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Abstract

[Excerpt] The decision for a company to issue shares publicly for the first time is not to be taken lightly. The manager-owner of a private firm must carefully weigh the benefits of an initial public offering (IPO) against the costs. Potential benefits include the ability to raise capital in the public markets on more attractive terms than in private circles; increased liquidity for managers and other insiders who wish to sell ownership stakes; and increased recognition and credibility with customers, employees, and suppliers. These benefits, however, come at considerable direct and indirect costs. For U.S. firms, the direct costs, such as investment banking commissions, average about 11 percent of IPO proceeds.¹ Less obvious, but sometimes more painful for issuing firms, is an additional indirect cost commonly referred to as “IPO underpricing.”

Keywords

initial public offering (IPO), underpricing, hospitality industry

Disciplines

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Comments

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Understanding First-day Returns of Hospitality Initial Public Offerings

Here's an explanation of why IPO prices seem, at first blush, to be out of line with the actual marketplace.

BY LINDA CANINA AND SCOTT GIBSON

The decision for a company to issue shares publicly for the first time is not to be taken lightly. The manager-owner of a private firm must carefully weigh the benefits of an initial public offering (IPO) against the costs. Potential benefits include the ability to raise capital in the public markets on more attractive terms than in private circles; increased liquidity for managers and other insiders who wish to sell ownership stakes; and increased recognition and credibility with customers, employees, and suppliers. These benefits, however, come at considerable direct and indirect costs. For U.S. firms, the direct costs, such as investment-banking commissions, average about 11 percent of IPO proceeds.¹ Less

obvious, but sometimes more painful for issuing firms, is an additional indirect cost commonly referred to as “IPO underpricing.”

Underpricing is the difference between the offer price at which shares are initially sold to the public and the closing price after the first day of trading. Put simply, underpricing is the first-day IPO return. To illustrate how underpricing comes out of the pockets of the issuing firm's original owners, consider an IPO with, say, ten million shares offered at a price of \$10.00 per share, making the total IPO proceeds \$100 million. On the first day of trading the stock price closes at \$12.00, implying that the market value of shares issued is now

¹ For a detailed description of the direct costs of raising public debt and equity, see: Inmoo Lee, Scott Lockhead, and Jay Ritter, “The Costs of Raising Capital,” *Journal of Financial Research*, Spring 1996, pp. 59–74.

\$120 million. Although the capital markets value the shares issued at \$120 million, the original owners only receive \$100 million (less, of course, fees paid to the underwriter).² The original owners, in effect, transferred \$20 million of wealth to outside investors. This so-called “money left on the table” represents a one-day return of 20 percent for investors who bought shares at the offer price. The magnitude of underpricing in our numerical example is not out of the ordi-

IPO underpricing is the price that private firms pay for investors' expertise regarding what their company is worth on public equity markets.

nary. From 1980 through 2000, underpricing averaged 18.9 percent of IPO proceeds for all U.S. firms.³

This magnitude of underpricing raises the following question: Why do private owners transfer such large amounts of wealth to outside investors in the process of going public? For investors, the opportunity to invest in IPOs appears too good to be true, which raises another question: Why not invest in every IPO at the offer price and sell at the end of the first day?

Our intention in this article is, first, to help hospitality managers understand the economic rationale behind the key elements of the IPO “bookbuilding” process. We make clear the reasons why underpricing is a necessity for managers of private hospitality firms if they choose to

² The numerical example in the text presumes that all shares are sold under a secondary issuance. The shares issued in an IPO can include both primary and secondary issues. In a primary issue, the company raises cash by selling new shares to outside public investors. The original private owners do not directly receive any cash proceeds from that sale. In a secondary issue, the original private owners sell part or all of their equity stakes to outside public investors. The original owners are, in effect, cashing out with the company receiving none of the issuance proceeds.

³ Tim Loughran and Jay R. Ritter, “Why Has IPO Underpricing Changed over Time,” University of Notre Dame and the University of Florida, Working Paper, 2002.

go public. We also explain why it is not possible to make easy money from IPO underpricing.

Our second intention is to provide an empirical characterization of first-day IPO returns for the restaurant and lodging industries. Our empirical efforts, the first ever to focus on the hospitality industry, serve two purposes. First, for managers of private hospitality firms who are considering taking their firms public, our results provide an historical benchmark for underpricing. Second, beyond benchmarking the cost of going public, we design empirical tests of the theories that predict underpricing. As soon will become clear in our discussion of the economic rationale for the bookbuilding process, it is possible to predict the pattern of first-day returns. Our tests are designed to see whether existing underpricing theories prove consistent with what we observe in the hospitality industry.

Akerlof's Lemons Problem

Our understanding of the economic rationale for IPO underpricing will be enhanced by a digression into the market for used cars. In a landmark 1970 study that won a Nobel Prize, George Akerlof recognized the importance of asymmetrically informed buyers and sellers in the market for “lemon” used cars.⁴

Akerlof's argument can be illustrated with a brief example. Consider a market for used cars in which two equally likely types of cars exist: good cars worth \$20,000 and lemons worth \$10,000. Potential sellers of used cars know what type of car they have been driving. Potential buyers, however, cannot discern a car's type merely from appearances. Instead, buyers can learn what type of car they bought only after taking possession and driving it for an extended period. Car type is thus the private information of owners.

Suppose that all owners sell their cars regardless of type. Given that half the cars being sold are good cars worth \$20,000 and the other half are lemons worth \$10,000, buyers ought to be willing to pay the average of \$15,000 for a car. The problem, of course, is that when given a

⁴ George Akerlof, “The Market for ‘Lemons’: Quality, Uncertainty, and the Market Mechanism,” *Quarterly Journal of Economics*, August 1970, pp. 488–550.

choice, potential sellers of good cars are unwilling to part with their car for \$15,000. Potential buyers understand this reluctance to sell good cars, and thus are only willing to pay \$10,000 for a used car since they believe (correctly) that they are purchasing a lemon. Thus, the market collapses, with only lemons changing hands at lemon prices.

This admittedly simple example illustrates two key lessons. The first is that markets with asymmetrically informed buyers and sellers do not work well without intervention. In the market for used cars, this intervention could take the form, for example, of a reputable used-car dealer who inspects and certifies cars as being good. If buyers trust that the dealer is offering good cars, the dealer can command a \$20,000 selling price. The key to gaining buyers' trust is the dealer's reputation. As long as the dealer keeps selling good cars, her reputation is protected and her business can continue successfully. If the dealer instead decides to make a quick profit by passing off lemons as good cars, her reputation is destroyed and her business is no longer viable. Financial economists would describe this market as being in "equilibrium" because, consistent with car buyers' beliefs, the dealer has an incentive to offer good cars for sale indefinitely.

The second lesson is that an owner cannot replicate the business model of a reputable used-car dealer because used-car owners are in the market only once. Used-car owners, therefore, have nothing to lose if they are caught misrepresenting the quality of their cars, preventing their promises from being credible (even if they are telling the truth). The repeat nature of a used-car dealer's business, on the other hand, makes reputation a vital asset.

Challenges in the IPO Market

The IPO market without a financial intermediary has problems similar to those of the used-car market without a reputable dealer. Investors who participate in the IPO market know that they are at an information disadvantage relative to the firm's managers. The managers, for whom an IPO is a one-shot deal, want to sell shares for as much as they possibly can. Therefore, if left to them-

selves, managers have an incentive to stretch the truth about their firms' prospects. Investors understand managers' incentives to stretch the truth and thus cannot rely on the managers' statements about their firm's prospects. Therefore, investors lack reliable information to distinguish good firms from bad firms. Without a third party to intermediate the going-public process, the IPO market collapses in a way similar to the hypothetical used-car market that lacks a reputable dealer.

Investment banks function as the reputable intermediary in the IPO market. The underwriting process typically used in the United States, known as "bookbuilding," starts with auditors and analysts from the investment bank working in conjunction with the management of the issuing firm to put together what is known as a "prospectus." The prospectus, which is delivered to outside investors, comprehensively describes the issuing firm's business, including its future plans, financial history, and potential risks. Investors have faith that the information contained in the prospectus is accurate because the investment bank puts its reputation on the line. The investment bank is in the business of bringing firms public. If the investment bank is caught misrepresenting a firm's prospects in the prospectus, its reputation is tarnished and its future underwriting business suffers. Hence we have an equilibrium in which investors believe that the investment bank is reporting accurate information in the prospectus, and the investment bank has an incentive to avoid deviating from those beliefs.

Why Underprice the Issue?

The investment bank must deal with another, less obvious, information asymmetry. The management of the issuing firm would like to get the highest price possible for its IPO shares. Investors, in contrast, would like to pay the lowest price possible. Armed with the prospectus, investors have accurate information on which to base their valuations, but will not voluntarily disclose what they think the shares are worth. Instead, investors have an incentive to keep their valuations private and attempt to lowball their offers in hopes of driving down the price they

pay. The investment bank's challenge is to get the most that it can for the firm that it represents in the going-public process. Thus, the investment bank's second market-making job is to get investors to truthfully reveal their private valuations and to set the price at which shares are offered according to those valuations.

The bookbuilding process is designed to do just that. As we describe next, the bookbuilding process entices investors to tell the investment

Returning to our numerical example, they might indicate how many shares they would like to buy at a price of \$13, \$15, \$17, \$19, and so on. This process of gathering indications of interest is referred to as "building the book." Upon completion of the roadshow, the investment bank analyzes the "book" containing all the indications of interest and sets the offer price and the allocation of shares to investors.

If an investment bank is successful in building a book of truthful indications of interest, then it has in its possession the aggregate demand curve of regular investors who presumably represent the "smart money" that determines market prices. Thus, an investment bank will be able to estimate with a high degree of accuracy the price at which shares will sell once they begin to trade in the public capital markets.

Critical to building a book containing truthful indications of interest are the rules by which the investment bank determines the offer price and allocation of shares. To get a sense of how the process actually works, put yourself in the shoes of a regular investor, and consider how you would respond to the following set of rules when asked by the investment bank for your indication of interest:

- Indications of interest are not binding.
- All investors get their shares at an identical offer price.
- The offer price is related to the strength and breadth of interest demonstrated during the bookbuilding effort. The stronger the overall indications of interest, the higher the offer price.
- Investors that make stronger indications of interest receive a greater allocation of shares.
- The investment bank maintains a direct link between anticipated underpricing (i.e., the anticipated first-day return) and the overall strength of the book. The stronger the overall indications of interest, the greater the discount.

Let us say that you and the other regular investors like the deal. If you all truthfully submit a strong indication of interest, then the investment bank will increase the offer price and allocate you a healthy number of shares. Importantly,

If an investment bank is successful in building a "book" of truthful indications of investors' interest, then it will know the aggregate demand curve as defined by the "smart money" that determines market prices. ...

bank exactly what they think the shares being offered are worth, knowing full well that the investment bank will use this information to set the offer price.⁵

Let us walk through the bookbuilding process to see how the game, so to speak, is played. An important part of the prospectus is the initial offer price "filing range." The filing range might be set at, for example, \$15 to \$17 a share. This \$15 to \$17 range represents the investment bank's best estimate of what the final offer price will be but is in no way binding. The investment bank and issuing firm's management then conduct a "roadshow" in financial-center cities, where the firm's story is told to an invited group of institutional investors (for example, mutual funds, pension funds, and hedge funds). These investors are often referred to as the "regular investors" because this same group is invited time after time. An important part of the roadshow is the investment bank's request of regular investors for their non-binding "indications of interest" in the issue. The indications of interest are, in effect, investors' individual demand curves for the issue.

⁵ For a formal theoretical model of the bookbuilding process, see: Lawrence M. Benveniste and Paul A. Spindt, "How Investment Bankers Determine the Offer Price and Allocation of Initial Public Offerings," *Journal of Financial Economics*, Vol. 24 (1989), pp. 343–362.

with a strong book (i.e., strong indications of interest), the investment bank agrees to underprice the issue. Remember, if all the regular investors submit truthful indications of interest (as they do in this scenario), then the investment bank has a good estimate of the price at which the shares will sell once they begin trading. To underprice the issue, the investment bank simply sets the offer price below this estimated market price. The bottom line is that, by telling the truth, you are allocated a healthy number of shares at an offer price that has intentionally been set below the expected market price.

Suppose instead that you deviate from the other investors and lie by submitting a weak indication of interest. Your weak indication of interest will result in a weaker book and therefore a lower offer price, but you will not be allocated any shares. So, instead of profiting by telling the truth, you are shut out of the deal by lying.

Let us change the scenario that we have been discussing by assuming that instead of liking the deal and truthfully submitting strong indications of interest, you and the other regular investors dislike the deal and truthfully submit weak indications of interest. The investment bank once again knows the market price at which the shares will sell once they begin trading. Clearly, the weak book points to a market price at the low end of the initial offer range or, for very weak books, below the range. With a weak book, the investment bank does not underprice the issue and sets the offer price close to this market price. As a member of the regular investor “club,” you will be asked to buy a number of shares at this offer price. Moreover, you may be asked to hold a portion of your shares for a period after the issue. Honoring the request will not, on average, generate excess losses since shares are bought at a fair market price, but it will not generate excess profits either. The reason that you will not deny the request to buy and hold shares has to do with the repeated nature of the IPO game. If, as a regular investor, you refuse to buy and hold shares in a weak IPO, the investment bank can rescind your membership in the club. Of course, a loss of club membership would be costly, as your ability to profit from your information would end.

Now suppose that you instead deviate from the other investors and lie by submitting a strong indication of interest. In that case, you may be rewarded for your deceit with a request to buy and hold even more shares in the weak IPO than if you had been truthful. As in the case of deals you like, you are best served by telling the truth regarding deals you dislike.

The bookbuilding process is what financial economists call a “truth-telling mechanism.” It

...Thus, from those investors' level of interest, an investment bank will be able to estimate with a high degree of accuracy the price at which shares will sell once they begin to trade in the public capital markets.

is in investors' best interest to tell the truth about what they think of the proposed deal. The reason for this is connected to the fact that issues with strong books will be considerably underpriced and that investors will profit by telling the truth. If the investment bank does not underprice the issue when the overall book is strong, then investors have no reason to be truthful when making their indications of interest. To illustrate, consider your incentive as an investor in the scenario posed above, if instead of underpricing the issue when the book is strong, the investment bank sets an offer price exactly equal to the market price predicted by the book. Without underpricing, if you tell the truth by indicating that you like the deal, you are allocated shares but pay exactly what they are worth. So, by telling the truth, you do not profit without underpricing. You are better off lying in the hope of driving down the offer price and picking up shares at depressed prices in the market once they begin to trade. Without underpricing, regular investors have no reason to participate in the bookbuilding process.

Is Underpricing a Free Lunch?

We have established that underpricing gives regular investors the incentive to truthfully reveal their demand curves for the issue. Without underpricing,

EXHIBIT 1

Hospitality IPO statistics (1981–2001)

Year	<i>Restaurants and Hotels</i>		<i>Restaurants</i>		<i>Hotels</i>	
	Number of IPOs	Mean Offer, Market Value (\$000s)	Number of IPOs	Mean Offer, Market Value (\$000s)	Number of IPOs	Mean Offer, Market Value (\$000s)
1981	4	9,559	4	9,559	0	—
1982	8	8,196	8	8,196	0	—
1983	15	15,365	15	15,365	0	—
1984	9	17,253	7	15,418	2	23,676
1985	5	11,735	3	7,558	2	18,000
1986	4	22,951	4	22,951	0	—
1987	5	103,928	2	22,295	3	158,350
1988	0	—	0	—	0	—
1989	3	29,782	3	29,782	0	—
1990	1	19,800	1	19,800	0	—
1991	7	31,004	7	31,004	0	—
1992	11	28,340	9	28,102	2	29,410
1993	13	37,045	7	23,832	6	52,460
1994	10	31,020	6	19,152	4	48,823
1995	7	37,704	5	17,410	2	88,440
1996	20	48,389	11	18,892	9	84,441
1997	7	29,807	3	21,500	4	36,038
1998	2	59,513	1	41,400	1	77,625
1999	2	32,438	2	32,438	0	—
2000	1	79,500	1	79,500	0	—
2001	3	72,625	3	72,625	0	—
1981–2001	137	32,927	102	21,815	35	65,311
1981–1989	53	23,566	46	15,013	7	79,772
1990–2001	84	38,833	56	27,402	28	61,696

ing, regular investors are better off keeping this information to themselves—making underpricing essential to the integrity of the bookbuilding process. For the management of the issuing firm, underpricing is thus part of the price that must be paid for going public. Conversely, for regular investors, underpricing is the gross profit collected for participating in the process.

Underpricing is not, however, pure net profit for regular investors. Underpricing can be thought of as payment for the information that regular investors bring to the process. This information does not come free. The Wall Street addresses, computer systems, financial analysts, and so forth that are all part of the infrastructure required to gather and analyze information entail substantial cash outlays. Underpricing goes, at least in part, to cover these costs.

Before moving on to our empirical study, let us address one last misunderstanding that is some-

times voiced about the IPO market. Some complain that it is unfair for retail investors (that is, everyday investors such as the authors, editors, and readers of this article) to be excluded from buying shares at the IPO offer price. When we correctly view underpricing as payment for information, there is a sound economic rationale for the exclusivity of being a regular investor. Retail investors do not bring information of value to the process. If retail investors were allowed to buy shares at the offer price, they would effectively be free riding on the information-generating efforts of the regular investors. This additional cost of free riding would ultimately be borne by the issuing firm, causing the already high cost of going public to be even higher.

Hospitality IPOs: Sample Composition

We obtained our data on hospitality IPOs from the Securities Data Corporation (SDC) and first-day closing prices from the Center for Research in Stock Prices (CRSP). We excluded from our study any IPO that is missing required data in either the SDC or CRSP database. We also excluded any IPO with an offer price less than five dollars. Our sample, described in Exhibit 1, consists of 137 hospitality IPOs that followed the bookbuilding process from 1981 through 2001. We separated our sample into restaurant and hotel subgroups according to each firm's Standard Industrial Classification (SIC) code. The SIC restaurant classification is narrow in scope, whereas the SIC hotel classification is more broadly defined to include management and ownership firms, gaming firms, and cruise lines. Our sample comprises 102 restaurant firms and 35 hotel firms.

For each year, Exhibit 1 reports the number of IPOs and the mean market value of the IPO, defined as the product of the number of shares sold and the offer price (i.e., the total amount raised in the IPO). Except for 1988, at least one hospitality firm went public every year from 1981 through 2001, with particularly active markets (or "hot" markets in Wall Street parlance) for hospitality IPOs in the early-to-mid '80s and the mid '90s. When examined separately, the restaurant and hotel IPO markets appear to track each

other closely in terms of their "hot" and "cold" streaks. Over the entire sample period, hotel firms that went public raised an average of \$65.3 million per IPO and restaurant firms raised an average of \$21.8 million.

Initial Filing Ranges and Final Offer Prices

From our earlier discussion of the investment bank's reputation and the prospectus, we know that the initial filing range for the offer price reported in the prospectus ought to represent the investment bank's unbiased assessment of the final price at which shares will be offered to regular investors. This is not to say that the investment bank will always be exactly correct in its assessment of the value that regular investors place on the shares. To the contrary, sometimes investment banks will make too high or too low an estimate. What it does say is that, on average, investment banks will get the valuation right.

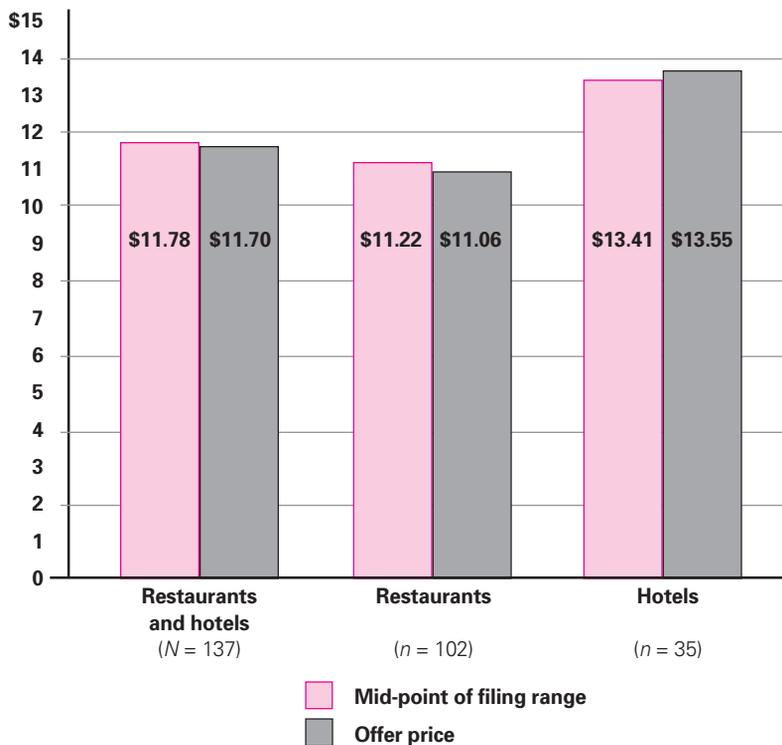
To test whether investment banks that underwrite hospitality IPOs do indeed get the filing range right on average, we conduct a straightforward statistical test. For every IPO in our sample, we calculate the mid-point of the filing range reported in the prospectus, and then compare it to the final offer price that is set after completion of the roadshow. Specifically, we test the null hypothesis that the mean difference between the mid-point of the filing range and the offer price equals zero.

Exhibit 2, on the next page, shows the mean mid-point of the filing range versus the mean offer price for all hospitality IPOs, as well as for restaurant and hotel IPOs separately. For each sample, test statistics show that the two means are not different from one another at conventional significance levels.⁶ Although investment banks' filing-range estimates, on average, were slightly high for restaurant firms and slightly low for hotel firms, the lack of statistical significance in the test of means suggests that investment banks were not systematically biased in setting

⁶ The *t*-statistics for the mean differences for the IPO samples are as follows: for all hospitality firms, -0.45; restaurants, -0.55; and hotels, 0.12. None of these *t*-statistics is significant at conventional levels.

EXHIBIT 2

Mean midpoint of filing range versus mean offer price



the filing range. The empirical evidence is thus consistent with the theory that the initial filing range contained in the prospectus is an unbiased estimate of the final offer price.

To get a sense of how often investment banks' filing-range estimates are too low or too high, Exhibit 3 reports the percentage of IPOs with a final offer price that falls below, inside, and above the filing range. For illustrative purposes, consider an IPO with a filing range of \$15 to \$17.⁷ The three categories represent a final offer price below \$15, between \$15 and \$17, and above \$17.

More than half of the time investment banks were successful in setting a filing range which encompassed the final offer price: to be precise, 52.0 percent of the time for restaurants and 60.0 percent for hotels. Notice that the slight overestimate for restaurant IPOs and underestimate for hotel IPOs, evident in Exhibit 2, are present here as well. The bottom line, consistent with the theory, is that investment banks appear to show no systematic biases in setting the filing range.

IPO Underpricing

Recall that underpricing is critical to giving regular investors an incentive to truthfully reveal when they like a particular deal. Without underpricing, the bookbuilding process falls apart. The natural test of this empirical implication is to examine whether first-day IPO returns are, on average, significantly greater than zero. Exhibit 4 presents first-day IPO returns for all hospitality companies, and for the restaurant and hotel subgroups, for the entire 21-year period (1981 through 2001), and the periods 1981 through 1989 and 1990 through 2001.

The average first-day returns for the entire hospitality sample and the restaurant and hotel subgroups are consistently positive. For the entire 21-year period, the all-hospitality, restaurant, and hotel samples exhibited economically and statistically significant mean underpricing.⁸ For the

⁷ The width of the filing range varies in practice. In the sample of hospitality IPOs we examine, the filing range was as small as \$0.50 and as large as \$3.00.

⁸ The null hypothesis that mean underpricing is zero is rejected at the 1-percent level for all subgroups. Specifically, the *t*-statistic for the mean underpricing for all hospitality firms is 7.8; for restaurants, 6.9; and hotels, 3.7.

sample as a whole, the IPOs were underpriced an average of 16.5 percent; for restaurants the underpricing was 16.6 percent; and for hotels the underpricing was 16.0 percent—strongly supporting the hypothesis that first-day IPO returns are, on average, significantly greater than zero.

We find it interesting that underpricing increases dramatically in the second half of our sample period. For all hospitality IPOs, average underpricing more than doubled from 9.2 percent in the period 1981 through 1989 to 21.1 percent in the period 1990 through 2001. Showing a more than twofold increase, restaurant IPO underpricing grew from 10.1 to 22.0 percent. Showing a more than fivefold increase, restaurant IPO underpricing grew from 3.5 to 19.2 percent.⁹ This pattern of higher first-day returns for hospitality IPOs in the 1990s is consistent with the pattern found by other researchers when all IPOs are examined together. For example, Loughran and Ritter, examining all U.S. IPOs regardless of industry, document average underpricing of 7.4 percent from 1980 through 1989 and 14.8 percent from 1990 through 1998.¹⁰ The explanation for increased underpricing in the 1990s is a puzzle for future researchers that we consider in our concluding remarks.

Pattern of Underpricing

Recall from our earlier discussion that the offer price chosen by the investment bank is related to the strength and breadth of interest demonstrated during the bookbuilding effort. The stronger are the overall indications of interest, the higher is the offer price. The strength of the book

⁹ Tests show that, with one exception, the mean underpricing for all hospitality firms, and the restaurant and hotel samples in the sub-periods 1981 through 1989 and 1990 through 2001 are all statistically significant at the 1-percent level. The exception is the hotel IPO mean underpricing of 3.5 percent from 1981 through 1989 which, although economically significant, is not statistically significant at conventional levels. From 1981 through 1989, the *t*-statistics for the mean underpricing are as follows: for all hospitality firms, 3.8; restaurants, 3.7; and hotels, 1.4. Over 1990-2001, the *t*-statistics for the mean underpricing are: all-hospitality, 7.1; restaurants, 6.0; and hotels 3.7.

¹⁰ Loughran and Ritter, *loc. cit.*

EXHIBIT 3

IPO offer prices in relation to file ranges

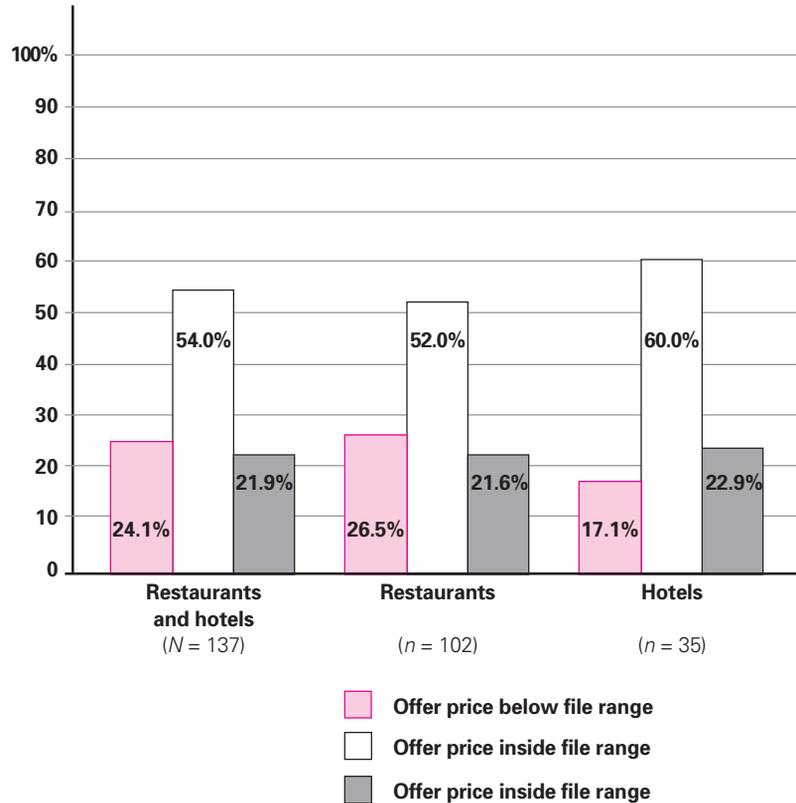


EXHIBIT 4

Mean first-day IPO return

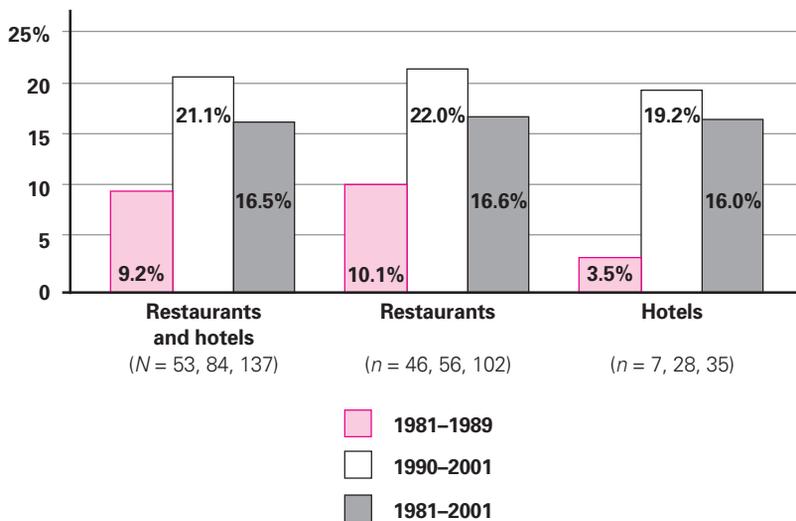
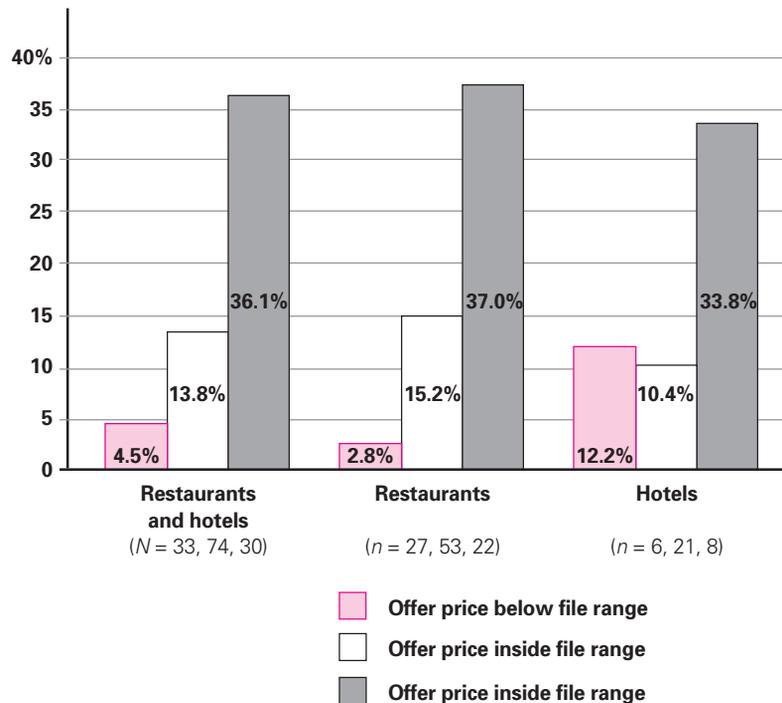


EXHIBIT 5

Mean first-day IPO return relative to the file range



will thus manifest itself in how the offer price is set relative to the filing range. A strong book is evidenced by an offer price that is set above the filing range. Similarly, a weak book is evidenced by an offer price that is set below the filing range. Also recall that the investment bank provides regular investors with an incentive to truthfully reveal their demand for an issue by maintaining a direct link between anticipated underpricing and the overall strength of the book. The stronger is the book, the greater is the underpricing. Therefore, putting all of the above together, we have the testable empirical implication that underpricing should be greatest when the offer price is set above the filing range and lowest when the offer price is set below the filing range. Exhibit 5 reports the mean first-day IPO returns conditional on whether the offer price was set below, inside, or above the filing range.

The pattern of first-day returns across IPOs is consistent with the theory that underpricing

is the price paid to regular investors for truthful revelation of demand for the issue. As theory predicts, we consistently observe the greatest underpricing when the offer price is set above the filing range and the least when the offer price is set below the filing range. For our entire sample, underpricing for IPOs was 4.5 percent when the offer price was below the filing range, 13.8 when it was inside the range, and 36.1 percent when it was above the range.¹¹ The pattern generally holds for restaurants and hotels as well. For restaurants, underpricing was 2.8 percent when the offer price was below the filing range, 15.2 when it was inside, and 37.0 percent when it was above. For hotels, underpricing was 12.2 percent when the offer price was below the filing range, 10.4 when it was inside, and 33.8 percent when it was above.¹²

Exhibit 6 reports the percentage of IPOs with first-day returns greater than or equal to zero, conditional on the offer price relative to the file range. When an investment bank sets the offer price above the file range, the first-day return was greater than or equal to zero in every instance. This suggests that after building the book, investment banks have a good handle on the price at which shares will sell once they begin trading, and know full well that they are underpricing the shares to reward the truth-telling behavior of regular investors. These percentages serve as a final piece of empirical evidence that suggests that investment banks are good at building and interpreting the book.

¹¹ Our results for the hospitality industry are consistent with the aggregated multi-industry findings of: Kathleen Weiss Hanley, "The Underpricing of Initial Public Offerings and the Partial Adjustment Phenomenon," *Journal of Financial Economics*, Vol. 34 (1993), pp. 231–250.

¹² Pairwise tests on the restaurant and hotel IPOs show, with one exception, the same statistically significant differences across the subsamples. The exception, symptomatic of a lack of statistical power resulting from the relatively few observations is that the 'below' subsample underpricing is insignificantly different from the underpricing for the other two subsamples. The *t*-statistics for restaurant sample are -3.08 for the above-within test, -5.24 for the above-below test, and -3.69 for the within-below test. The *t*-statistics for hotel sample are -2.26 for the above-within test, -1.13 for the above/below test, and 0.11 for the within/below test.

Concluding Remarks

Underpricing is critical to the integrity of the bookbuilding process. Underpricing gives regular investors the incentive to truthfully reveal their demand curves for the issue. Without underpricing, regular investors are better off keeping this information to themselves, resulting in a collapse of the bookbuilding process. For the management of the issuing firm, underpricing is thus part of the price that must be paid for going public. Conversely for regular investors, underpricing is gross profit collected for participating in the process. Underpricing is not, however, pure net profit for regular investors. The research infrastructure required to be a member in the regular investor club comes at a considerable cost. Underpricing can thus be thought of as payment for the information that regular investors bring to the bookbuilding process.

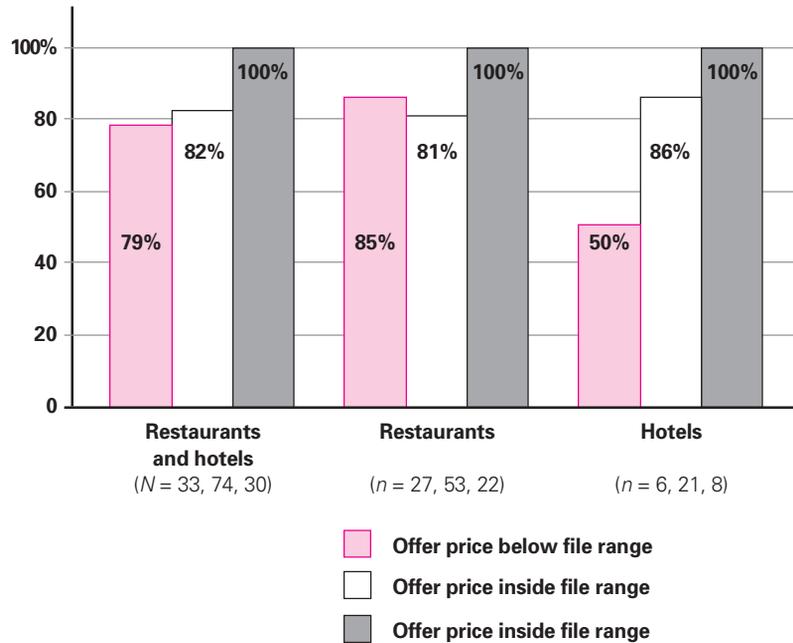
IPO underpricing is a critical consideration for managers of private hospitality firms who are considering going public. The increased liquidity, easier access to equity capital, and other benefits that accrue to publicly traded firms must be carefully weighed against the significant cost of underpricing. From 1981 through 1989, underpricing in the hospitality industry averaged 9.2 percent. From 1990 through 2001, this average underpricing climbed to 21.1 percent.

The average underpricing that a hospitality manager can anticipate is an open question. The answer depends in large part on the cause of the increase in underpricing witnessed over the last decade. The trend we document for hospitality firms is consistent with the pattern found by other researchers who examined all IPOs together regardless of industry.¹³ Other researchers offer a possible explanation for the overall increase in underpricing: a change in the composition of the firms going public. Their hypothesis is that perhaps a larger proportion of firms going public were, say, high-tech start-ups characterized by great price uncertainty. The information brought to the bookbuilding process by regular investors was thus more valuable, justifying higher average underpricing. Our evidence of dramatic underpricing increases within the hospitality indus-

¹³ Loughran and Ritter, *loc. cit.*

EXHIBIT 6

Percentage of IPOs with non-negative first-day returns relative to the file range



try, however, casts doubt on increased underpricing being primarily driven by a shift to industries characterized by greater price uncertainty.

Another potential explanation for the increase is that underpricing was not restricted to payment to regular investors for truthful information revelation, but instead directed to illegal activities. This explanation is bolstered by rapidly accumulating anecdotal evidence reported in the financial press.¹⁴ A prime example of illegal activities is “spinning,” which is the practice by investment banks of allocating shares in hot IPOs to executives from whom they hope to win consulting, underwriting, or other business. Unlike regular investors, these executives are not bringing information to the bookbuilding process. Hence, because an allocation in a hot IPO is a

¹⁴ For example, see: Randall Smith and Kate Kelly, “More Disclosure on Distribution of IPOs Looms,” *Wall Street Journal*, May 12, 2003, pp. C1, C9.

surefire money maker, spinning is akin to paying bribes to executives for steering business to the underwriting investment bank. These bribes are not free money. The bribes are ultimately borne by the issuing firms in the form of increased underpricing.

Another prime example of illegal IPO activities is investment banks' illegal practice of awarding allocations in hot IPOs to investors in exchange for commission business. Again, because such allocations are surefire money makers, the practice is akin to a bribe for the promise of paying bloated commissions back to the investment bank. Once again, the costs are ultimately borne by the issuing firms in the form of increased underpricing.

As widely reported in the financial press, these illegal investment banking practices, apparently

rampant over at least the latter part of the last decade, have been exposed, with the perpetrators facing penalties. Seeking out remedies to these and other problems in the bookbuilding process, the New York Stock Exchange and the National Association of Securities Dealers recently formed a special committee. The committee has recommended, *inter alia*, that investment banks be required to share with the issuing firm the regular investors' indications of interest contained in the book built during the roadshow and the identities of all investors who are allocated shares. If these recommendations are put into practice, the hope is that underpricing will be limited to payment to regular investors for the information revealed in their indications of interest. The result would be decreased underpricing and thus a lower cost of going public. Time will tell. ■



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