

## THE COSTS OF RAISING CAPITAL

Inmoon Lee, Scott Lochhead, Jay Ritter  
*University of Illinois at Urbana-Champaign*

Quanshui Zhao  
*City University of Hong Kong*

### Abstract

We report the average costs of raising external debt and equity capital for U.S. corporations from 1990 to 1994. For initial public offerings (IPOs) of equity, the direct costs average 11.0 percent of the proceeds. For seasoned equity offerings (SEOs), the direct costs average 7.1 percent. For convertible bonds, the direct costs average 3.8 percent. For straight debt issues, the direct costs average 2.2 percent, although they are strongly related to the credit rating of the issue. All classes of securities exhibit economies of scale, although they are less pronounced for straight debt issues. IPOs also incur a substantial indirect cost due to short-run underpricing. Most large equity offers include an international tranche, although debt issues do not.

### I. Introduction

In this article we present the average costs of raising external capital for U.S. corporations from 1990 to 1994. Specifically, we report the average spreads on public equity offerings and debt offerings, along with the other direct costs of raising capital, as a percentage of the proceeds. We find substantial economies of scale for initial public offerings (IPOs) of equity and seasoned equity offerings (SEOs). We also find substantial economies of scale for both straight bond offerings and convertible bond offerings. Spreads on bond offerings are highly sensitive to the credit rating of the offering. This article is descriptive in nature; no theories are tested. Its purpose is to provide benchmark numbers for use by issuers of securities. We do not address why firms issue the securities they do. This much broader corporate finance question would have to address taxes, corporate control, debt capacity, long-run performance patterns, investment-financing interactions, etc.

---

We would like to thank Charles Calomiris and Tim Loughran for useful comments on an earlier draft.

## II. Data and Terminology

Securities Data Company's (SDC) New Issues database is the primary source of information. After downloading SDC's data, we identified outliers and checked suspicious numbers in other publicly available sources. The New Issues database includes publicly placed firm commitment offerings only. In all of our tables, we exclude ADRs and unit offerings.<sup>1</sup> We restrict our sample to securities offered by domestic operating companies, and so exclude closed-end fund and real estate investment trust (REIT) offerings. We also exclude rights offerings and shelf registrations.<sup>2</sup>

We use security offerings from January 1990 to December 1994, a five-year period of relatively low inflation. Consequently, we do not make any inflation adjustments; all proceeds are the nominal proceeds. Proceeds reflect the gross proceeds raised in the U.S. and do not include money raised from the exercise of overallotment options or an international tranche, if any. In the case of equity offerings, the proceeds include the amount raised from both primary and secondary components. Primary shares are those being sold by the company, thereby increasing the number of shares outstanding. Secondary shares are those being sold by existing shareholders (managers, venture capitalists, etc.), which neither increase the number of shares outstanding nor provide capital for the company. Many IPOs include both primary and secondary components, with the fraction that is primary generally higher for younger companies. A few IPOs, sometimes involving spin-offs from parent companies, are pure secondaries. All of our SEOs involve primary shares; we exclude "registered secondaries," in which the entire issue is composed of shares being sold by existing shareholders, from our SEO sample.

For our sample of bond offerings, we exclude issues with a maturity date of one year or less. Our sample includes both zero-coupon, original-issue discount bonds, and coupon bonds. We include serial, floating-rate, and reset bonds, as

---

<sup>1</sup>ADRs are American Depository Receipts (also called American Depository Shares) that are traded in the United States for foreign issuers. Unit offerings are bundles of securities (frequently, a share plus a warrant to buy a share at some exercise price), commonly issued in small IPOs by young, speculative companies taken public by less-prestigious investment bankers.

<sup>2</sup>Rights offerings give existing shareholders the right to buy the securities offered. While they are common in many countries, rights offerings have been rare in the United States during the last twenty years. See Smith (1977), Hansen and Pinkerton (1982), and Hansen (1988) for a discussion of rights offerings. Shelf registrations are offerings whereby a company meeting certain qualifications is permitted to issue securities without issuing a prospectus (taking the securities "off the shelf" and selling them). In our sample period, shelf equity offerings are practically nonexistent, although there are many bond offerings (typically smaller issues) using shelf registrations that we exclude.

well as traditional coupon bonds.<sup>3</sup> We exclude mortgage-backed bonds. For zero-coupon and original-issue discount bonds that are sold for less than their par value, our percentage spreads and costs are based upon the offer price, and not the face value. Our convertible bond sample includes only issues that are convertible into shares of the issuing company. Exchangeable bonds, where the bond is convertible into shares of a different company, are not in our sample. None of our convertible bonds has a maturity date of less than five years.

We refer to new equity issues by publicly traded companies as seasoned equity offerings, reserving the use of “secondary” to identify the source of shares. Among practitioners, the term “secondary offering” is frequently used to refer to an SEO. Seasoning refers to whether the security being offered is already publicly traded; IPOs are unseasoned new issues. For that matter, the term “new issues” is sometimes used to refer to any security offering, and sometimes used to refer to equity IPOs alone. Although a new bond issue is an unseasoned new issue, and therefore a debt initial public offering, we use the term IPO to refer to unseasoned equity offerings exclusively.

Gross spreads are the commissions paid to investment bankers when securities are issued. Since buyers do not pay commissions on new security issues, these spreads implicitly reflect both the buyer and seller commissions. Other direct costs include the legal, auditing, and printing costs associated with putting together a prospectus.

### III. Evidence

#### *Average Spreads and Total Direct Costs*

In Table 1 we report the average investment banker commissions (gross spreads) and other direct expenses for four classes of securities: IPOs, SEOs, convertible bonds, and straight bonds. In addition to reporting the average direct costs for each class, we also classify issues by proceeds categories. By going across a row, a reader can see how the expenses vary by security type, holding proceeds constant. By going down a column, a reader can see the magnitude of the economies of scale for a given type of security. Also reported is the number of observations in each category.

In Table 1 the median IPO is \$24.4 million, the median SEO is \$33.8 million, the median convertible bond is \$75 million, and the median straight

---

<sup>3</sup>Serial bonds have the individual bonds maturing on different dates, with the coupons varying depending upon the maturity date. Reset and floating-rate bonds have the interest rate changing periodically, with the new interest rate determined either by an auction (reset) or a formula (floaters).

TABLE 1. Direct Costs as a Percentage of Gross Proceeds for Equity (IPOs and SEOs) and Straight and Convertible Bonds Offered by Domestic Operating Companies, 1990-94.

Proceeds* (\$ millions)	Equity										Bonds							
	IPOs					SEOs					Convertible Bonds			Straight Bonds				
	N <sup>b</sup>	GS <sup>c</sup>	E <sup>d</sup>	TDC <sup>e</sup>		N	GS	E	TDC		N	GS	E	TDC	N	GS	E	TDC
2-9.99	337	9.05	7.91	16.96		167	7.72	5.56	13.28		4	6.07	2.68	8.75	32	2.07	2.32	4.39
10-19.99	389	7.24	4.39	11.63		310	6.23	2.49	8.72		14	5.48	3.18	8.66	78	1.36	1.40	2.76
20-39.99	533	7.01	2.69	9.70		425	5.60	1.33	6.93		18	4.16	1.95	6.11	89	1.54	0.88	2.42
40-59.99	215	6.96	1.76	8.72		261	5.05	0.82	5.87		28	3.26	1.04	4.30	90	0.72	0.60	1.32
60-79.99	79	6.74	1.46	8.20		143	4.57	0.61	5.18		47	2.64	0.59	3.23	92	1.76	0.58	2.34
80-99.99	51	6.47	1.44	7.91		71	4.25	0.48	4.73		13	2.43	0.61	3.04	112	1.55	0.61	2.16
100-199.99	106	6.03	1.03	7.06		152	3.85	0.37	4.22		57	2.34	0.42	2.76	409	1.77	0.54	2.31
200-499.99	47	5.67	0.86	6.53		55	3.26	0.21	3.47		27	1.99	0.19	2.18	170	1.79	0.40	2.19
500-up	10	5.21	0.51	5.72		9	3.03	0.12	3.15		3	2.00	0.09	2.09	20	1.39	0.25	1.64
Total	1767	7.31	3.69	11.00		1593	5.44	1.67	7.11		211	2.92	0.87	3.79	1092	1.62	0.62	2.24

Notes: Closed-end funds (SIC 6726), REITs (SIC 6798), ADRs, and unit offerings are excluded from the sample. Rights offerings for SEOs are also excluded. Bond offerings do not include securities backed by mortgages and issues by Federal agencies (SIC 6011, 6019, 6111, and 999B). Only firm commitment offerings and nonself-registered offerings are included. Standard Industrial Classification (SIC) codes are from Securities Data Co. (SDC).

\*Total proceeds raised in the United States, excluding proceeds from the exercise of over-allotment options (SDC variable: PROCDS).

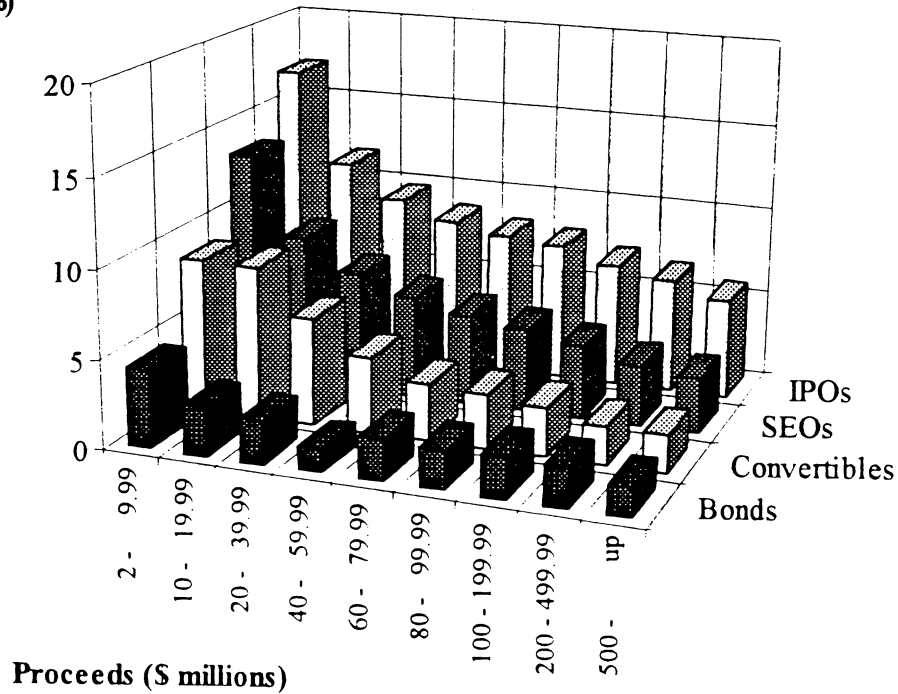
<sup>b</sup>Number of issues.

<sup>c</sup>Gross spreads as a percentage of total proceeds (including management fee, underwriting fee, and selling concession) (SDC variable: GPCTP).

<sup>d</sup>Other direct expenses as a percentage of total proceeds (including registration fee and printing, legal, and auditing costs) (SDC variables: EXPTH/(PROCDS)\*10).

<sup>e</sup>Total direct costs as a percentage of total proceeds (total direct costs are the sum of gross spreads and other direct expenses).

**Total direct costs  
(%)**



**Figure I. Total Direct Costs as a Percentage of Gross Proceeds.** The total direct costs for initial public offerings (IPOs), seasoned equity offerings (SEOs), convertible bonds, and straight bonds are composed of underwriter spreads and other direct expenses. Closed-end funds (SIC 6726), REITs (SIC 6798), ADRs, and unit offerings are excluded. Rights offerings for SEOs are also excluded. Bond offerings do not include securities backed by mortgages and issues by federal agencies (SIC 6011, 6019, 6111, and 999B). Only firm commitment offerings and nonshelf-registered offerings are included. The numbers plotted are reported in Table 1 for issues from 1990 to 1994.

bond is \$100 million. For both IPOs and SEOs, substantial economies of scale exist in both the gross spreads and the other expenses.

For SEOs, the lack of any diseconomies, even for offerings over \$500 million, is inconsistent with the findings of Hansen and Torregrosa (1992), who report diseconomies of scale for offers over \$100 million. Hansen and Torregrosa use a sample of SEOs from 1978–86, in contrast to our 1990–94 sample period. Our conjecture is that while diseconomies of scale may have existed for very large issues before the mid 1980s, a structural change has probably occurred since then, possibly because of the market’s greater experience with absorbing large numbers of big offerings. While they are not in our sample, the large number of multibillion dollar privatizations that have occurred around the world in the last decade have made megaofferings routine events.

In all of our tables, we report the averages based upon the number of observations for which we have data. For the gross spreads, SDC reports numbers for our entire sample. For the other direct expenses, however, many observations are missing. Consequently, the averages for the expenses are based upon a

TABLE 2. Direct Costs of Raising Capital, 1990–94: Utility versus Nonutility Companies.

Proceeds <sup>a</sup> (\$ millions)	Equity						Bonds					
	IPOs			SEOs			Convertible			Straight		
	N <sup>b</sup>	GS <sup>c</sup>	TDC <sup>d</sup>	N	GS	TDC	N	GS	TDC	N	GS	TDC
Panel A. Nonutility Offerings Only												
2–9.99	332	9.04	16.97	154	7.91	13.76	4	6.07	8.75	29	2.07	4.53
10–19.99	388	7.24	11.64	278	6.42	9.01	12	5.54	8.65	47	1.70	3.28
20–39.99	528	7.01	9.70	399	5.70	7.07	16	4.20	6.23	63	1.59	2.52
40–59.99	214	6.96	8.71	240	5.17	6.02	28	3.26	4.30	76	0.73	1.37
60–79.99	78	6.74	8.21	131	4.68	5.31	47	2.64	3.23	84	1.84	2.44
80–99.99	47	6.46	7.88	60	4.35	4.84	12	2.54	3.19	104	1.61	2.25
100–199.99	101	6.01	7.01	137	3.97	4.36	55	2.34	2.77	381	1.83	2.38
200–499.99	44	5.65	6.49	50	3.27	3.48	26	1.97	2.16	154	1.87	2.27
500–up	10	5.21	5.72	8	3.12	3.25	3	2.00	2.09	19	1.28	1.53
Total	1742	7.31	11.01	1457	5.57	7.32	203	2.90	3.75	957	1.70	2.34
Panel B. Utility Offerings Only												
2–9.99	5	9.40	16.54	13	5.41	7.68	0	—	—	3	2.00	3.28
10–19.99	1	7.00	8.77	32	4.59	6.21	2	5.13	8.72	31	0.86	1.35
20–39.99	5	7.00	9.86	26	4.17	4.96	2	3.88	5.18	26	1.40	2.06
40–59.99	1	6.98	11.55	21	3.69	4.12	0	—	—	14	0.63	1.10
60–79.99	1	6.50	7.55	12	3.39	3.72	0	—	—	8	0.87	1.13
80–99.99	4	6.57	8.24	11	3.68	4.11	1	1.13	1.34	8	0.71	0.98
100–199.99	5	6.45	7.96	15	2.83	2.98	2	2.50	2.74	28	1.06	1.42
200–499.99	3	5.88	7.00	5	3.19	3.48	1	2.50	2.65	16	1.00	1.40
500–up	0	—	—	1	2.25	2.31	0	—	—	1	3.50	na <sup>e</sup>
Total	25	7.15	10.14	136	4.01	4.92	8	3.33	4.66	135	1.04	1.47

Notes: Closed-end funds (SIC 6726), REITs (SIC 6798), ADRs, and unit offerings are excluded from the sample. Rights offerings for SEOs are also excluded. Bond offerings do not include securities backed by mortgages and issues by Federal agencies (SIC 6011, 6019, 6111, and 999B). Only firm commitment offerings and nonshelf-registered offerings are included. Standard Industrial Classification (SIC) codes are from Securities Data Co. (SDC).

<sup>a</sup>Total proceeds raised in the United States, excluding proceeds from the exercise of overallotment options (SDC variable: PROCDS).

<sup>b</sup>Number of issues.

<sup>c</sup>Gross spreads as a percentage of total proceeds (including management fee, underwriting fee, and selling concession) (SDC variable: GPCTP).

<sup>d</sup>Other direct expenses as a percentage of total proceeds (including registration fee and printing, legal, and auditing costs) (SDC variables: EXPTH/(PROCDS)\*10).

<sup>e</sup>Not available because of missing data on other direct expenses.

more limited number of observations.<sup>4</sup> For computing the average total direct costs in Table 1 (and other tables), we add the average gross spread and the average other expenses. In Figure I we show the average total direct costs for the four classes of securities, categorized by their gross proceeds.

The Appendix table reports the interquartile ranges for both the gross spreads and the total direct costs. (We report the interquartile range of the offerings for which we have complete data.) The largest variability of spreads occurs for bonds. As we document below, this can largely be explained based on differences in the credit quality of the issues.

### *Utility versus Nonutility Offerings*

In Table 2 we report the direct costs of raising capital after categorizing offerings into utility and nonutility offerings. During the early 1990s, utilities were relatively minor issuers, representing roughly 10 percent of SEOs and straight bond offerings, and less than 5 percent of IPOs and convertibles. Spreads and direct costs are lower for utilities than for nonutilities. This pattern, previously documented by Bhagat and Frost (1986), may be partly due to the use of competitive bidding, rather than negotiated deals, for choosing an investment banker. Alternatively, it may be partly due to the relative noncomplexity of typical utility offerings.

### *Debt Offerings and Credit Quality*

In Table 3 we report the costs of raising debt capital after categorizing issues by whether they are investment grade or noninvestment grade.<sup>5</sup> Following industry practice, we classify offerings as investment grade issues if they have a Standard & Poor's credit rating of BBB- or higher.<sup>6</sup>

Inspection of Table 3 discloses that for both convertibles and straight bonds, spreads are lower for investment-grade issues. For straight bonds, this difference is especially pronounced. Note that for issues raising less than \$60

---

<sup>4</sup>If the offerings with missing expense information have systematically higher or lower expenses than those for which SDC reports information, our procedure would result in biased estimates of average expenses. To check this, for a sample of bond offerings in 1994 that are missing expense information, we used the Securities and Exchange Commission's Edgar electronic database (<http://www.sec.gov/cgi-bin/srch-edgar>) to find the expense information. The expenses for these issues are representative of those for which SDC reports information, suggesting our numbers do not have important biases.

<sup>5</sup>Following the practice of SDC, we report as separate offerings two bond issues by the same company on the same day if they have different maturity dates, provided they are not explicitly serial bonds. For example, on September 22, 1994, Southern Pacific Transport issued two bonds, one with proceeds of \$8.1 million with a coupon rate of 7.61 percent, and the other with proceeds of \$8.8 million and a coupon rate of 7.77 percent. We treat these as two distinct offerings.

<sup>6</sup>The highest credit rating is AAA, followed by AA, A, BBB, BB, B, C, and D, in order of their perceived default probabilities. These ratings are further partitioned by pluses and minuses.

TABLE 3. Average Gross Spreads and Total Direct Costs for Domestic Debt Issues, 1990–94.

Proceeds <sup>c</sup> (\$ millions)	Convertible Bonds						Straight Bonds					
	Investment Grade <sup>a</sup>			Noninvestment Grade <sup>b</sup>			Investment Grade			Noninvestment Grade		
	N <sup>d</sup>	GS <sup>e</sup>	TDC <sup>f</sup>	N	GS	TDC	N	GS	TDC	N	GS	TDC
2–9.99	0	—	—	0	—	—	14	0.58	2.19	0	—	—
10–19.99	0	—	—	1	4.00	5.67	56	0.50	1.19	2	5.13	7.41
20–39.99	1	1.75	2.75	9	3.29	4.92	64	0.86	1.48	9	3.11	4.42
40–59.99	3	1.92	2.43	19	3.37	4.58	78	0.47	0.94	9	2.48	3.35
60–79.99	4	1.31	1.76	41	2.76	3.37	49	0.61	0.98	43	3.07	3.84
80–99.99	2	1.07	1.34	10	2.83	3.48	65	0.66	0.94	47	2.78	3.75
100–199.99	20	2.03	2.33	37	2.51	3.00	181	0.57	0.81	222	2.75	3.44
200–499.99	17	1.71	1.87	10	2.46	2.70	60	0.50	0.93	105	2.56	2.96
500–up	3	2.00	2.09	0	—	—	11	0.39	0.57	9	2.60	2.90
Total	50	1.81	2.09	127	2.81	3.53	578	0.58	0.94	446	2.75	3.42

Notes: Closed-end funds (SIC 6726), REITs (SIC 6798), ADRs, and unit offerings are excluded from the sample. Bond offerings do not include securities backed by mortgages and issues by Federal agencies (SIC 6011, 6019, 6111, and 999B). Only nonshelf-registered offerings are included. Standard Industrial Classification (SIC) codes are from Securities Data Co. (SDC).

<sup>a</sup>Firms with a BBB- or higher Standard & Poor's credit rating.

<sup>b</sup>Firms with a BB+ or lower Standard & Poor's credit rating.

<sup>c</sup>Total proceeds raised in the United States, excluding proceeds from the exercise of overallotment options (SDC variable: PROCDS).

<sup>d</sup>Number of issues.

<sup>e</sup>Gross spreads as a percentage of total proceeds (including management fee, underwriting fee, and selling concession) (SDC variable: GPCTP).

<sup>f</sup>Other direct expenses as a percentage of total proceeds (including registration fee and printing, legal, and auditing costs) (SDC variables: EXPTH/(PROCDS)\*10).

million, very few noninvestment-grade issues exist. This reflects that smaller issues with lower credit quality are commonly placed privately, and thus do not appear in our sample.

This correlation of credit quality and issue size also explains why in Tables 1 and 2 straight bond issues do not appear to display large economies of scale: as the issue size increases, the credit quality of public issuers decreases, masking some of the economies of scale. Still, in Table 3, where we hold credit quality constant, the economies of scale for debt issues are more modest than those for equity issues in Tables 1 and 2. The correlation between issue size and credit quality also explains why the average spread is so low for bonds with \$40–\$59.9 million in proceeds. The average spread of only seventy-two basis points in Table 1 reflects that for this issue size, economies of scale are largely realized, while, at the same time, very few noninvestment-grade issuers exist. For smaller offerings, the lack of economies of scale keeps the average spread high. For larger offerings, the high proportion of noninvestment-grade issues pushes



TABLE 4. Direct and Indirect Costs, in Percent, of Equity IPOs, 1990–94.

Proceeds* (\$ millions)	Gross Spreads <sup>b</sup>	Other Expenses <sup>c</sup>	Total Direct Costs <sup>d</sup>	Average Initial Return <sup>e</sup>	Average Direct and Indirect Costs <sup>f</sup>
2–9.99	9.05	7.91	16.96	16.36	25.16
10–19.99	7.24	4.39	11.63	9.65	18.15
20–39.99	7.01	2.69	9.70	12.48	18.18
40–59.99	6.96	1.76	8.72	13.65	17.95
60–79.99	6.74	1.46	8.20	11.31	16.35
80–99.99	6.47	1.44	7.91	8.91	14.14
100–199.99	6.03	1.03	7.06	7.16	12.78
200–499.99	5.67	0.86	6.53	5.70	11.10
500–up	5.21	0.51	5.72	7.53	10.36
Total	7.31	3.69	11.00	12.05	18.69

Notes: There are 1,767 domestic operating company IPOs in the sample. The first four columns express costs as a percentage of the offer price, and the last column expresses costs as a percentage of the market price.

\*Total proceeds raised in the United States, excluding proceeds from the exercise of overallotment options (SDC variable: PROCDS).

<sup>b</sup>Gross spreads as a percentage of total proceeds (including management fee, underwriting fee, and selling concession) (SDC variable: GPCTP).

<sup>c</sup>Other direct expenses as a percentage of total proceeds (including registration fee and printing, legal, and auditing costs) (SDC variables: EXPTH/(PROCDS)\*10).

<sup>d</sup>Total direct costs as a percentage of total proceeds (the average total direct costs are the sum of average gross spreads and average other direct expenses).

<sup>e</sup>Initial return =  $100 * \{[\text{closing price one day after the offering date (SDC variable: PR1DAY)/offering price (SDC variable: P)}] - 1\}$ . If PR1DAY is missing, PR2DAY is used.

<sup>f</sup>Total direct and indirect costs =  $(d + e)/(1 + e/100)$ , computed for each issue individually (excluding firms with other expenses or initial returns missing), and then averaged, where  $d$  is the percentage of total direct costs, and  $e$  is the percentage initial return.

the average spread up. In other words, the average spread of only seventy-two basis points for this category is not a typographical error.

Although not reported in any table, the average maturity of bond offerings is about ten years for all of the proceeds categories and investment grades.

### *Initial Public Offerings*

In Table 4 we report not only the direct costs for IPOs, but also the indirect costs of short-run underpricing.<sup>7</sup> Inspection of the table reveals that, consistent with previous findings, IPOs are underpriced on average. With average direct costs of 11.0 percent and average initial returns of 12.0 percent, a typical

<sup>7</sup>We compute the average initial return only for those offerings for which SDC reports the market price at the end of the first day of trading or, if this is missing, at the end of the second day of trading. In computing the average direct and indirect cost, we compute this number for each individual firm for which we have the gross spread, other expenses, and the initial return, and then compute the average.

issuer with an offer price of \$10.00 receives net proceeds of \$8.90 on a share that trades at \$11.20. Taking the difference between the market price and the amount realized of \$8.90, the total direct and indirect costs amount to \$2.30, which is 20.5 percent of the market value of \$11.20. In Table 4 the average direct and indirect cost as a percentage of market value is 18.7 percent, since the average that is reported is the average of this percentage for each firm. (The average ratio of costs to market value is different from the ratio of the averages.) This number is less than the 21.2 percent that Ritter (1987) reports for firm commitment offerings from 1977 to 1982 for several reasons. First, our 1990–94 sample period reveals less underpricing than in 1977–1982. Second, we exclude offerings of less than \$2 million, whereas he includes them. Third, spreads have experienced some downward movement the past fifteen years.<sup>8</sup> Still, the direct and indirect costs of going public are substantial.<sup>9</sup>

Note that we may be understating the extent of the economies of scale. This is because we are not including the value of any warrants granted to underwriters as part of their compensation. These warrants are common among small, speculative offerings underwritten by less-prestigious underwriters. Their inclusion would boost the average costs of the smallest offerings, but not the larger offerings. For evidence on the quantitative effect of this omission, see Barry, Muscarella, and Vetsuypens (1991) and Dunbar (1995).

While the average gross spread on IPOs is 7.31 percent, we find a large “bunching” at exactly 7.00 percent. Most issues with proceeds of \$20–\$60 million have a spread of exactly 7 percent, as shown in the Appendix table.

For IPOs, we include the indirect cost of underpricing in Table 4, but we do not include this as a cost for other security offerings. This is because of the lack of economically important underpricing effects for other offerings. Smith (1977) documents underpricing of 0.5 percent for SEOs. We suspect that much of this represents the practice of pricing the offering at the bid price, rather than the mean of the bid and the ask price, and the tendency to round down to the nearest eighth or integer. For example, if a stock traded at \$30.125 bid and \$30.375 ask, it would be common to set a \$30.00 offer price. Depending upon which price had been the most recent transaction price, this would be measured as underpricing of either 0.4 percent or 1.2 percent. Barclay and Litzenberger (1988) report excess returns of 1.5 percent for SEOs during the month after issuing. Since companies typically issue after a large stock price run-up, it is not clear how much of this 1.5 percent is due to momentum effects, and how

---

<sup>8</sup>Calomiris and Raff (1995) report that for convertible bonds, the average spread in 1963–65 was 3.7 percent and in 1971–72 it was 3.2 percent. Our 1990–94 sample has an average spread of 2.9 percent.

<sup>9</sup>Beatty and Welch (1996) report the average direct and indirect costs for a sample of 980 IPOs from 1992 to 1994. Whereas we aggregate auditing, legal, printing, and other direct expenses, they report audit expenses and legal expenses separately. For all proceeds classes, legal expenses are slightly higher than auditor expenses.

**TABLE 5. Number of Issues Containing an International Tranche for Domestic Operating Companies That Are Issuing, 1990–94.**

Proceeds (\$ millions)	Equity				Bonds			
	IPOs Int'l Tranche?*		SEOs Int'l Tranche?		Convertible Int'l Tranche?		Straight Int'l Tranche?	
	Yes	No	Yes	No	Yes	No	Yes	No
2–9.99	2	335	4	163	0	4	1	31
10–19.99	12	377	12	298	1	13	0	78
20–39.99	45	488	36	389	3	15	0	89
40–59.99	40	175	42	219	0	28	4	86
60–79.99	33	46	45	98	1	46	8	84
80–99.99	25	26	30	41	9	4	2	110
100–199.99	81	25	72	80	22	35	14	395
200–499.99	39	8	48	7	14	13	13	157
500–up	10	0	8	1	2	1	2	18
<b>Total</b>	<b>287</b>	<b>1480</b>	<b>297</b>	<b>1296</b>	<b>52</b>	<b>159</b>	<b>44</b>	<b>1048</b>

Notes: Closed-end funds (SIC 6726), REITs (SIC 6798), ADRs, and unit offerings are excluded from the sample. Rights offerings for SEOs are also excluded. Bond offerings do not include securities backed by mortgages and issues by Federal agencies (SIC 6011, 6019, 6111, and 999B). Only firm commitment offerings and nonshelf-registered offerings are included. Standard Industrial Classification (SIC) codes are from Securities Data Co. (SDC).

\*If  $(TOTDOLAMT/PROCDS) > 1.05$ , the issue is treated as having an international tranche. TOTDOLAMT is the total proceeds raised globally, and PROCDS is the total proceeds raised in the United States.

much is due to issue effects. Kang and Lee (1996) document that convertible bonds are underpriced by about 1 percent on average. Straight bonds, especially those with high credit ratings, seem to be underpriced very little.

### *International Tranches*

In Table 5 we report the frequency with which domestic operating companies include an international tranche in their offerings. Recall that we are excluding Eurobonds from our debt offerings and ADRs from our equity offerings. Inspection of the table reveals that equity offerings and convertibles that raise less than \$60 million in domestic trading rarely include an international tranche. Straight debt offerings, no matter what their size, rarely include an international tranche. Now, foreign investors can always participate in a domestic offering regardless of whether it is explicitly marketed overseas. Thus, the existence/nonexistence of an international tranche largely reflects the degree to which

the selling efforts are expanded to find international buyers. Domestic operating companies issuing debt with foreign buyers in mind frequently issue Eurobonds.<sup>10</sup>

### *Overallotment Options*

The Rules of Fair Practice of the National Association of Security Dealers (NASD) permit firm commitment offerings to include an overallotment option, where more securities can be sold if demand is strong.<sup>11</sup> Since August 1983, the size of this overallotment option has been limited to 15 percent of the issue size. Investment bankers typically have thirty days to exercise this option. In practice, investment bankers typically presell at least 115 percent of the offering, and then stand ready to buy back the incremental 15 percent if demand is weak when some of the buyers immediately sell their securities (a practice known as “flipping”).<sup>12</sup>

The NASD Rules of Fair Practice require that investment bankers sell securities at or below the stated offer price. Normally, all of the securities are sold at the offer price, but occasionally, if demand is weak, the investment banker winds up selling some of the securities below the offer price. In this arrangement the underwriter writes a put option to the issuing firm, with the value of this put included in the gross spread. The overallotment option can be viewed as a call option that the issuing firm has written, where investors hold this call.

On securities sold through the exercise of overallotment options, investment bankers collect the same gross spread as on the rest of the issue. However, since the direct expenses do not change, these fixed costs are spread over a larger issue size. Thus, the total direct cost numbers that we report would be lower if overallotment options were included in the gross proceeds. On the other hand, since overallotment options are generally exercised only if the issue is underpriced, the value of this call option is a cost to the issuing firm that we do not include in our total cost calculations.

In Table 6 we report the frequency with which overallotment options are used and the frequency with which they are exercised. Inspection of the table reveals that in recent years, essentially all IPOs have included an overallotment option. The vast majority of SEOs and convertibles include an overallotment option, but straight bond issues rarely do.

---

<sup>10</sup>The relative yields on Eurobonds versus domestic bonds also play a role in the decision of what to issue (see Kim and Stulz (1988)).

<sup>11</sup>Overallotment options are sometimes called Green Shoe options. The Green Shoe Company was apparently the first company to use one.

<sup>12</sup>See Schultz and Zaman (1994) for evidence on the exercise of overallotment options on IPOs. With IPOs, if the underwriter expects aftermarket demand to be weak, 135 percent of the issue may be presold, with the underwriter's taking a naked short position equal to the amount exceeding 115 percent of the offering. This allows the underwriter to support, or stabilize, the price by buying back the increment in open market purchases. These shares are then treated as if they were never issued. If the underwriter expects the price to jump, typically only 115 percent of the issue size will be presold, to avoid losing money on a naked short position.

TABLE 6. Number of Issues Containing an Overallotment Option, for Domestic Operating Companies That Are Issuing, 1990-94.

Proceeds (\$ millions)	Equity										Bonds					
	IPOs			SEOs			Convertible				Straight					
	Overallotment Option?			Overallotment Option?			Overallotment Option?				Overallotment Option?					
	Yes	No <sup>d</sup>	?	Yes	No	?	Yes	No	?	Yes	No	?	Yes	No	?	
	Yes <sup>a</sup>	No <sup>b</sup>	?	Sold?			Sold?				Sold?					
2-9.99	159	115	51	12	100	41	21	5	0	0	4	0	1	0	4	27
10-19.99	198	151	40	0	209	58	38	5	1	2	8	3	2	1	4	71
20-39.99	306	164	60	3	269	100	49	7	4	2	8	4	6	0	9	74
40-59.99	123	67	25	0	173	50	33	5	6	6	13	3	1	0	1	88
60-79.99	45	27	7	0	81	37	21	4	21	6	16	4	3	0	0	89
80-99.99	25	17	9	0	44	9	15	53	10	0	3	0	0	1	1	10
100-199.99	54	34	16	2	96	24	28	4	23	2	28	4	4	1	3	401
200-499.99	21	17	8	1	35	4	14	2	7	2	15	3	3	1	1	165
500-up	6	0	3	1	6	2	1	0	0	0	3	0	0	0	1	19
Total	937	592	219	19	1013	325	220	35	72	20	98	21	20	4	24	1044

Notes: Closed-end funds (SIC 6726), REITs (SIC 6798), ADRs, and unit offerings are excluded from the sample. Rights offerings for SEOs are also excluded. Bond offerings do not include securities backed by mortgages and issues by Federal agencies (SIC 6011, 6019, 6111, and 999B). Only firm commitment offerings and nonself-registered offerings are included. Standard Industrial Classification (SIC) codes are from Securities Data Co. (SDC).

<sup>a</sup>If OVERAMT > 0 and OVERC = Yes, where OVERAMT is the amount that can be raised through the overallotment option and OVERC is "Yes" if any overallotment option is exercised.

<sup>b</sup>If OVERAMT > 0 and OVERC = No.

<sup>c</sup>If OVERAMT > 0 and OVERC = Missing.

<sup>d</sup>If OVERAMT = "-"; this may include offerings with missing data on OVERAMT.

**APPENDIX. Interquartile Range of Direct Costs as a Percentage of Gross Proceeds for Equity (IPOs and SEOs) and Straight and Convertible Bonds Offered by Domestic Operating Companies, 1990-94.**

Proceeds* (\$ millions)	Equity						Bonds					
	IPOs			SEOs			Convertible Bonds			Straight Bonds		
	GS <sup>b</sup>	TDC <sup>c</sup>		GS	TDC		GS	TDC		GS	TDC	
2-9.99	8.00-10.00	14.34-19.23		6.50-10.00	10.03-16.16		5.45-6.69	7.38-10.04		0.64-3.38	3.47-6.21	
10-19.99	7.00-7.14	9.94-12.44		5.74-6.94	7.42-9.63		4.25-6.00	6.65-9.70		0.35-2.90	1.55-5.68	
20-39.99	7.00-7.00	8.82-10.09		5.22-6.00	6.19-7.57		3.00-5.00	4.56-6.50		0.57-3.00	1.10-4.55	
40-59.99	7.00-7.00	8.23-9.00		4.73-5.48	5.26-6.31		2.88-3.50	3.63-4.65		0.15-0.71	0.91-2.88	
60-79.99	6.55-7.00	7.69-8.51		4.24-5.00	4.51-5.70		2.50-3.00	2.83-3.54		0.65-3.00	0.94-3.64	
80-99.99	6.21-6.85	7.26-8.44		3.87-4.75	4.22-5.38		2.25-3.00	2.56-3.66		0.63-2.76	0.94-3.70	
100-199.99	5.72-6.47	6.43-7.49		3.15-4.47	3.38-4.89		2.15-2.75	2.36-3.19		0.65-2.75	1.01-3.55	
200-499.99	5.29-5.86	5.92-6.78		2.79-3.58	2.92-3.79		1.25-2.50	1.40-2.69		0.65-2.63	1.43-3.16	
500-up	5.00-5.37	5.33-5.95		2.75-3.00	2.82-3.17		1.00-2.50	1.11-2.60		0.29-2.75	1.05-3.18	
Total	7.00-7.05	8.57-12.04		4.51-6.08	5.12-8.20		2.25-3.00	2.66-3.96		0.60-2.75	1.02-3.60	

Notes: Closed-end funds (SIC 6726), REITs (SIC 6798), ADRs, and unit offerings are excluded from the sample. Rights offerings for SEOs are also excluded. Bond offerings do not include securities backed by mortgages and issues by Federal agencies (SIC 6011, 6019, 6111, and 999B). Only firm commitment offerings and nonself-registered offerings are included. Standard Industrial Classification (SIC) codes are from Securities Data Co. (SDC).

\*Total proceeds raised in the United States, excluding proceeds from the exercise of overallocation options (SDC variable: PROCDS).

<sup>b</sup>Gross spreads as a percentage of total proceeds (including management fee, underwriting fee, and selling concession) (SDC variable: GPCTP).

<sup>c</sup>Total direct costs as a percentage of total proceeds (total direct costs are the sum of gross spreads and other direct expenses).

The frequency with which overallotment options are exercised varies across security type. In Table 6 we use the SDC classification where an overallotment option is considered to be exercised as long as at least part of it is exercised. In practice, most overallotment options are for 15 percent of the issue size. Most commonly, either all or none of the additional shares are sold, but sometimes only part of the overallotment option is exercised. On securities sold as part of an overallotment option, the spread is the same as on the rest of the issue.

#### IV. Conclusions

Firms have many choices for financing their activities: internal versus external, private versus public, and debt versus equity. This article focuses on public external financing and documents the cost of this financing from 1990 to 1994. We report the direct costs of raising capital for IPOs, SEOs, convertible bonds, and straight bonds. These are, respectively, 11.0 percent, 7.1 percent, 3.8 percent, and 2.2 percent of the proceeds. We find substantial economies of scale for all types of securities, although for straight bond offerings, these are largely exhausted for proceeds over \$40 million. Spreads on bonds are sensitive to credit quality, with gross spreads more than 200 basis points higher on noninvestment-grade issues. Except for bonds, most large issues include an international tranche.

#### References

- Barclay, M. J. and R. H. Litzenberger, 1988, Announcement effects of new equity issues and the use of intraday price data, *Journal of Financial Economics* 21, 71–99.
- Barry, C., C. J. Muscarella, and M. R. Vetsuypens, 1991, Underwriter warrants, underwriter compensation, and the costs of going public, *Journal of Financial Economics* 29, 113–35.
- Beatty, R. P. and I. Welch, 1996, Issuer expenses and legal liability in initial public offerings, *Journal of Law and Economics*, Forthcoming.
- Bhagat, S. and P. A. Frost, 1986, Issuing costs to existing shareholders in competitive and negotiated underwritten public utility equity offerings, *Journal of Financial Economics* 15, 233–59.
- Calomiris, C. W. and D. M. G. Raff, 1995, The evolution of market structure, information, and spreads in American investment banking, in M. B. Bordo and R. Sylla, eds., *Anglo-American Finance: Financial Markets and Institutions in 20th Century North America and the U.K.* (Business One-Irwin, Homewood, IL), 103–60.
- Dunbar, C. G., 1995, The use of warrants as underwriter compensation in initial public offerings, *Journal of Financial Economics* 38, 59–78.
- Hansen, R. S., 1988, The demise of the rights issue, *Review of Financial Studies* 1, 289–309.
- Hansen, R. S. and J. Pinkerton, 1982, Direct equity financing: A resolution of a paradox, *Journal of Finance* 37, 651–65.
- Hansen, R. S. and P. Torregrosa, 1992, Underwriter compensation and corporate monitoring, *Journal of Finance* 47, 1537–55.
- Kang, J. and Y. Lee, 1996, The pricing of convertible debt offerings, *Journal of Financial Economics*, Forthcoming.

- Kim, Y. C. and R. M. Stulz, 1988, The Eurobond market and corporate financial policy: A test of the clientele hypothesis, *Journal of Financial Economics* 22, 189–205.
- Ritter, J. R., 1987, The costs of going public, *Journal of Financial Economics* 19, 269–81.
- Schultz, P. H. and M. A. Zaman, 1994, Aftermarket support and the pricing of initial public offerings, *Journal of Financial Economics* 35, 199–219.
- Smith, C. W., 1977, Alternative methods for raising capital: Rights versus underwritten offerings, *Journal of Financial Economics* 5, 273–307.