage. Section I provides summary statistics on initial returns and the number of IPOs for the overall market and newly established exchanges. Section II provides summary statistics on pre-IPO analyst coverage for the period 2019-2024, during which pre-IPO analyst coverage of IPOs is very scarce. We discuss the reasons for the lack of analyst coverage despite the fact that many IPOs during this period were not subject to pricing caps. Section III includes details of the results for addressing endogeneity of analyst coverage. This section complements the discussions in Section V of the paper.

IA.I. China's IPOs

We report five figures on the number of IPOs and initial returns in this section. Figure IA.1 covers the overall market, Figure IA.2 covers the STAR market, Figure IA.3 covers the ChiNext market, Figure IA.4 covers the newly established Beijing Stock Exchange, and Figure IA.5 highlights the number of IPOs and initial returns for the recent two years (2023-24) under the new registration-based system.

IA.II. Distribution of analyst coverage before the trading date: The registration reform period 2019-2024

Due to consistent regulatory preferences for technology-focused firms with relaxed profitability requirements, new listings were predominantly smaller companies in high-tech sectors. This shift drastically reduced analyst incentives for pre-listing coverage. Specifically, in

the 2019-2024 period encompassing 1,440 IPOs, 87.43% (1,259 firms) had zero pre-pricing analyst coverage, while only 8.33% (120 firms) had a single analyst report, and fewer than 5% (61 firms) had coverage by more than one analyst. Table IA.1 below presents the distribution of analyst coverage before the pricing date and between the pricing and trading dates.

The scarcity of analyst reports on STAR Market stocks stems from the following challenges. First, these high-tech sectors, such as semiconductors and advanced materials, require niche expertise that exceeds traditional equity research capabilities, as many brokerages lack analysts with sufficient technical backgrounds to evaluate complex R&D pipelines or intellectual property portfolios. Second, extremely high-risk business profiles of these firms lead to huge uncertainty and discourage coverage. Third, the low interest from institutional investors in these early-stage and small-cap stocks, which is also true in the U.S. market (Chang et al., 2006), provides little incentive for analyst coverage. Fourth, the reinstatement of IPO price caps in 2014 created near certainty of substantial initial returns for listings on the SSE and the original SZSE ChiNext market, effectively transforming IPO allocations into lottery-like mechanisms characterized by low win probabilities but exceptionally high payoffs. This dynamic is evidenced by consistently massive subscription ratios—averaging in the thousands—across both online retail and offline institutional tranches for all IPO cohorts Qian et al. (2024). Consequently, extremely low probability plus the guaranteed profit opportunity fundamentally diminished institutional investors' incentive to demand information from analysts.

The severe lack of coverage for the IPOs in recent years starkly contrasts with that for the IPOs in our sample period (2009-2012), where over 98% of IPOs had multiple pre-pricing/pre-listing coverage. This lack of pre-IPO analyst research renders empirical tests of our core hypotheses infeasible with the new data, despite the fact that many of these IPOs, similar to those

in our sample period, are not subject to pricing caps.

IA.III. IV Regression Results for Addressing Potential Endogeneity of Analyst Coverage

As we discussed in Section V of the paper, the number of analysts covering a company at the time of the IPO can be endogenous. We use three instrumental variables (IVs) to show that this endogeneity concern does not drive our baseline results reported in Tables 3 and 4 in the paper. We provide more details on the justifications for using these IVs and also report the IV regression results in this appendix.

Our first IV is the implementation of the *Provisional Rules for Publishing Securities Research Reports* (effective on January 1, 2011). This regulation and its timing were not anticipated and largely constituted an exogenous shock. By establishing stringent conflict-of-interest (COI) firewalls and mandatory disclosure requirements, this regulation mandated that analysts adhere strictly to principles of independence, objectivity, fairness, and prudence while effectively mitigating potential COIs. This regulatory shift induced a strategic reallocation of analyst coverage efforts across the IPO timeline. Facing heightened regulatory risks (including penalties and reputational damage), analysts exhibited a strong disincentive to initiate coverage during the sensitive pre-pricing phase. Conversely, the window between the offer price setting and the official listing date (post-pricing/pre-listing) emerged as a period of relatively less regulatory burden. Therefore, we expect that the implementation of this regulation, which is exogenous, is relevant for analyst coverage, and after the implementation of this regulation, pre-coverage would decrease, and post-coverage would increase.

The other IVs are the length of the prospectus-to-pricing interval for pre-pricing coverage and the length of the pricing-to-listing interval for post-pricing coverage. For these two IVs, we

leverage two institutional features of China's IPO regime. For relevance, the interval length mechanically determines an analyst's opportunity to initiate coverage; a longer interval provides greater time for information gathering, due diligence, and report initiation, implying a positive relationship between interval length and coverage intensity. Crucially, these intervals exhibit plausible exogeneity relative to firm-specific characteristics or strategic coverage decisions, due to China's bureaucratic IPO approval system. Applications for an IPO enter a multi-year queue based on submission order, with approval timing subject to opaque CSRC prioritizations unrelated to current firm fundamentals. The criteria beyond the official performance requirements that the CSRC uses to select candidates are not made public. This process is also lengthy, as the regulators often require the applicants to address numerous comments before granting the final approval. Therefore, unlike IPOs in the United States, firms are not able to time the market (Cong and Howell (2021)). Thus, length variations of these intervals primarily reflect exogenous bureaucratic delays and queue congestions rather than firm quality or supply/availability of analyst coverage.

Specifically, we use *Prospectus After 2011,* which is a dummy variable indicating whether a firm releases its initial prospectus after 2011, and *Ln(Prospectus to Offer interval),* which is the natural logarithm of the days of the prospectus-to-pricing interval, as the IVs for Pre-coverage. Results are reported in Columns 1 and 2 of Table IA.2 in this appendix. Column 1 reports the result of the first-stage regression. Consistent with our expectations, *Prospectus After 2011* is negatively related to pre-pricing analyst coverage, and the length of the prospectus-to-pricing interval is positively related to pre-pricing analyst coverage. Moreover, the F-value for the IVs is 10.29, suggesting that these IVs are strong. Column 2 reports the results of the second-stage regression. Consistent with baseline regression, the predicted value of *Pre-coverage* is positively and statistically significantly related to *Offer Price Revision*.

Similarly, we use *Prospectus After 2011* and *Ln(Offer to Listing Interval),* the natural logarithm of the days of the pricing-to-listing interval, as the IVs for post-pricing analyst coverage. As shown in Columns 3 and 4, these IVs are a strong IV (F-value 21.13), and the second-stage regression delivers results that are consistent with baseline regression.[35]

Overall, the results reported in Table IA.2 suggest that our results in Tables 3 and 4 in the paper are not driven by potential endogeneity of analyst coverage.

[35] In untabulated tests, we drop optimism measures from the regressions do not alter the results.

Figure IA.1: China's IPOs and Initial Returns (1992-2025)

This figure reports the annual numbers for China's overall IPO market from 1992 to 2025, based on listing year and A-share only, where A-share refers to stocks for domestic investors. We plot the number of IPOs (blue bars) on the left axis and the average initial returns (red line) on the right axis. The data are from the Wind database. Initial return of an IPO is defined as the percentage change from the offer price to the market closing price. For IPOs that are not subjected to price caps, the market closing price on the first day of trading is used. For IPOs that are subjected to price caps, the price increase of an IPO is capped at 44% on the first day of trading and at 10% afterwards (this 10% cap applies to all seasoned stocks). We thus track each IPO until the day when its price increase is no longer subject to the price cap, and the market closing price on that day is used as the ending price for initial returns. The big drop in the number of IPOs in 2005 reflects the suspension of IPOs by the China Securities Regulatory Commission (CSRC). We also have IPO suspensions for 2008 Q4, 2009 Q1, 2009 Q2, 2012 Q4, and most of 2013. There were 13 IPOs before 1992, but some of the initial returns were very large.

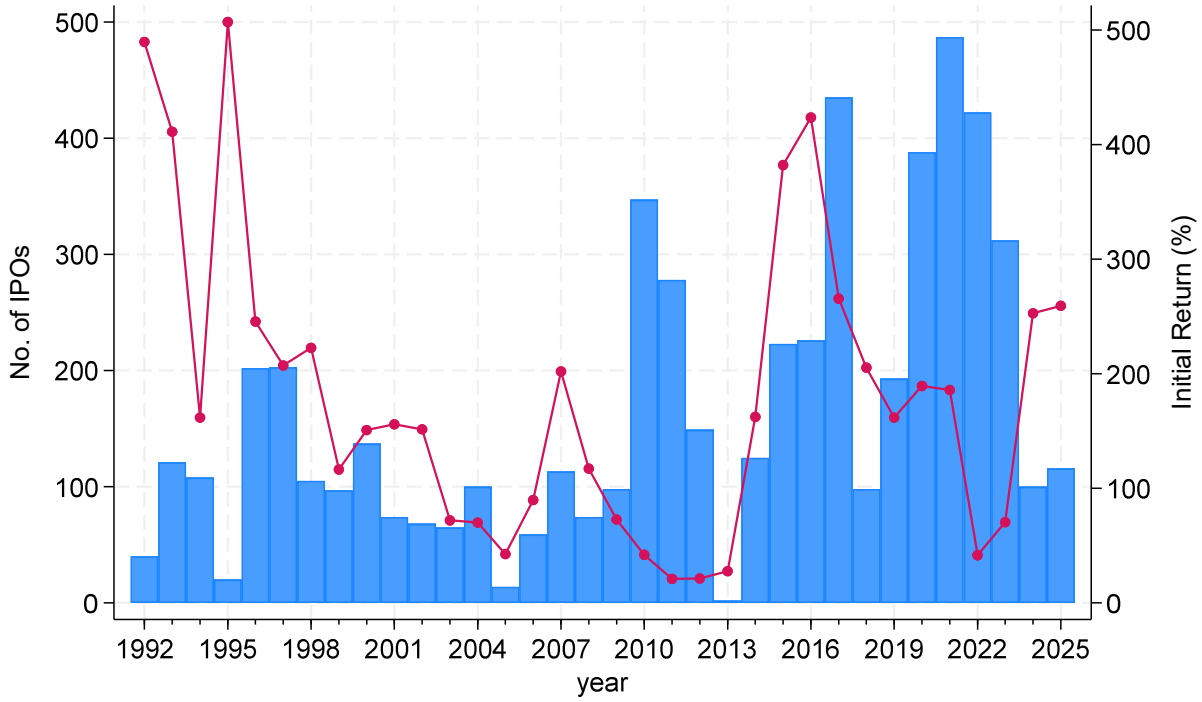


Figure IA.2: China's IPOs in STAR Market (2019-2025)

This figure reports the quarterly numbers for China's IPOs listed on the STAR market, which was launched in July 2019 as a pilot program with a U.S.-style registration system. We plot the number of IPOs (blue bars) on the left axis and the average initial returns (red line) on the right axis. The data are from the Wind database. Initial return of an IPO is defined as the percentage change from the offer price to the market closing price on the first day of trading.

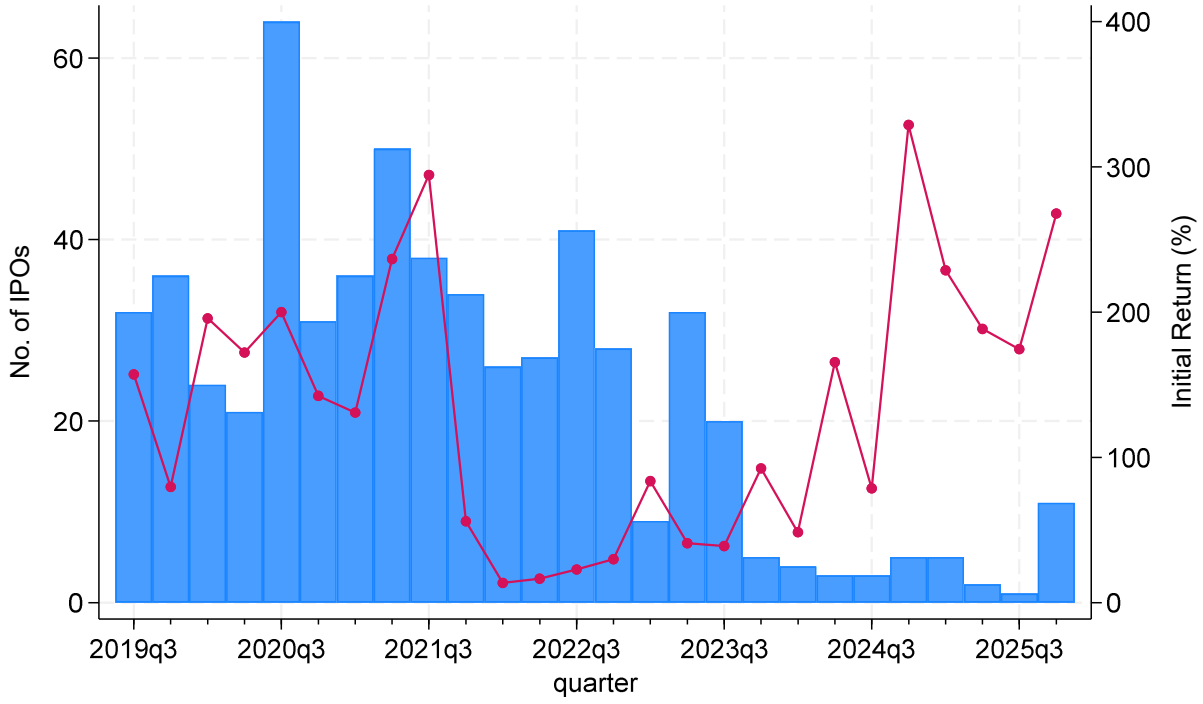


Figure IA.3: China's IPOs listed on the ChiNext Market (2020-2025)—Registration-based Regime

This figure reports the quarterly numbers for IPOs listed on the ChiNext market of the Shenzhen Stock Exchange, which was reformed in August 2020 to pilot a U.S.-style registration system. We plot the number of IPOs (blue bars) on the left axis and the average initial returns (red line) on the right axis. The data are from the Wind database. Initial return of an IPO is defined as the percentage change from the offer price to the market closing price on the first day of trading.

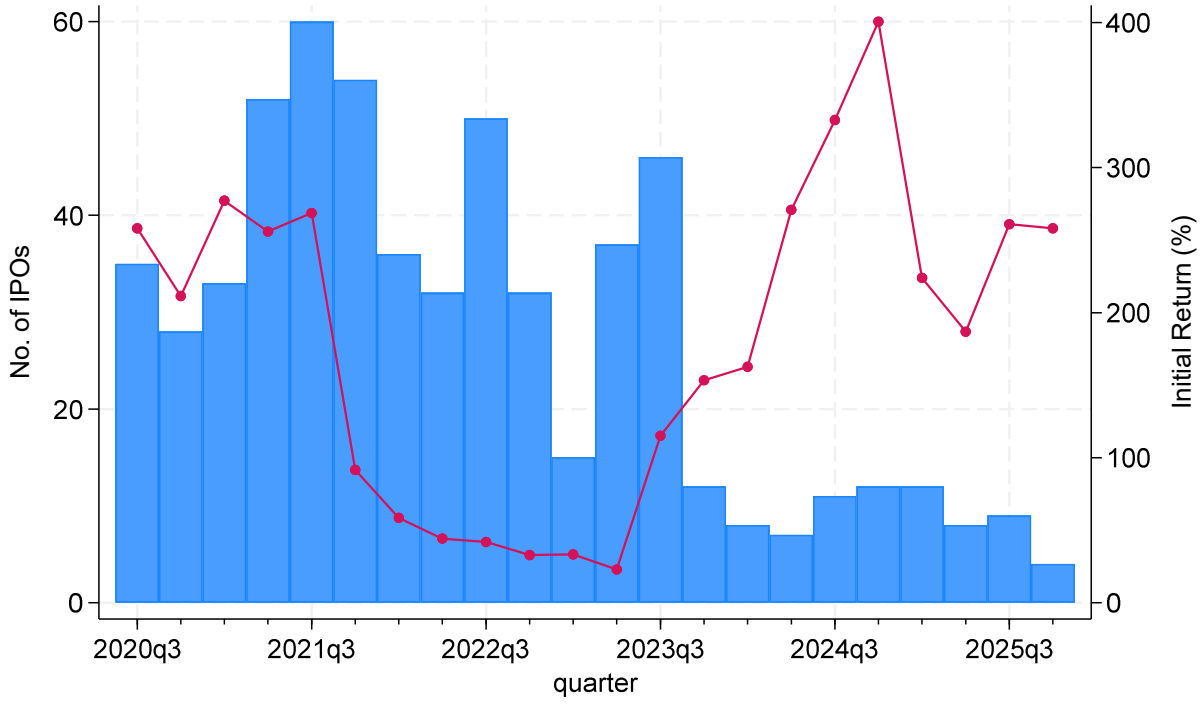


Figure IA.4: China's IPOs listed on the Beijing Stock Exchange (2021-2025)

This figure reports the quarterly numbers for IPOs listed on the Beijing Stock Exchange, which was launched in November 2021 to pilot a U.S.-style registration system for young growth companies. We do not include those new listings that were listed on the National Equities Exchange and Quotations and directly transferred to the Beijing Stock Exchange. We plot the number of IPOs (blue bars) on the left axis and the average initial returns (red line) on the right axis. The data are from the Wind database. Initial return of an IPO is defined as the percentage change from the offer price to the market closing price on the first day of trading.

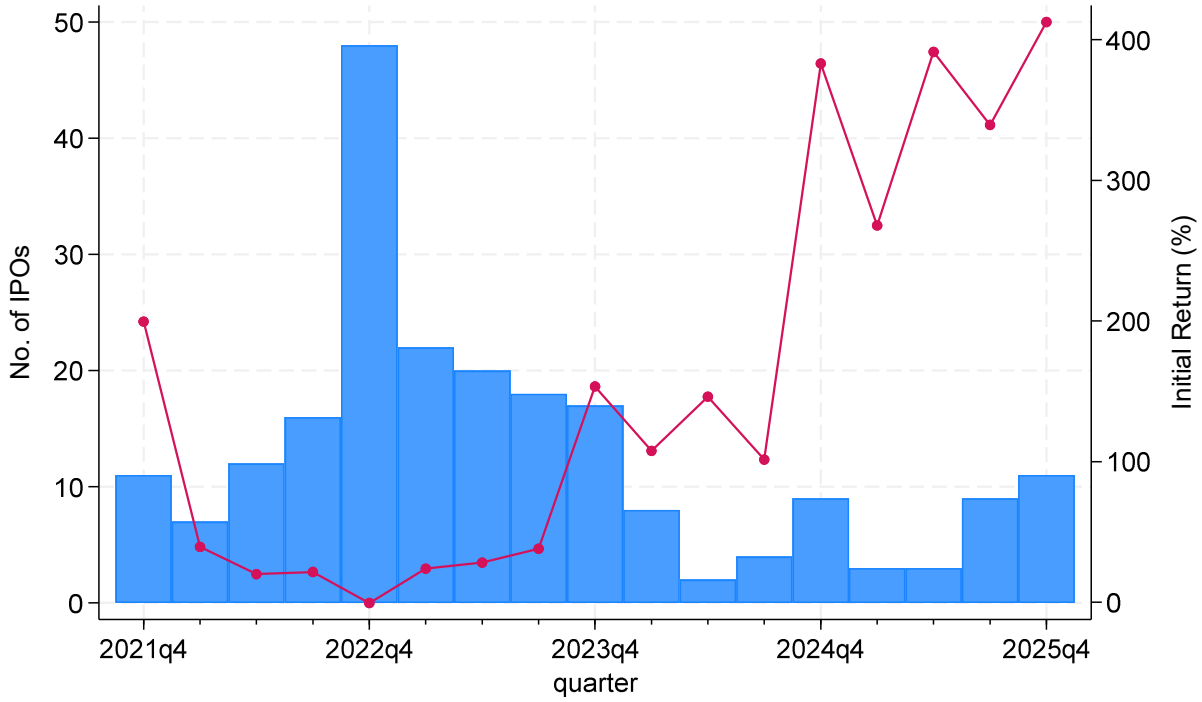


Figure IA.5: China's IPOs listed on the Mainboards after Comprehensive Registration Reform (2023-2025)

This figure reports the quarterly numbers for China's IPOs listed on the mainboard of the Shanghai and Shenzhen Stock Exchanges after the reform in April 2023. This pilot reform resembles a U.S.-style registration system, where the CSRC no longer approves an IPO on its "quality". We plot the number of IPOs (blue bars) on the left axis and the average initial returns (red line) on the right axis. The data are from the Wind database. Initial return of an IPO is defined as the percentage change from the offer price to the market closing price on the first day of trading.

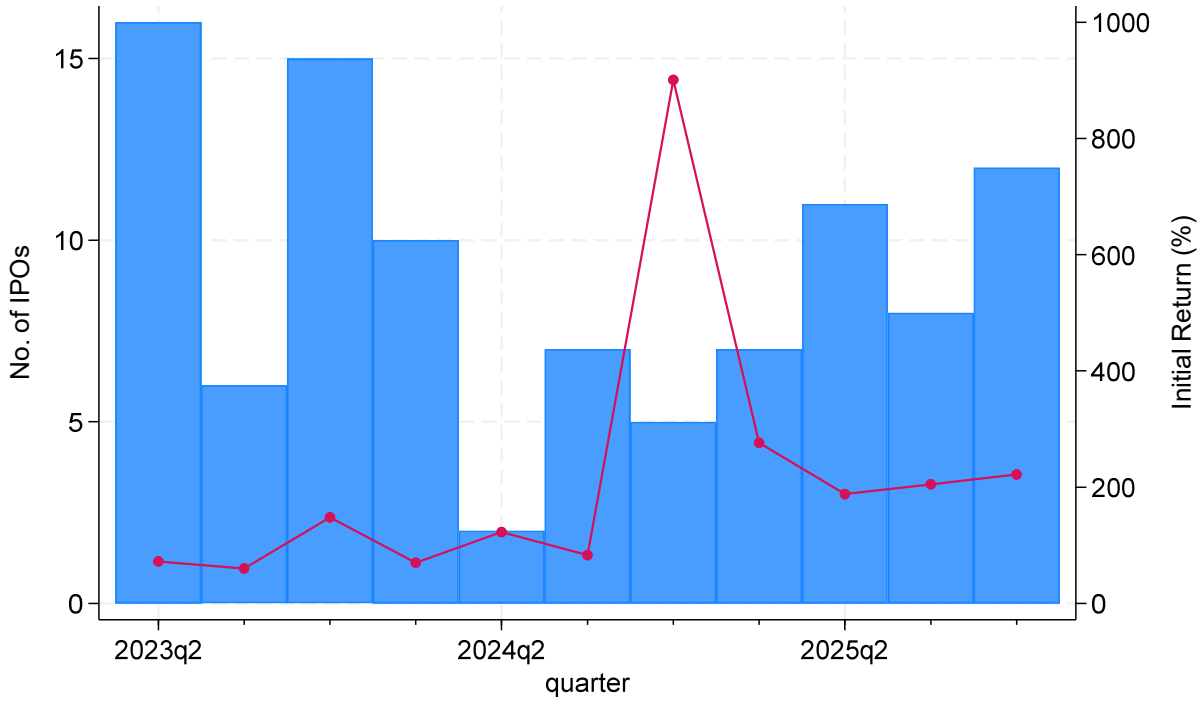


TABLE IA.1

Distribution of analyst coverage before the trading date: The registration reform period 2019-2024

This table reports the distribution of analyst coverage before the trading date for IPOs during the sample period of 2019-2024. The China Securities Regulatory Commission (CSRC) does not impose pricing caps for IPO offer prices during this period. N in the far left column indicates the number of analysts covering an IPO. Pre-coverage in the middle panel refers to analyst coverage that is initiated before the offer price is set, and post-coverage in the right panel refers to analyst coverage that is initiated after the offer price is set but before the trading starts.

	Pre-Coverage			Post-Coverage		
N	Frequency	Percent	Cum.	Frequency	Percent	Cum.
0	1,259	87.43	87.43	1,192	82.78	82.78
1	120	8.33	95.76	134	9.31	92.08
2	28	1.94	97.71	52	3.61	95.69
3	5	0.35	98.06	15	1.04	96.74
4	9	0.62	98.68	15	1.04	97.78
5	2	0.14	98.82	11	0.76	98.54
6	4	0.28	99.1	8	0.56	99.1
7	5	0.35	99.44	8	0.56	99.65
8	4	0.28	99.72	1	0.07	99.72
9	3	0.21	99.93	2	0.14	99.86
10	1	0.07	100	0	0	99.86
11	0	0	100	1	0.07	99.93
12	0	0	100	0	0	99.93
13	0	0	100	1	0.07	100
Total	1,440		100	1,440		100

TABLE IA.2

Addressing Potential Endogeneity of Analyst Coverage

This table presents instrumental variable (IV) regression results for the impact of analyst coverage on offer price revision and initial returns for an IPO. Columns (1) and (3) report the first-stage regressions. *Prospectus After 2011* is a dummy variable indicating whether the firm releases its initial prospectus after 2011. *Ln(Prosp. to Pricing interval)* is the natural logarithm of the days of the prospectus-to-pricing interval. *Offer After 2011* is a dummy variable indicating the offering date is after 2011. *Ln(Offer to Trading Interval)* is the natural logarithm of the days of the pricing-to-trading interval. Columns (2) and (4) report the second-stage regressions. The dependent variable in Column (2) is *Offer Price Revision*, which is defined as the percentage change from the expected offer price to the offer price. The dependent variable in Column (4) is *IR (%)*, which is defined as the percentage return from the offer price to the market closing price on the first trading day. For the definitions of other control variables, see Tables 3, 4, and A1 in the paper. We report heteroskedasticity-consistent t-statistics in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Dependent Variable			
	1st-stage reg. Pre-Coverage	2nd-stage reg. Offer Price Revision	1st-stage reg. Post-Coverage	2nd-stage reg. Initial Return
	1	2	3	4
Prospectus After 2011	-0.12***			
	(-3.15)			
Ln(Prosp. to pricing Interval)	0.20***			
	(2.90)			
Pre-Coverage (Predicted)		3.14***	0.25***	-8.09**
		(3.39)	(5.99)	(-2.16)
Offer After 2011			0.48***	
			(9.13)	
Ln(Offer to Trading Interval)			0.12*	
			(1.78)	
Post-Coverage (Predicted)				-5.40
				(-0.53)
Pre Optimism			0.01	2.14***
			(0.86)	(3.61)
IR[-30,Pricing]	-0.40***	1.39***	-0.06	33.26***
	(-4.60)	(3.47)	(-0.67)	(5.19)
MktRet[-30-Offer]	1.16***	-3.64**		
	(4.09)	(-2.56)		
Offer Price Revision			-0.01	-9.64***
			(-0.26)	(-5.84)
MktRet[-30,List]			-0.23	188.42***
			(-0.94)	(10.99)
Log_OverSub_offline			0.06***	8.27***
			(2.69)	(6.03)
Log_OverSub_online			0.05*	5.86***
			(1.76)	(3.03)
Leverage			-0.00	0.00
			(-1.03)	(0.01)
Overhang	0.00	-0.07	0.00	1.96*
	(0.02)	(-1.33)	(0.02)	(1.79)
Lead_MktShare	0.01	-0.03	0.00	-0.55
	(1.39)	(-1.63)	(0.54)	(-1.54)
log(Asset)	0.07***	-0.33***	0.06**	-6.33***
	(3.17)	(-3.27)	(2.19)	(-3.30)
ROE	0.00	0.01***	0.00***	-0.28***
	(1.33)	(2.94)	(2.91)	(-2.65)
SOE_Central	0.01	-0.13	0.18*	6.58
	(0.16)	(-0.38)	(1.89)	(0.99)
SOE_Local	0.03	-0.30	0.12	12.66**
	(0.34)	(-0.99)	(1.50)	(2.25)
Constant	1.93***	-6.66***	-0.01	-14.17
	(5.26)	(-2.68)	(-0.02)	(-0.52)
F-value	10.29		21.13	
Industry FE	Yes	Yes	Yes	Yes
Observations	851	849	798	798
Adjusted R^2	0.122		0.217	