

# ANGLO-AMERICAN FINANCIAL SYSTEMS

Institutions and Markets in the  
Twentieth Century

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Edited by  
MICHAEL D. BORDO  
and  
RICHARD SYLLA

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## CHAPTER 4

### THE EVOLUTION OF MARKET STRUCTURE, INFORMATION, AND SPREADS IN AMERICAN INVESTMENT BANKING

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Charles W. Calomiris  
Daniel M.G. Raff

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#### INTRODUCTION

The fees investment bankers earn for placing primary securities issued by their clients have occupied a central place in the debate over the proper regulation of investment banking since at least the beginning of the twentieth century. In his classic attack on the “money trust,” *Other People’s Money and How the Bankers Use It*, Louis Brandeis argued that the enormous fees earned by investment bankers—particularly on stock issues—offered conclusive proof of the existence of substantial rent extraction by the “money trust.” Brandeis (1914, p. 95) noted that Morgan’s gross commission (or “spread”) exceeded 20 percent for the organization of U.S. Steel and was 25 percent for underwriting the Tube Trust. More generally, Brandeis (p. 95) wrote:

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Nor were monster commissions limited to trust promotions. More recently, bankers' syndicates have, in many instances, received for floating preferred stocks of recapitalized industrial concerns, one-third of all the common stock issued, besides a considerable sum in cash. And for the sale of preferred stock of well established manufacturing concerns, cash commissions (or profits) of from 7 1/2 to 10 percent of the cash raised are often exacted. On bonds of high-class industrial concerns, bankers' commissions (or profits) of from 5 to 10 points have been common.

Brandeis considered it self-evident that such commissions could only be produced by an excessive concentration of power in the investment banking industry that gave rise to an effective monopoly over the financial market. This interpretation of investment banking spreads, and of the investment banking industry, underlay the Pujio Committee hearing of 1912-1913 and the Progressive movement's support of the Clayton Act of 1914, which limited bankers' roles on corporate boards of directors. The same concern over the social costs of excessive concentration of power in large New York City banks encouraged the separation of commercial and investment banking in the Banking Act of 1933 (Calomiris and White, 1994). The concern over the "money trust" that persisted into the 1930s was that commercial banks were using interbank deposits to finance the activities of their investment banking operations. The control over the nation's interbank deposits by a handful of large New York bankers gave the impression that Wall Street had a monopoly over the money market which it employed to secure special power over the origination and marketing of securities. The jaundiced view of Wall Street continued even after the Great Depression reforms, as illustrated by the antitrust suit (*U.S. v. Morgan et al.*) brought by the U.S. government against the investment banking industry in 1947.

An alternative interpretation of investment bankers' spreads focuses on underwriting risk and frictions in the market for buying securities from investment bankers or their dealers rather than the degree of concentration within the investment banking industry. According to this view, underwriting risk and the information and transaction costs that make it costly to place securities, explain investment bankers' fees.<sup>1</sup> This approach to the costs of placing securities emphasizes the role of investment banking syndicates as mechanisms for credibly communicating information about the characteristics of firms and about the preferences of investors.<sup>2</sup> Hansen (1986, p. 43) summarized this approach to understanding underwriting compensation:

One of the most important roles of the syndicate, then, is to overcome this information gap and provide investors with the assurance that the securities are fairly valued on the basis of management's view of the company's future profitability. When pricing the new shares, syndicate managers repeatedly put their reputation on the line with the purchasing public. To protect their reputation, the syndicate managers investigate and audit the issuing firm's activities; and this process, combined with the sharing of risk by the syndicate, certifies for investors the value of the newly issued shares.

Of course, these two extreme interpretations of bankers' spreads (pure rents *v.* pure costs) are not the only possibilities. Both factors could be important, and there might be interactions between the two explanations. Without some frictions in the markets for placing securities, it would be virtually impossible for investment bankers to extract rents since firms could always choose simply to auction securities directly to buyers. Furthermore, some payments to bankers in excess of marketing costs may be a necessary cost of underwriting as a means to preserve truth-telling incentives of the banker. It is possible to argue that high fees make investment bankers' reputations worth preserving.

This paper reports empirical evidence on U.S. investment banking spreads over the past seventy years. We doubt whether analysis of spread data will ever definitively demonstrate the absence or presence of economic profits. Our empirical objectives in this paper are more modest. We describe differences in spreads across time, issuers, investment banking houses, types of securities, and countries, and consider whether these differences in spreads are best explained by differences in the degree of investment bankers' market power in the various transactions or by differences in the underlying costs of placing securities.

The second section describes the salient findings of the existing empirical literature on the determinants of investment banking compensation. The third section discusses the related empirical literature on equity issuers' choices among methods of placing issues. In the fourth section we provide new evidence from the pre-1933 period on commissions based on the transaction accounts ("deal books") of Lehman Brothers for this period, and we use these and other data from the Pecora Hearings and SEC reports to construct comparable measures of bankers' spreads for the period 1925-1940 for various types and sizes of securities issues and methods of underwriting. The fifth section reviews the important trends in corporate finance that coincided with the dramatic decline of U.S. spreads after the 1930s. The sixth section complements

this with new evidence on cross-sectional determinants of common stock spreads for 1950 and 1971 and analyzes changes in those determinants over time. The seventh section concludes.

### EMPIRICAL STUDIES OF U.S. BANKERS' SPREADS ON PRIMARY SECURITIES OFFERINGS

Investment banker commissions, or spreads, are defined as the difference between the price paid by buyers and the price received by issuers for securities flotations. They measure a large part of the compensation to the investment banking house but are only one component of the cost to firms of bringing a new issue to market. Spreads are the appropriate measure to focus upon for our purpose—explaining differences in the compensation received by investment bankers—although even for this purpose they are only a partial measure.<sup>3</sup>

The earliest formal studies of U.S. investment banking spreads of which we are aware are those of Cohan (1961) and Mendelson (1967).<sup>4</sup> These studies established the following important facts about spreads in the post-SEC period: Spreads are highest for common stocks, followed by preferred stocks, with the lowest spreads on bonds. Spreads on all securities fall as the amount of issue, or the size of the firm, increases. Size effects are substantially reduced, both for bond and stock issues, when other variables are taken into account. Bond issue spreads rise with the yield of the bond, and both bond and stock issue spreads are lower for "high-quality" firms.<sup>5</sup> Spreads on public offerings of stocks are higher than spreads on rights offerings. Utility stocks have lower spreads, *ceteris paribus*. Stock issues that include "sweeteners" (e.g., warrants), which Mendelson argued serve as a proxy for less-seasoned issuers, have higher spreads, *ceteris paribus*. The absence of a firm price commitment by the underwriter, *ceteris paribus*, was associated with higher spreads on stocks in 1960 and 1961, but this effect was essentially zero in his 1949 sample. This counterintuitive result does not indicate that the underwriter's price insurance has negative value. Mendelson argued that it, like the sweetener variable, serves as an indicator of the quality (seasoning) of the issuer.<sup>6</sup> Investment bankers were less willing to offer price guarantees on unseasoned firms. Stocks with low offering prices (which Mendelson viewed as an indicator of a lack of seasoning) also had higher spreads, *ceteris paribus*.

Mendelson documented that the average change in common stock

spreads between 1949 and 1961 is slightly positive, but he argued that this masks two related trends that pushed in opposite directions. Costs were indeed falling. But as the cost of bringing relatively high spread shares to market fell over time, more of those issuers were attracted to the market. Thus cost reductions do not show up unambiguously in annual averages because the mix of issuers shifts in the direction of higher average spreads. Mendelson compared results of regressions of common stock offering characteristics on the bankers' spread for samples from 1949 and 1961. The average spread for his samples rose from 7.9 percent in 1949 to 11.2 percent in 1961. Mendelson calculated that (using the 1949 coefficients) it would have cost the 1961 sample of issuers 20.3 percent on average to bring their issues to market in 1949. In contrast, if the sample of 1949 issuers had brought their shares to market in 1961 (using the 1961 coefficients) the spreads would have fallen by a trivial 0.4 percent to an average of 7.5 percent.

Mendelson's decompositions indicated that for many issuers (e.g., a large, mature utility company offering stock through a rights offerings rather than a sale to the public), spreads did not fall significantly from 1949 to 1961; but for small, unseasoned manufacturing firms, costs of issuing that were prohibitive in 1949 had fallen dramatically by 1961, and this decline in costs of issuing help to explain the increasing propensity of those firms to issue stock.

Mendelson also documented important facts about underwriters for the years 1960 and 1961. As shown in Tables 4-1 and 4-2, the larger the capital of the underwriter and the older the underwriter, the smaller the average spread the underwriter charges and the less likely it is that the underwriter will engage in deals that involve negotiable extras (an indicator of a lack of seasoning). Mendelson points out that, in large part, these results reflect the fact that underwriting large issues requires access to large amounts of capital. Large issuers, therefore, tend to be matched with large underwriters, and smaller underwriters do more business with small, unseasoned firms.

Mendelson's econometric work offers substantial support for the view that underwriting compensation is closely related to the economic costs of bringing stock issues to market. Characteristics of issuers that indicate the degree of "seasoning"—which should affect the cost of marketing securities—are among the most important determinants of issuing cost. The characteristics of investment bankers play a secondary role, and here the larger investment banking houses (those most plausibly able to exercise market power) charged lower spreads than other

**TABLE 4-1**  
**Average Spread (Percent) on Common Stock by Age and Size of Principal Underwriter, 1960 and 1961**

Age of Underwriter (years)	Capital Class of Underwriter								
	\$25,000	\$25,000 to less than \$150,000	\$150,000 to less than \$1 million	\$1 million to less than \$5 million	\$5 million to less than \$10 million	\$10 million to less than \$25 million	\$25 million and over	Not Available	All Sizes
1-9	17.6	14.5	13.1	11.2	10.6	15.3	- <sup>a</sup>	16.1	13.6
10-19	-	11.0	12.0	10.8	-	-	6.3	15.8	10.1
20-29	6.7	11.0	12.0	9.5	8.6	5.7	6.3	23.6	9.8
30 and over	-	12.5	10.1	8.8	7.9	7.6	7.2	8.5	8.1
Not available	18.8	-	7.0	-	-	-	-	7.1	11.0
All ages	16.2	13.8	12.4	9.5	8.5	7.5	6.9	15.3	10.2

<sup>a</sup> Dash (-) equals zero or too small to be recorded.

Source: Mendelson, 1967, p. 475.

**TABLE 4-2**  
**Percent of Common Stock Issues with Negotiable Extras,<sup>a</sup> 1960 and 1961**

Age of Underwriter (years)	Capital Class of Underwriter								
	\$25,000	\$25,000 to less than \$150,000	\$150,000 to less than \$1 million	\$1 million to less than \$5 million	\$5 million to less than \$10 million	\$10 million to less than \$25 million	\$25 million and over	Not Available	All Sizes
1-9	80	96	85	50	71	- <sup>b</sup>	13	100	85
10-19	-	100	60	33	-	-	-	-	35
20-29	-	25	80	38	-	-	-	100	37
30 and over	-	100	50	19	4	11	10	-	15
Not available	100	-	100	-	-	-	-	-	67
All ages	71	86	77	30	16	10	10	75	41

<sup>a</sup> Negotiable extras are defined as warrants or underpriced stock offerings attached to the common stock issue.

<sup>b</sup> Dash (-) equals zero or too small to be recorded.

Source: Mendelson, 1967, p. 477.

bankers, *ceteris paribus*. Otherwise, identical issues are much less expensive to place if they are issued to stockholders rather than to the public. This is consistent with an important role for marketing costs in determining spreads.

In a similar vein, Calomiris (1993, 1995) compares investment banking spreads and issuing activity in Germany prior to World War I with those in the United States then and later (shown in Tables 4-3 and 4-4).<sup>7</sup> Germany's universal banks underwrote and placed stock of manufacturing firms through their nationwide branching networks of trust accounts. During this period, the ratio of stock issues to bond issues in Germany was double that of the United States. Spreads averaged under 4 percent on common stock flotations for the period 1893 to 1913 and did not vary importantly by size of issue or size of firm. Germany's smallest manufacturing firms were able to place equity publicly in the 1890s at lower cost than large American firms paid for placing stocks in the 1990s. Marketing cost differences, rather than market power differences, seem to account for the higher costs of equity issues in the United States. Germany's underwriting industry was highly concentrated, with a handful of banks accounting for almost all the underwriting activity, in stark contrast to the less concentrated American underwriting market of the 1960s (and earlier).

German bankers were able to keep costs down, however, because the market for securities was largely internal to the banking system. Universal banks placed securities with their customers and, thus, were able to reap economies of scale in marketing. Long-term relationships between universal banks and firms minimized costs associated with monitoring and controlling the use of funds and distributing junior securities to investors willing to hold them. This was a two-sided relationship. Banks were able to provide low-cost finance to firms because trust customers were willing to hold junior claims on firms; this willingness reflected confidence by trust customers in bank discipline over firms, which was made possible by concentration of control over stock within the bank (as banks controlled proxies from their trust accounts) and by underwriter/trust managers' incentives to control and evaluate firms' risks properly.

In the United States, in contrast, the large-scale firm of the second industrial revolution received its external finance through the placement of senior securities. As Navin and Sears (1955) note, common stock flotations of industrial enterprises were too difficult to market in the

**TABLE 4-3**  
Bankers' Spreads and Total Issuing Costs for German Stock Issues, 1893-1913 (Percent of Issue)

	Mean Bank Spread <sup>a</sup>	Mean Total Cost <sup>b</sup>
<i>All issues</i>	3.67	5.08
Electricity	13	12
No. firms	21	20
No. observations	3.90	5.30
Manufacturers	19	15
No. firms	30	20
No. observations		
<i>Issues less than DM 1 million</i>	3.94	5.24
Electricity	4	3
No. firms	7	3
No. observations	3.45	5.29
Manufacturers	10	10
No. firms	18	15
No. observations		
<i>Firms with 1913 capital less than DM 2 million</i>	4.11	5.93
Manufacturers	3	5
No. firms	6	5
No. observations		

<sup>a</sup> Percent bankers' spreads are defined as the difference between the amount paid for an issue by purchasers and the amount paid by the banker to the issuing firm divided by the total amount paid for the issue.

<sup>b</sup> Total costs include taxes, printing costs, and commissions.

Source: Calomiris, 1995, table 7.

**TABLE 4-4**  
Costs of Flotation of Primary Common Stock Offered Through Dealers

Date	Size of Issue	Number of Issues	Average Cost (%)
1935-1938	< \$5 million	241	18
1945-1949	< \$5 million	208	15
1951-1955	< \$5 million	178	15
1963-1965	< \$5 million	369	12
1940	> \$5 million	11	12
1945-1949	> \$5 million	49	8
1951-1955	> \$5 million	52	6
1963-1965	> \$5 million	107	7

Source: Calomiris, 1995, table 10.

United States. Baskin (1988) and Calomiris (1995) attribute this to insurmountable information problems. Preferred stock became the popular means to raise funds, particularly after the benefits of seniority were proven during the depression of the 1890s. Generally, for the period prior to the 1920s, there was virtually no public issuance of common stock, and typically common stock issues resulted from refinancings of existing firms rather than financings of new projects (Doyle, 1991).

### ISSUERS' CHOICES OF HOW TO PLACE EQUITY SECURITIES: UNDERWRITING PARADOXES

According to a simple model of financing choice which abstracts from cross-sectional differences in firms' information problems or "seasoning," firms would never in equilibrium choose to use a high-cost underwriting method if lower-cost methods were available. The fact that firms sometimes do choose high-cost underwriting methods is sometimes termed the "underwriting paradox." Most of the discussion of investment bankers' spreads on equity issues in the empirical finance literature has focused on explaining "paradoxes" posed by differences in spreads across different types of issuing mechanisms (public offerings with firm price commitments by underwriters, best-effort public offerings, standby rights offerings, rights offerings without any investment bank involvement, and private placements with or without investment bank involvement).<sup>8</sup>

Recent empirical work has shown that most of the various underwriting paradoxes can be resolved by taking into account cross-sectional differences in the information problems that issuers confront in placing their securities and by examining costs of issuance other than the fees paid to investment bankers. In particular, higher fees for some types of underwriting contracts may reward underwriters for greater efforts in communicating issuers' characteristics to buyers, and this may increase the price buyers are willing to pay for issues.

Comparisons of pricing differences across choices of contract, it should be noted from the outset, are potentially subject to sample-selection bias. If firms that use high-cost methods differ from firms that use low-cost methods—because of differences in seasoning—then comparisons of average pricing effects across contracting arrangements will be biased against finding a benefit to high-cost underwriting. Firms that

expect to suffer the worst price declines from employing low-cost methods will use high-cost methods. This will tend to make it difficult to detect any advantages from high-cost underwriting methods. Comparing high- and low-cost samples of issues could even produce the counterintuitive result that high-cost methods lead to the worst underpricing.

Smith (1977) compared abnormal returns of a (small) sample of rights offerings with those of a larger sample of public offerings, holding constant systematic risk factors, and found no difference in returns around the offer date. Smith examined other potential benefits of high-cost underwriting and was unable to detect sufficient benefits to stockholders from underwriting services to justify its costs. Instead, Smith argued that managers of issuing firms may choose costly underwriting as a means to transfer resources from stockholders to management.

Subsequent work, however, has produced evidence that pricing effects differ across underwriting arrangements (typically prior to the offer date) and provided evidence of important sample-selection bias across types of offerings that tend to mask the advantages of high-cost underwriting. Hansen and Pinkerton (1982) found that in direct offers of equity in the 1970s (those without underwriter involvement) issuers had already obtained guarantees of receiving, on average, 90 percent of their desired gross proceeds. This guarantee was typically provided by either a corporate parent or another large stockholder. Over half of these companies obtained a 100 percent guarantee. Clearly, not all firms (for reasons of scale differences alone) would be able to pursue this option.

Hansen (1989) studied differences between underwritten rights offerings (standbys) and underwritten public offerings for 1963 to 1981. By focusing on these two methods, Hansen was able to eliminate the sample-selection bias that comes from including preguaranteed non-underwritten rights offerings, although some sample-selection bias undoubtedly remains. He found that firms making underwritten rights offerings "paid lower underwriting fees but incurred significantly larger price drops just prior to the offering than did firms making underwritten public offerings." He argued that the price concessions issuers needed to make to sell stock in rights offerings were in excess of the difference in underwriting costs from using public offerings. In other words, firms that used standbys might have benefited by using public offerings instead, because of the banker's greater role as a source of credible information in marketing the firm's stock in a public offering.

Similar analysis helps to explain the low frequency of use of "shelf

registration" (under Rule 415), which was allowed by the Securities and Exchange Commission beginning in 1982. Shelf registration's main supposed advantages are the flexibility it provides firms in choosing the precise timing of their offerings, and the possible increased competition among underwriters, since the firm can register prior to setting the terms of its underwriting contract. Bhagat, Marr, and Thompson (1985) showed that underwriting fees are lower for shelf registrations. Denis (1991) showed that, despite this fact, shelf registration is becoming increasingly less popular, particularly for equity issues. For 1982 and 1983, nearly 25 percent of equity issues were registered under Rule 415; fewer than 2 percent of offerings have been registered under Rule 415 since 1986; and from 1984 to 1988, only three industrial equities were shelf-registered. Denis argued that this reflects a lack of "underwriter certification" under Rule 415. Consistent with this view, Denis found that shelf equity offerings suffered larger negative price effects at the time they were announced. The 0.7-0.8 percent excess decline in price for shelf-registered issues is equal to or slightly higher than the spread cost advantage estimated by Bhagat, Marr, and Thompson (1985).

Ritter (1987) showed that best efforts account for one-third of initial public offerings (IPOs) in the United States and that initial underpricing of best-effort IPOs (the percentage difference between the offering price and the first market price) is 48 percent—more than three times the underpricing of firm-commitment IPOs. And, as noted by Mendelson (1967), best efforts tend to be associated with increases in underwriting fees. Why, then, would any firm choose to offer stock through a best effort? Sherman's (1992) answer was that the best-efforts method allows a firm to test waters for its issues and withdraw the offering if the market demand is insufficient. Issuers, therefore, benefit from the information they receive about the value of their firm's stock in the market during the offering process. Since bankers' compensation depends on the success of the offering, the best-effort compensation percentage will be high to compensate the banker for the offerings that are withdrawn from the market. In equilibrium, (ex post) good firms will pay for the information produced about (ex post) bad firms, although firms do not know their characteristics *ex ante*.

Hansen and Torregrossa (1992) investigated the importance of monitoring for explaining underwriting costs more directly. They found that, in addition to issue size and company risk, other variables that proxy for monitoring costs are significant for explaining cross-sectional

variation in common stock spreads. Controlling for risk and issue size, larger firms, firms where managers have large ownership stakes, and greater involvement by large institutional buyers all reduce spreads, which Hansen and Torregrossa interpret as evidence that lower information costs reduce spreads. Presumably, selling issues to large buyers requires less monitoring and marketing effort by underwriters because it is easier to credibly communicate information about issuers to large institutional buyers.

To summarize, the literature on differences in underwriting method generally supports the view that information costs are important determinants of the choice of offering technique for common stock and that differences in information cost help to explain variation in spreads across different issues. The equity underwriting paradox is resolved by evidence that firms of different seasoning do not have identical choice sets (Hansen and Pinkerton, 1982) and by observed pricing advantages of high-spread offering methods (Hansen, 1989; Denis, 1991).

#### UNDERWRITING SPREADS PRE- AND POST-DEPRESSION

Very little is known about underwriting costs during the decade prior to the separation of commercial and investment banking and the creation of the Securities and Exchange Commission in 1933 and 1934. The Securities and Exchange Commission published some information on bond and preferred stock issues during the period 1925-1929 (SEC, 1941c) but assembled no information on common stock issues prior to 1935. This is an important omission from the history of stock underwriting for two reasons. Stock offerings boomed during the 1920s, and most of the volume of industrial securities issued was in the form of stock; from 1923 to 1929, \$3.3 billion in industrial stock was sold compared to \$1.5 billion in industrial bonds (Friend, 1967, p. 68).

Evidence about the size of underwriting spreads prior to the separation of commercial and investment banking would also be informative about the relative importance of information costs and concentration in determining those spreads. If the "money trust" were a reality prior to 1933, then one might expect spreads to have fallen somewhat after 1933 in comparison to the 1920s, as Morgan and other banks were divided. On the other hand, if one regards the separation as unnecessary (or



possibly even disruptive to the market), then one might expect spreads to rise or remain unchanged after 1933. It would also be interesting to investigate whether the investment bank affiliates of commercial banks (like First Chicago and First Boston) charged lower or higher spreads than their New York investment banking competitors. Comparisons of averages for bond and preferred stock spreads (reported in Table 4-5) show a decrease in bond spreads but no significant change from the late 1920s to 1940 (and possibly an increase in preferred spreads). Given that preferred stock spreads began from a lower level than common, however, it is conceivable that common stock spreads may have fallen during these years.

In Tables 4-6 through 4-8, we report additional data on stock and bond spreads from the pre-1933 period which we gathered from two sources: (1) data on common stock spreads disclosed by Morgan, Kuhn-Loeb, Dillon-Read, and Drexel during the Pecora Hearings (bearing mainly on large common stock flotations) and (2) data on smaller stock and bond flotations which we assembled from the deal books of Lehman Brothers. Together these data provide a few observations over the entire spectrum of common stock issues.

The Lehman Brothers' deal books are an important new source of information for the period 1925-1933 (and afterwards). Lehman Brothers was an important actor in the marketing of equity during this period. As Carosso (1970, p. 82) notes, Lehman Brothers and Goldman Sachs were the first investment banking houses to experiment with underwriting stock issues of small manufacturing and retail firms. Beginning in 1906 with the historic underwritings of United Cigar Manufacturing and Sears, Roebuck & Co., Goldman Sachs and Lehman Brothers established a long-lasting niche as underwriters to small, growing firms, particularly in retailing.<sup>9</sup> Thus, Lehman Brothers' deal books should contain a sampling of small, unseasoned offerings of equity.

Table 4-6 summarizes the spread information from twenty-five deal books over the period 1925 to 1933. All of the stock transactions predate 1930. We only report information for deals that involved primary flotation of stock or bonds and exclude exchange offers. Table 4-7 compares Lehman's bond and preferred stock spreads with deals of similar size reported by the Securities and Exchange Commission for the pre-1933 period. Taken as a whole, these data indicate no important difference between Lehman Brothers and other underwriters during the pre-1933 period. There are small differences within individual size categories;

**TABLE 4-5**  
Percent Spreads on Bonds and Preferred Stocks, by Industry,  
1925-1929 v. 1935-1938, Issues of Less than \$5 Million

	Bonds		Preferred Stock	
	1925-1929	1935-1938	1925-1929	1935-1938
Extractive	6.7	3.6	24.2	11.9
Manufacturing	5.6	4.0	6.7	9.6
Financial	1.9	5.6	-	10.9
Merchandising	4.7	3.3	8.4	6.1
Transportation & Communication	6.2	3.3	6.5	5.9
Utilities	4.9	2.7	6.0	3.4
Others	5.4	4.5	15.1	12.8
Total	5.2	3.4	7.1	8.9

Source: SEC, 1941c, table 7.

**TABLE 4-6**  
Percent Spreads<sup>a</sup> on Issues through Lehman Brothers, by  
Security and Issue Size (\$ Millions), 1925-1933

Security Type	Less than \$0.5 million	\$0.5 million to less than \$1 million	\$1 million to less than \$2 million	\$2 million to less than \$5 million	More than \$5 million
Common only	23.0	-	14.2	7.8 <sup>b</sup>	9.3
Average Count	1	0	2	2	1
Common + Preferred	-	-	-	12.9	9.0
Average Count	0	0	0	6	3
Preferred only	-	-	13.6	5.2	5.0 <sup>c</sup>
Average Count	0	0	2	1	1
Debt only	-	-	-	7.2 <sup>d</sup>	6.5 <sup>e</sup>
Average Count	0	0	0	4	2

<sup>a</sup> Spreads for deals that involve a mixture of common and preferred are calculated as a ratio of the total amount of the joint issue. All spreads are calculated relative to the offering price of the security. Securities were omitted if they involved exchange offers or if we were unable to discover the spread.

<sup>b</sup> These two issues are each special. One is a rights offer, the other is partly a private placement.

<sup>c</sup> This is the only utility issue in the sample. It is issued with warrants.

<sup>d</sup> One of these issues is a private placement; another is issued with attached warrants.

<sup>e</sup> One of these bond issues included warrants.

**TABLE 4-7**  
Spreads on Bonds and Preferred Stock Issues<sup>a</sup> to the Public—  
Lehman Brothers,<sup>b</sup> 1925-1933 v. SEC Data for 1925-1929,  
1935-1938, by Size

	Less than \$1 Million	\$1 Million to Less than \$2 Million	\$2 Million to Less than \$5 Million	More than \$5 Million
Lehman Preferred, 1925-1933				
Average	0	13.6	5.2	5.0
Count	0	2	1	1
SEC Preferred, 1925-1929				
Average	7.5	8.0	6.9	0
Count	35	31	30	0
SEC Preferred, 1935-1938 or 1938 <sup>c</sup>				
Average	13.0	8.7	6.1	3.8
Count	135	47	24	9
Lehman Bonds, 1925-1933				
Average	0	0	7.2	6.5
Count	0	0	4	2
SEC Bonds, 1925-1929				
Average	5.7	4.9	5.2	0
Count	142	118	163	0
SEC Bonds, 1935-1938 or 1938 <sup>c</sup>				
Average	5.0	3.5	3.0	2.2
Count	100	52	58	46

<sup>a</sup> We restricted the sample to issues of preferred stock or bonds alone and to issues that did not involve the placement of shares with special parties.

<sup>b</sup> Lehman Brothers' data are taken from Lehman deal books.

<sup>c</sup> Data for small (i.e., less than \$5 million) issues are for 1935-1938, from SEC (1941c). Data for large (\$5 million and larger) are for 1938 only, from SEC (1941a).

**TABLE 4-8**  
Spreads on Common Stock Issues to the Public<sup>a</sup>—Lehman  
Brothers<sup>b</sup> and Pecora Hearings Data,<sup>c</sup> 1925-1931 v. All Issues,<sup>d</sup>  
1938-40, by Size

	Less than \$1 Million	\$1 Million to Less than \$5 Million	\$5 Million and More
Lehman, 1925-1929			
Average	23.0	14.2	9.3
Count	1	2	1
Pecora Hearings Sample, 1927-1931			
Average	0	11.7	8.8
Count	0	5	14
SEC, 1938-1940			
Average	20.7	14.8	10.4
Count	37	29	13

<sup>a</sup> In all cases, we restricted the sample to issues of common stock alone and to issues that did not involve the placement of shares with special parties.

<sup>b</sup> Lehman Brothers' data are taken from Lehman deal books.

<sup>c</sup> Pecora Hearings data are taken from the U.S. Senate (1933, passim) and mainly comprise deals managed by Dillon-Read and Kuhn-Loeb, which together account for 10 of 19 public common stock issues.

<sup>d</sup> Data from the 1930s are from SEC (1941b, 1941c).

but, given the small sample size of the Lehman deals, such variation is to be expected.

Table 4-8 provides a comparison, by size of issue, of common stock spreads for the period 1938 to 1940 with the pre-1933 common stock spreads observed from four Lehman Brothers common stock underwritings to the public and nineteen common stock underwritings reported in the Pecora Hearings. Our sample size is small because we only used information on common stock flotations where gross spreads were clearly defined and where only primary public issues of common stock were involved.<sup>10</sup> Within each size classification the spreads are similar to those in the late 1930s, although the later spreads are slightly higher. The number of observations is again small; but when the data are combined with the comparisons in Table 4-5, a clear overall impression emerges that no important change in average underwriting spreads occurred after 1933. Indeed, if Brandeis's claims about underwriting spreads for the pre-World War I era are accurate, it seems that under-

writing costs for bonds and stocks remained roughly unchanged over the first forty years of the twentieth century.

Comparisons of the pre-1933 period and the period 1938 to 1940 lend no support to the notion that the separation of commercial and investment banking, or the break-up of Morgan, significantly reduced the cost of placing securities. Spreads remained roughly the same, and initial underpricing seems to have increased. Tomic (1988) finds that the increase in underpricing is mainly attributable to the most unseasoned initial public offerings, and he links increased underpricing on those offerings to new liability regulations that placed investment bankers at risk for poor ex post performance of initial public offerings of unseasoned firms.<sup>11</sup>

Evidence of a lack of any decline in post-1933 average spreads is reinforced by the growth of private placements that occurred during the late 1930s (discussed below in detail). Private placements channeled smaller firms away from the public equity market, which should have produced a decline in average spreads because of changes in the composition of firms going public toward more seasoned issues.

Given the constant or rising costs of securities issuance after the 1930s, one might have concluded by 1940 that the high bankers' spreads of the pre-Depression era were not largely a function of pre-Depression concentration within the investment banking industry. The federal government, however, reached a very different conclusion—that more regulation was needed to break the monopoly power of the money trust and (presumably) bring down underwriting fees.

Beginning in the 1930s, the Securities and Exchange Commission experimented with the idea of requiring certain issuing firms to use sealed bids when engaging an underwriter and threatened to withhold permission from registrations with "unreasonable" spreads (Carosso, 1970, pp. 431-57). This idea was the brainchild of three private citizens, two of whom were prominent investment bankers who hoped to use competitive bidding to pry utility and railroad customers loose from their competitors (Carosso, 1970, pp. 431-42). As the rule was formally implemented, after April 1940, it applied mainly to bond issues of large utility companies and, later, railroads. Competitive bidding placed the burden of paperwork at the early stage of some securities offerings in the hands of the issuer rather than the investment banker but otherwise likely had little effect. Securities with the largest spreads were exempted from the regulation. One possible effect, however, was to favor private

placements, which were also exempted. Carosso (1970, p. 451) argues that, if anything, competitive bidding served to increase the concentration of investment banking, and its effect on spreads was small and mainly limited to the bond issues of high-quality corporations, whose spreads had averaged between 1 and 3 percent prior to the change in regulation (Carosso, 1970, pp. 451-57).

Opposition to competitive bidding within the investment banking industry was probably more costly than the regulation itself. Such opposition encouraged the perception of monopoly and set the stage for the six-year ordeal of an antitrust case against the industry beginning in 1947 (Carosso, 1970, p. 461). The failure of the government to make its case and the opportunity the case gave the investment banking industry to provide detailed refutation of allegations of monopoly and conspiracy ultimately put to rest the persistent attempts to regulate investment banking syndication. As Carosso (1970, p. 495) points out:

The image of the investment banker that emerged from these disclosures was entirely different from the one that had existed before the trial started. At that time, the generally held view of the role and function of the investment banker was the one made popular by Pujio and Brandeis a generation earlier and reaffirmed by the Pecora and TNEC hearings. It was largely on the basis of their findings, which had become part of the accepted folklore, that the government tried its complaint and hoped to win its case. The trial disproved many of the misconceptions that had grown out of these earlier investigations and shattered the old myth of a Wall Street money monopoly.

The Securities and Exchange Commission's concern over possible excesses of market power by investment bankers did not end with the industry's court victory in 1953. Like the establishment in 1941 of Rule 50 on competitive bidding, Rule 415 (shelf registration) in 1982 was designed to produce a decline in the market power of bankers in their relationship with issuers. While Rule 50 sought to give the issuer greater independence from a particular banker in the early stages of the issue, Rule 415 extended this logic to allow firms to wait until the issue was about to be released to the market to enlist the help of an investment banker—which was supposed to reduce the market power of investment bankers. As discussed above, however, Denis (1991) shows that equity issuers have found little benefit from shelf registration, which belies the notion that the convention of having an investment banker managing a transaction from the beginning is costly to issuers.

## CORPORATE FINANCE TRENDS AND FINANCIAL INNOVATION AFTER THE 1930s

Comparisons across time of the size of spreads can be useful for gauging the relative importance of information/marketing costs and underwriters' market power for explaining variation in spreads. But it is difficult to construct a series over a long time period measuring underwriting costs on comparable transactions (controlling, as one should, for issue size and differences across types of issues) for three reasons. First, data for the period prior to 1936 are hard to come by. Second, as noted above, changes in underwriting costs affected the selection of firms that chose to issue securities. In particular, as the underwriting technology improved, relatively unseasoned issuers were more likely to issue securities; thus, measured declines in spreads tend to understate true improvements in the cost of underwriting. Third, our sources do not consistently report underwriting costs other than the spread (warrants, rights of first refusal, overallocation options). It is possible that the history of gross spreads does not provide an accurate picture of the changes in total underwriting cost.

Table 4-9 measures as best one can the decline in spreads from the pre-World War I period to the 1970s. We report average spreads for bonds, preferred stocks, and common stocks, and for a roughly consistent category of small manufacturing firms' issues of common stock. We also report the annual volume of public common stock issues by small manufacturing firms, which shows how changes in common stock spreads were associated with substantial changes in the number of unseasoned public stock issues. From roughly 1913 to 1930, there is some indication of a reduction in spreads for common and preferred stock and bonds. From 1930 to 1940, bond spreads continue to fall, but there is not evidence of any change in common or preferred spreads. From 1940 to the 1950s, improvements in stock spreads for small firms coincided with a decline in the annual number of stock issues by small manufacturing firms. As we will argue, this likely reflected the role of private placements as a substitute for public stock issues for unseasoned firms, rather than a true reduction in the costs of public issues for such firms. In the 1960s and 1970s, however, the cost of public stock issues was low for small manufacturing firms and the volume of such issues was high, indicating a clear reduction in spreads on public issues.

The timing of the declining trend of average spreads on securities issued to the public through underwriters (shown in Table 4-9) rein-

**TABLE 4-9**  
Percent Spreads on Primary Issues Sold to the Public through Investment Banks for Cash, 1913-1972

Date	Common			Annual Common Stock Issues Small <sup>a</sup>
	Bonds	Preferred	Stock	
circa 1913 <sup>b</sup>	5-10	7.5-10	20-25	above 20
1912-1915 <sup>c</sup>	4	8-14	above 20	above 20
1925-1931			9-23 <sup>d</sup>	14-23 <sup>e</sup>
1926-1929 (large) <sup>f</sup>	3.1	7.1		
1925-1929 (small) <sup>g</sup>	5.2			
1935-1938			16.4	17.4 <sup>h</sup>
1935-1938 (small) <sup>g</sup>	3.4	8.9		43 <sup>i</sup>
1938	2.6	10.5	20.0	28
1939	1.9	8.8	16.6	42
1940	2.1	7.4	15.9	42
1951, 1953, 1955	0.8	3.3	8.8	15
1963-1965	n.a. <sup>j</sup>	2.4	7.9	27
1971-1972	1.5 <sup>k</sup>	1.5	8.4 <sup>l</sup>	206
1992-1993	1.5	4.1	6.7	130

<sup>a</sup> The definition of "small" is adjusted in a rough manner for inflation as follows: For 1935-1940, only firms with issues less than \$1 million are included. For 1951-1965, firms with issues less than \$2 million are included. For 1971-1972, firms with issues less than \$4 million are included. For 1992-1993, firms with issues less than \$10 million are included. This roughly parallels the changes in the implicit GNP deflator for nonresidential investment, which has the following values: 1929 = 39.9, 1939 = 38.7, 1951 = 83.1, 1963 = 106, 1972 = 145.7 (Council of Economic Advisers, 1974, p. 252, and 1994, p. 274).

<sup>b</sup> These numbers are from Brandeis (1914), and no source is given.

<sup>c</sup> These numbers are from Dewing (1920, p. 150) and are reproduced in Haven (1940, pp. 31-35). The lower bound of the range for preferred stock commissions is the average for utilities; the upper bound is the average for "local industrials." No common stock data are reported. The range reported here is based on the assumption that common spreads are greater than preferred and Dewing's (1920, p. 149) statement that "very frequently the gross profit on the preferred stock of an industrial is as high as 20 percent."

<sup>d</sup> The range represents the averages for different size categories of issues. Lower spreads characterize larger issues. The limited sample is drawn from the Lehman Brothers' deal books and from the Pecora Hearings. These data are discussed in detail in the text.

<sup>e</sup> Based on data solely from the Lehman deal books, thus excluding larger issues found in the Pecora Hearings data.

<sup>f</sup> Haven (1940, p. 34) notes that this sample is not representative of bond issues generally, because it tends to include larger issues.

<sup>g</sup> Data are for issues of under \$5 million.

<sup>h</sup> These data are for 1936-1938.

<sup>i</sup> For 1963-1965, spreads on convertible bonds averaged 3.2 percent, and on other bonds, 1.1 percent. These data not only include primary offerings to the public but also "mixed" offerings of primary and secondary issues.

<sup>j</sup> Source: Brandeis (1914), Dewing (1920), Haven (1940), SEC (1941a, 1941b, 1941c, 1957, 1970, 1974), Securities Data Co. (1994), and Tables 4-6 and 4-7.

forces the view that reductions in information and marketing cost, rather than a decline in the market power of underwriters, was the crucial factor producing reductions in spreads over time. From the 1940s to the 1970s, there is no evidence that stock underwriting became more competitive, but there is substantial evidence that the costs of monitoring and marketing were reduced.

Miller (1967) examined the degree of concentration in underwriting bond flotations and stock flotations from the 1930s to the early 1960s. Table 4-10 reports his finding that concentration in stock and bond underwriting did not decline significantly over this period. In common stock underwriting, which shows the largest average spread decline from the 1930s to the 1970s, there is no increase in concentration over this period.<sup>12</sup> Furthermore, while bond spreads are much lower than stock spreads throughout this period, bond market concentration is much higher. Miller also examined whether the identity of investment banking houses that most often act as syndicate managers changes over time. As shown in Table 4-11, he found substantial changes in rankings of bankers' shares of syndication management, using three three-year periods (1935-1937, 1947-1949, and 1961-1963). Of the top ten syndicate managers in 1961-1963, only five were in the top ten in 1935-1937, and eight were in the top ten in 1947-1949. Of the top five syndicate managers in 1961-1963, only two were in the top five in 1935-1937. Clearly, there was significant opportunity for entry into and exit from the top echelons of investment banking over this period.

The secular decline in underwriting spreads was, however, associated with other trends that indicate improvement in the technology for financing corporations after the 1930s—notably the increasing extent of corporations' reliance on external funding sources as opposed to retained earnings (Table 4-12), the early growth of private placements of securities (Table 4-13), and the growing importance of institutional investors as purchasers of public securities issues (Table 4-14), particularly in the late 1950s and 1960s.

**Private Placements**

Private placements (almost exclusively in the form of debt) grew enormously in importance during the 1940s. From 1934 to 1937, private placements accounted for 12 percent of a small total of corporate offerings. By 1951, private placements accounted for 44 percent of all corpo-

**TABLE 4-10**  
Concentration in Underwriting, 1934-1963—Cumulative Percent of Securities Flotations Managed by or with the Participation of a Select Group of Underwriters

Panel A: Flotations Managed						Total Volume of Underwritten Flotations (\$ billions)
Period	Largest One Firm	Largest Three Firms	Largest Five Firms	Largest Ten Firms	Largest Twenty-five Firms	
1961-1963	10	22	31	46	73	Stock
1952	13	34	44	61	16	
1951	14	33	42	62	15	
1934-1938	9	24	35	51	12	Bonds
1961-1963	17	45	55	74	14.6	
1952	18	50	65	82	2.7	
1951	29	49	58	76	1.8	
1934-1938	28	49	59	76	6.4	

Panel B: Participations					
Period	Largest <sup>a</sup> One Firm	Largest <sup>a</sup> Five Firms	Largest <sup>a</sup> Ten Firms	Largest <sup>a</sup> Twenty-five Firms	
1963	4	15	26	48	All Securities
1952	5	18	30	52	
1951	5	19	30	50	
1934-1938	8	31	46	71	
1963 <sup>b</sup>	3	15	27	47	Stock
1952	4	15	25	45	
1951	4	16	27	48	
1934-1938	6	20	34	54	
1963 <sup>b</sup>	4	17	28	50	Bonds
1952	8	23	35	57	
1951	10	24	35	57	
1934-1938	9	34	50	75	

<sup>a</sup> "Largest" refers to share in type of flotation indicated. Hence, the composition of any given number of "largest" firms may vary for other types of flotations.

<sup>b</sup> Convertible bonds are included with stock.

Source: Miller, 1967, pp. 157, 163.

**TABLE 4-11**  
Ranking of Leading Syndicate Members in Numbers of Issues, Various Dates

Firm	1967-1963		1947-1949 <sup>a</sup>		1935-1937 <sup>a</sup>	
Halsey, Stuart & Co.	1	1	1	9		
White, Weld & Co.	2	10				
First Boston Corp.	3	2		1		
Kiddier, Peabody & Co.	4	7		22		
Lehman Brothers	5	3		5		
Eastman Dillon, Union Securities & Co.	6	12 <sup>b</sup>				
Merrill Lynch, Pierce, Fenner & Smith	6	8		12		
Salomon Brothers & Hutzler	6	5		10		
Blyth & Co.	9	4		5		
Smith, Barney & Co.	10	13		3		
The Ohio Company	11					
Paine, Webber, Jackson & Curtis	12	13		19		
Dean Witter & Co.	13	19				
Morgan Stanley & Co.	14	11		2		
Dillon, Read & Co.	15	16		12		
Goldman, Sachs & Co.	15	17		10		
Kuhn, Loeb & Co.	17	19		4		
Harriman, Ripley & Co.	18	6		7		
Dempsey-Tegeler & Co.	19					
Bear, Stearns & Co.	20					
F. I. duPont, A. C. Allyn	21 <sup>c</sup>					
Equitable Securities Corp.	22					
Hornblower & Weeks	23			12		
Glore, Forgan & Co.	24	21		12		
Hayden, Stone & Co.	24			22		

<sup>a</sup> Positions are recorded in 1947-1949 and 1935-1937 only for firms falling in the top twenty-five. In changed issues, each manager is credited with one issue.

<sup>b</sup> Union Securities Corp.

<sup>c</sup> Merged in 1963. Data combined for three-year period.

Source: Miller, 1967, p. 161.

**TABLE 4-12**  
Share of Funds of Nonfinancial Corporations Supplied by Internal Sources, Various Dates

Period	Percent	Period	Percent
1901-1912	55	1946-1956 <sup>b</sup>	58
1913-1922	60	1958 <sup>b</sup>	66
1923-1929	55	1960 <sup>b</sup>	69
1930-1933	( <sup>a</sup> )	1962 <sup>b</sup>	61
1934-1939	98	1901-1913	59
1940-1945	80	1913-1939	66
1946-1949	64	1940-1956	64
1946-1956	61		

<sup>a</sup> Total sources were negative.

<sup>b</sup> Department of Commerce estimates. Other data are based on Goldsmith.

Source: Miller, 1967, p. 171.

**TABLE 4-13**  
The Growth of Private Placements

Year	All		Year	All	
	Corporate Offerings	Percent Private Placed		Corporate Offerings	Percent Private Placed
1934	397	23.2	1947	6,577	34.0
1935	2,332	16.6	1948	7,078	43.6
1936	4,572	8.2	1949	6,052	41.3
1937	2,309	14.3	1950	6,362	42.1
1938	2,155	32.1	1951	7,741	44.1
1939	2,164	32.6	1952	9,534	41.5
1940	2,677	28.6	1953	8,898	36.3
1941	2,667	30.5	1954	9,516	36.6
1942	1,062	39.5	1955	10,240	32.2
1943	1,170	31.8	1960	10,154	32.3
1944	3,202	24.6	1965	15,992	51.0
1945	6,011	17.0	1967	24,798	28.1
1946	6,900	27.8	1970	38,944	12.5

Sources: SEC, 1952, p. 3; and Jarrell, 1981, p. 670.

**TABLE 4-14**  
**Percent Ownership Structure of Corporate Equities, by Sector,**  
**1946-1980**

	1946	1950	1955	1960	1965	1970	1975	1980
Households	93	91	89	86	84	79	72	70
Foundations	-	-	5	4	4	3	4	3
Investment Companies	1	2	4	5	5	5	5	3
Insurance Companies								
Life	1	2	1	1	1	2	3	3
Other	2	2	2	2	2	2	2	2
Pension Funds								
Private	0	1	2	4	6	8	10	11
Government	0	0	0	0	0	1	3	4
Foreign	3	2	2	2	2	3	4	4
Other	1	1	1	0	0	1	1	1
Total Market Value <sup>a</sup>	110	143	309	434	714	859	812	1,518

<sup>a</sup> In billions of dollars. Numbers are rounded.

Source: Munnell, 1982, p. 123.

rate offerings, 58 percent of all debt issues, and 82 percent of all debt issues of manufacturing firms (SEC, 1952, pp. 3, 5, 6). Private placements as a percentage of securities offerings peaked in the mid-1960s. The resurgence in public offerings of bonds and stocks, beginning in the 1950s, reduced the share of private placements to only 14 percent of total securities issues by 1970 (Jarrell, 1981).

From the beginning, life insurance companies accounted for the overwhelming majority of these purchases—93 percent in 1947, 83 percent in 1950—with the remainder held largely by banks—2.7 percent in 1947, 12.1 percent in 1950 (SEC, 1952, p. 6). For the period 1990-1992, Carey, Prowse, Rea, and Udell (1993) report that life insurance companies and banks (broadly defined) maintained respective share of 83 and 11 percent of the private placement market.

The Securities and Exchange Commission (1952) reported that roughly half of private placements of debt were marketed by investment bankers, with spreads ranging from an average of 0.2 percent for large issues to 1.7 percent for small issues, with a median fee of 0.85 percent.

Holding size constant, total issue costs for the late 1940s (spreads plus expenses) for private placements of debt were between 25 and 40 percent of the issue costs for public placements of debt, with the greatest savings occurring in the smallest size categories. For equity issues during this period, investment banker spreads were similar to those for bonds. Savings from private placements of equity were larger and also decreased with size; total costs of private placements of equity averaged between 10 and 20 percent of public issuing costs (SEC, 1952, pp. 26-27).

What were the advantages of private placements that allowed them to occur at so low a cost, and why did some firms choose to pay higher fees to place their securities publicly? As the Securities and Exchange Commission (1952, p. 7) remarked:

A number of instances of public utility securities sold by public offering at competitive bidding have been noted where the total cost of money to the issuer over the life of the issue was more favorable than that offered by private placement.

Recent models of the corporate finance "pecking order" are consistent with this observation. "Insider" finance—including bank lending and private placements to other intermediaries—involves costly ongoing monitoring and discipline by intermediaries, while "outsider" finance (public offerings of stocks and bonds) involves very different methods of evaluating and controlling corporate performance. Firms' costs of going to outsiders vary with their "information intensity" (Calomiris and Hubbard, 1990 and 1995; Calomiris, 1995) and fall as they become relatively seasoned credit risks (James and Wier, 1990).

Using intermediaries economizes on spreads but involves the payment of higher interest to compensate for a greater concentration of risk (in the intermediaries' portfolios) and for the ongoing costs of monitoring and control (James, 1987). Public markets have the added possible advantage of greater competition in bidding for claims on the firm. But unseasoned credit risks who use outsider sources of funding may pay higher costs of funds than they would using insiders because of outsiders' needs to attach a substantial "lemons discount" to the claims of unseasoned firms to compensate for less information about and control over credit risk (Jensen and Meckling, 1976; Myers and Majluf, 1984).

Until recently, little formal analysis has been done of private placements and their position in the pecking order. A recent monograph by

Carey, Prowse, Rea, and Udell (1993), however, shows that firms that choose private placements of debt (at least in recent years) tend to be much more "information-problematic" than bond issuers. Private placement borrowers are "typically medium-sized companies for which information is not widely available or large corporations with complex financing requirements" (p. 3). Lenders in the private placement market "produce the information required to assess the credit quality of the issuers. In addition they intensively monitor the business and financial operations of the borrowers after loans have been extended" (p. 3). Covenants in private placement lending are far more detailed than those for bonds and share many features with bank loan covenants. Borrowers in the private placement market are much less likely to have been rated by Standard and Poor's, have higher sales growth rates, and higher ratios of research and development expenditure to sales than borrowers in the public market. According to Carey, Prowse, Rea, and Udell (1993), the borrowers in the private placement market rank somewhere between bank borrowers and bond borrowers in the financial pecking order.

Because private placement borrowers are "information-problematic," the likely alternative for many private placement borrowers would be bank loans or stock issues, rather than the public bond market. The public bond market has been a relatively exclusive club. Calomiris (1995) argued that this reflects two facts: rollover costs of widely distributed issuers favor long-term public debt issues, but long-term debt increases problems of "asset substitution"—the incentives of borrowers to take on risk after placing their debt (Jensen and Meckling, 1976). Without the option to threaten to "call" a borrower's loan (not to roll it over), bondholders in the public market would have little recourse against asset substitution.

There has been little research attempting to explain the burst of growth in private placements from 1933 to 1950. One possible explanation is higher regulatory cost after 1933. New regulations on public offerings may have encouraged the development of a relatively unregulated alternative. Carosso (1970) pointed to regulatory costs—including liability laws, waiting periods, pricing policies, bidding rules, and other rules on public underwritings—that made public offerings more costly to underwriters than before. But regulatory costs by themselves cannot explain the timing in the growth of private placements, which was concentrated in the mid- to late 1940s.

The timing of the rise of private placements in the 1940s is associated with steady growth in the value of life insurance companies' re-

serves, although this does not "explain" the timing of this innovation. Insurance industry assets grew from 2.5 percent of national assets in 1929 to 4 percent in 1933; and by 1952 they had reached 6 percent (Goldsmith, 1958, p. 319). Demographic factors favoring the growth of life insurance companies (Goldsmith, 1958, pp. 27-29, 43-44) may help to explain the surge during the 1940s. Similarly, significant changes in the method of marketing life insurance policies (including the introduction of group and wholesale insurance) may have encouraged insurance company growth (Stalson, 1942).

Kemmerer (1952) stressed that the rapid growth in life insurance company assets—which grew during the 1940s by nearly a billion dollars a month—encouraged life insurance companies to find new uses for their funds and helped to usher in the age of the private placement. In fact, the proportion of life insurance companies' assets devoted to financing corporations grew even more dramatically than life insurance assets. Business finance comprised 39 percent of life insurance assets in 1933. By 1952 it was 49 percent of assets (Goldsmith, 1958, table A-8).

The retreat of life insurance companies from agricultural mortgages in the face of widespread default and mortgage moratoria in the 1920s and 1930s (Woodruff, 1937) partly explains the increasing share of business assets in life insurance company portfolios. Farm mortgages fell from 13.9 percent of assets in 1929 to 2.1 percent in 1950. Furthermore, changes in the market for U.S. government bonds—the post-World War II shrinking in outstanding bonds (Studenski and Krooss, 1963, pp. 476-80)—implied that insurance companies would have to invest a smaller proportion of their assets in government securities. Finally, the Treasury-Fed accord, which brought to an end the period of stable long-term interest rates on government bonds, encouraged greater interest in shorter term debts like those available in the private placement market. From 1945 to 1950, the assets of insurance companies increased from \$40.5 billion to \$56.5 billion. Over that same period, the asset share of U.S. government bonds fell from 48.9 percent of assets to 22.5 percent. Over that same five-year period, business debt other than that of utilities and railroads (a proxy for private placements) rose from 4.6 percent of assets to 16.8 percent. By 1952, U.S. government bonds had fallen to 13.8 percent of assets, and nonrailroad and utility debt had risen to 20.7 percent. Nonfarm mortgages were the other major category of asset growth—increasing from 13 percent of assets in 1945 to 25.1 percent of assets in 1952.<sup>13</sup>

The growth of private placements offered a new and important fi-



nancing margin for industrial borrowers. Regulations on consolidation and branching that restricted the scale of commercial banks meant that as borrowers became large, they could not rely on local commercial bankers to meet their needs at reasonable cost (Calomiris, 1995). Private placements offered a cost-effective alternative for firms that would have faced high costs of public equity issues and that did not qualify for the long-term debt market. The likely effect of private placements on equity spreads, therefore, was that they reduced the proportion of high-spread issuers that came to the public equity market. This, rather than improvements within the market for public securities, seems to explain best the reduction in average spreads during the 1940s visible in Tables 4-4 and 4-9.

### **Institutional Investors and Economies of Scale in Purchasing Securities Issues**

The 1950s and 1960s witnessed a second set of financial innovations—the growth of institutional investors (pension funds and mutual funds)—which was associated with the resurgence in public offerings during this period. Like insurance companies, which had spurred the growth in private placements, the new nonbank intermediaries also found ways of avoiding the high costs of public issue. These private placements largely took the form of private equity (venture capital) investments. But unlike the life insurance company-supported private placement revolution of the 1940s, which only affected the mix of equity issuers coming to the public market, the new institutional investors also made block purchases of public equity and thus had a direct impact on spreads by reducing the costs of placing equity issues publicly.

The growth of pension funds' and mutual funds' holdings of equity was particularly dramatic in the late 1950s and 1960s, as shown in Table 4-14. In 1946, investment companies (mutual funds) and private pension funds held 2 percent and 0.8 percent shares, respectively, of corporate equities. By 1970, those shares had risen to 5.3 and 7.8 percent, respectively. By 1980, private pensions held 10.4 percent of corporate equity, while investment companies held 4.6 percent. The growth of equity holdings by pension funds reflected more than the seventeenfold growth in total assets of these intermediaries from 1950 to 1971. As Table 4-15 shows, private pension funds holdings of common stock grew from 12 percent of their total assets in 1951 to 68 percent in 1971.

The causes of the growth of pension funds during this period have been studied by a number of scholars (including Andrews, 1964; Greenough and King, 1976; Ture, 1976; and Munnell, 1982), as has their role in placing equity in primary and secondary markets (SEC, 1971). The principle sources of early growth in pension funds were the wage controls of World War II (which favored the use of nonwage compensation for employees) and the tax exemptions enjoyed by pensions, which became increasingly valuable during the 1960s.

The rise of pensions and mutual funds as large block purchasers of equity in primary and secondary markets had dramatic effects on the structure of those markets—so dramatic that in 1971 the Securities and Exchange Commission published an enormous multivolume study, and Congress held hearings, examining these changes.

In the secondary market, institutional holders gave rise to the "two-tier" market for equity trading. In addition to the traditional small transactions for individual holders, a new market arose in block trades among large money managers, which included pension fund managers or their investment managers [particularly, Morgan Guaranty, Bankers Trust, and Citibank, which collectively managed 80 percent of the trust accounts of employee benefit plans (Munnell, 1982, p. 121)]. The main advantages of this development were improvements in market liquidity, as it became much easier to move large amounts of shares over small periods of time.

In the primary public market, institutional investors changed the way equity issues were sold. By acting as purchasers of large amounts of stock, particularly in unseasoned companies, they reduced the marketing costs normally associated with placing such stock. The Securities and Exchange Commission (1971) found that institutional investors accounted for 24 percent of all purchases of 1,684 initial public offerings of common stock from January 1967 to March 1970. Despite enormous short-term profits that some investors realized from rapid sales of initially underpriced IPOs, most institutional investors bought stocks in the primary market to hold as long-term investments.<sup>14</sup> Seventy percent of institutional IPO purchases remained unsold after twelve weeks. Institutional investors did not discriminate in their purchasing according to the size of the issuer but did tend to deal only with the largest underwriters (SEC, 1971, pp. 2348-56).

Institutional investors were very active in the venture capital market as well. In addition to their \$1.4 billion in public IPO purchases during

**TABLE 4-15**  
**Asset Shares (Percent) of Private Noninsured Pension Funds,**  
**1951-1974**

	1951	1961	1971	1974
Cash	4	2	1	4
Government Securities	31	6	2	5
Corporate Bonds	44	35	21	28
Preferred Stock	5	2	2	1
Common Stock	12	49	68	56
Own Company	na	7	6	na
Other	na	42	62	na
Mortgages	2	4	3	2
Other Assets	3	4	4	5

Source: Greenough and King, 1975, p. 139.

the period 1967-1970, institutional investors purchased \$3.5 billion of nonpublicly traded "restricted" securities (venture capital investments in equity or debt with equity features), which mainly benefited small, young firms.

In trying to explain the reductions in the spreads for small, unseasoned companies during the 1950s identified by Mendelson (1967), Friend (1967) pointed to institutional investors as the main source of improvement in market efficiency. Friend, Blume, and Crockett (1970, p. vii) wrote:

These institutions, which first sparked the cult of common stocks, later attracted public attention to "growth" stocks and created the fashion for instant performance. Innovative and inventive, institutional money managers have ventured into areas where older and more prudent investment men feared to tread, *taking positions in the stocks of unseasoned companies*, setting up hedge funds, devising new types of securities (emphasis added).

Part IV of the Securities and Exchange Commission's (1971) study focuses on the impact of institutional investors on corporate issuers. It emphasizes that, by selling in block to institutional buyers of primary public common stock offerings, investment bankers could economize on the costs of marketing securities. It was easier for underwriters to credibly communicate the characteristics of issuers to a few block buyers, especially if those block buyers were institutional investors with large

trust accounts managed by New York banks. Moreover, the concentration of stockholdings of unseasoned firms may have facilitated control over management and thus reduced the potential risk of stock purchases and the need for information about the firm at the time of the offering.

Moreover, the Securities and Exchange Commission (1971) emphasized that the benefits of institutional purchasing for reducing issue costs on public equity exceeded the direct consequences of placing shares in the hands of institutional investors. The participation of institutional buyers in an offering also made it easier to sell the remainder of the offering to individual investors.

Retail members of the syndicate have been known to advise their customers in advance of the offering that institutions have indicated their intent to buy the issue . . . . While this knowledge of institutional interest may increase the public's appetite for any stock, the effect is greater for small, less established issuers than for large established issuers and still more so for first offerings of such small companies. . . . The possible public impression that institutions with their purported research capabilities and sophistication would not allow themselves to be bilked helps explain individual investors' attitudes toward institutional interest. The result, then, of supposed or revealed institutional interest in an offering is to enhance retail interest as well (SEC, 1971, p. 2393).

In a sense, the new institutional block buying method of placing public shares was similar to the method used under German universal banking discussed above. The rise of institutional investors reduced the costs of communicating issuers' characteristics to buyers and enhanced control over corporate equity issuers by block investors (including New York banks managing large trust accounts).

### Summary

The growth of new intermediaries—insurance companies, mutual funds, and pension funds—substantially improved the efficiency of financial markets and led to reductions in the spreads paid to investment bankers on new securities issues. Private placements of debt and venture capital provided an alternative to a banking system hampered by limitations on branching and consolidation and buffered by the collapse of the Great Depression, and to a fragmented public issues market in which the costs of entry for unseasoned credit risks was high. The growth of mutual funds and pension funds and the concentration of equity purchases by these investors and their trust account managers in the 1950s and 1960s

plausibly explain the reduced costs of public stock issues for relatively unseasoned firms.

### THE DECLINE IN EQUITY SPREADS FROM 1950 TO 1971

In the second section above, we reviewed the results of Mendelson's (1967) detailed analysis of the changes in underwriting spreads on common stock from 1949 to 1961. In the fifth section, we linked that decline to changes in the role of institutional purchasers of equity, which helped to reduce the costs of underwriting. While Mendelson's data and analysis are very rich, there are points worth pursuing that are not dealt with in his study. First, his data end in 1961, but the improvement in average spreads and growth in institutional investors' share of the market continued into the 1960s and 1970s; thus it is important to update his findings to take account of these changes. Second, Mendelson devoted little attention to the relationship between spreads and the characteristics of the underwriter. It is possible to address the potential role of market power in influencing spreads by considering the relationship between the underwriter's volume of underwritings and the spread. Third, Mendelson did not examine the division of the gross spread between underwriters and dealers. Clearly, this division is relevant in evaluating whether the spread is largely due to oligopolistic rent extraction by underwriters. For example, if changes in the spread were entirely passed on from underwriters to dealers it would be hard to argue that spreads reflected the market power of the underwriter.

Before proceeding, we discuss important differences between the data set we use and that used by Mendelson, which limit the comparability of the two studies.

#### Data Availability

The original sources on which Mendelson's (1967) study was based were registration statements filed with the Securities and Exchange Commission. Mendelson (p. 429) described the sample as "drawn from the population of common stock issues offered for cash in the years in question. The samples include only offerings through the investment banking machinery and only offerings to shareholders or to the general

public. Offerings to special groups were not included. The sample contains both offerings distributed on a firm-contract (underwritten) basis or agency (best-efforts) basis. The sample was divided into two strata, the fully registered and the Regulation A (or small) issues." The numbers of observations are not reported; it is not clear how complete the sample is or how the sample was drawn from the population of registered offerings. Unfortunately, the data appear to have been destroyed.

In constructing our own data set, we faced several sets of constraints. First, for purposes of comparability, it seemed wise to pick dates that coincided with Mendelson's if possible. Second, we wanted to pick dates on both ends of the institutional investor boom of the 1950s and 1960s. Third, we wanted to pick dates that occurred at similar points of the business cycle (to abstract from differences in issuers' characteristics possibly related to the stage of the business cycle in which offerings occur.) Fourth, we had to choose between the Securities and Exchange Commission filings and *Investment Dealers' Digest* as sources for our study (which differ according to the coverage of issuers and the variables reported). Fifth, we had a limited amount of funds and time to gather data for our study. Sixth, we required sample periods with a sufficient number of observations to perform statistical analysis.

In weighing these considerations we chose the first six months of 1950 and the first six months of 1971 as our two dates for constructing a sample of primary common stock issues, for cash, handled by investment bankers. The choice of 1950 permits some comparison with Mendelson (1967), and 1971 comes at the end of the boom years of institutional investors' growth. Both periods are recovery years from recession, and both witnessed a substantial volume of new stock issues.

The difficulty of collecting data from SEC sources ultimately led us to rely on *Investment Dealers' Digest* in constructing our sample. We are currently in the process of collecting data from SEC filings, but this must be done one firm at a time, and (it seems) one must already be aware of the identity of the issuer before the SEC can locate the information. Furthermore, the SEC only began microfilming records in 1978, and it is unclear whether registration information prior to this period still exists in its files.

The SEC did publish a list of securities issuers beginning in the first quarter of 1950, though it discontinued this practice a few years later. We collected these data for the first six months of 1950 and compared them to the data published in *Investment Dealers' Digest*. Surprisingly,

there was substantial information lacking in both data sets. Of all the issues we found from both sources, roughly a third appeared in both sources, less than a third in only the SEC's list, and more than a third only in *Investment Dealers' Digest*.

Because the items recorded in the two sources are not the same, it is hard to define precisely the characteristics of firms that led to their exclusion in one or the other sample. One interesting fact, however, is that roughly half of the SEC's data set consisted of best efforts, while only three of those transactions also appeared in *Investment Dealers' Digest*. It may be that *Investment Dealers' Digest* (at least in its early years of data reporting, circa 1950) excluded small issuers from its reporting. By 1971, we think this is less likely to be a problem.

While there were some advantages to the data reported by the SEC (which include firm asset size and the distinction between best efforts and firm commitments), for our regression analysis we chose the other data source for four reasons. First, the SEC source was not available after the 1950s. For purposes of comparability it seemed best to use *Investment Dealers' Digest* throughout. Second, the SEC source did not contain any information on the identity of the underwriter. This was a severe limitation, since we wanted to investigate the potential importance of underwriter volume in determining spreads. Third, the SEC data did not contain information on concessions to dealers, while the *Investment Dealers' Digest* did. Fourth, the variables only included in the SEC data—the distinction between best efforts and firm commitments, and asset size categories—did not prove significant in regressions using the SEC data that included those variables as well as the variables we report below.

To summarize, despite many advantages to using the data reported in *Investment Dealers' Digest* an important qualification of our results for the 1950 sample is that they may underrepresent relatively unseasoned issuers. This may lead us to understate the improvement in spreads that occurred from 1950 to 1971.<sup>15</sup>

### Market Concentration

Miller's (1967) analysis of trends in concentration within the investment banking industry noted little change in the underwriting shares of large underwriters from the 1930s to 1963. Before proceeding to the analysis of spreads, we update Miller's discussion and consider alternative mea-

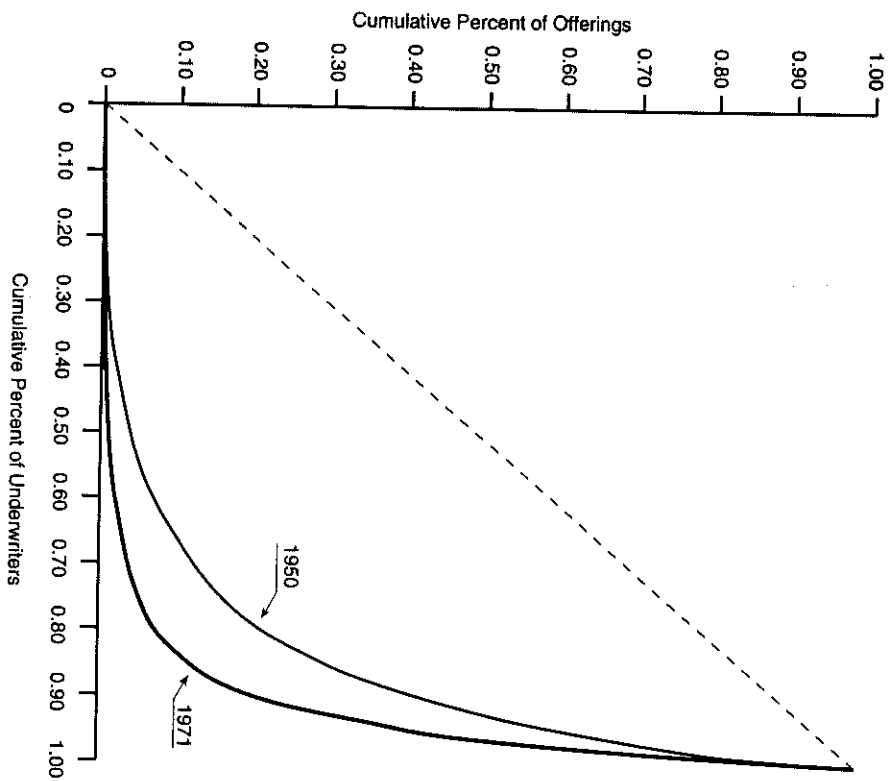
sures of concentration for our sample of stock issues during the first six months of 1950 and 1971. In Figure 4-1, we plot the Lorenz curve for the stock issues market in 1950 and 1971. If anything, this indicates an *increase* in the concentration of the market during the period of declining spreads. In Tables 4-16 and 4-17 we distinguish "large" from "small" underwriters and examine the shares of big underwriters in the market. We define an underwriter as large if it is involved (either as manager or participant) in a volume of transactions in excess of ten times the median underwriter volume. By this definition, twenty-one underwriters are defined as large in 1971, compared to eleven in 1950. Large underwriters account for 39 percent of the offerings and 70 percent of the volume in 1971, compared to 30 percent of the offerings and 58 percent of the volume in 1950. While there are alternative ways of measuring market concentration [for example, Miller's (1967) measures discussed above] and none is clearly preferable, the various alternative measures seem to lead to the same fundamental conclusion: the decline in equity spreads from 1950 to 1971 cannot be attributed to a decline in the concentration of equity underwriting.

### Spreads and the Characteristics of Issues and Underwriters

Sortings of our samples by issue size, by industry, by underwriter size, and according to whether the issue is a standby or a public offering are provided in Tables 4-18 through 4-21.<sup>16</sup> Rather than discuss the conditional means reported in these tables, we turn directly to our regression results, which identify the partial correlations apparent in the conditional means. Table 4-22 reports identical regressions for the 1950 and 1971 samples, which describe all spreads in terms of an intercept and a slope coefficient (multiplied by issue size) and which allow both the intercept coefficient (multiplied by issue size) and which allow both the intercept and the slope coefficient to vary with the type of offering (public v. rights), the broad industry category of the issuer (utility, financial, or "industrial"), and the size category of the underwriter (large or small). These descriptive regressions "explain" a substantial amount of the variation in gross spread percentages. Six principal findings stand out.

First, size of issue is a very useful descriptive statistic, all the more so when one allows the size effect to vary with the fundamental characteristics of the issue. Mendelson (1967) argued that size effects were reduced by the inclusion of other variables in his regressions, but it may

**FIGURE 4-1**  
Lorenz Curves for Common Stock Underwriting, January-June  
1950 v. January-June 1971



be that his finding that size effects are weakened by the inclusion of other variables depends on not allowing size effects to vary by types of issues. Specific comparisons between Mendelson's regressions and ours are difficult, due to differences in regressors.

Second, large underwriters, *ceteris paribus*, charged much smaller commissions than small underwriters. The notion that market power explains cross-sectional variation in commissions, therefore, is hard to

**TABLE 4-16**  
Amount and Number of Common Stock Issues Placed by Large\*  
Underwriters, January-June 1950

Underwriter Rank	Amount Issued	Percent of Total Amount Issued	Number of Issues	Percent of Total Number of Issues
1	\$92,089,702	16.48	12	8.05
2	34,530,597	6.18	6	4.03
3	32,349,618	5.79	6	4.03
4	27,617,238	4.94	3	2.01
5	26,938,177	4.82	3	2.01
6	26,612,047	4.76	4	2.68
7	19,851,254	3.55	2	1.34
8	17,512,614	3.13	1	0.67
9	17,063,230	3.05	3	2.01
10	16,000,000	2.86	2	1.34
11	15,791,376	2.83	2	1.34
	\$326,355,853	58.42	44	29.53

\* Large underwriters are those that participated in a total dollar amount of issues greater than ten times the median volume of underwriters (\$15 million) with at least one percent of the number of issues. The eighth ranked underwriter did, in fact, meet the above stated criteria, although one of its deals was omitted from our sample for lack of additional relevant data.

defend. The high commissions of small underwriters likely reflects the fact that small underwriters tend to be matched up with relatively unseasoned firms (as discussed above).

Third, industry classification matters. There are a variety of explanations for these findings. We note that public utilities during this period are low-risk operations and that information about their operations is widely available and relatively transparent. Financial corporations may have lower spreads because their common stock is really more comparable to the junior debt of nonfinancial corporations (because the assets of financial corporations consist of debt claims on nonfinancial corporations).

Fourth, rights offerings are much cheaper, which confirms the importance of marketing costs in determining spreads.

Fifth, the signs and significance of the coefficients in the two regressions are similar, but the magnitudes are different. To be specific, factors that tended to produce the largest spreads shrink in magnitude over time.

Sixth, as Mendelson (1967) argued in his analysis of the change in

**TABLE 4-17**  
Amount and Number of Common Stock Issues Placed by Large<sup>a</sup>  
Underwriters, January-June 1971

Underwriter Rank	Amount Issued	Percent of Total Amount Issued	Number of Issues	Percent of Total Number of Issues
1	\$586,418,697	9.24	24	4.93
2	562,502,386	8.87	13	2.67
3	426,465,000	6.72	11	2.26
4	332,158,869	5.24	7	1.44
5	307,960,623	4.85	14	2.87
6	264,040,000	4.16	12	2.46
7	230,827,250	3.64	9	1.85
8	224,743,551	3.54	10	2.05
9	208,810,750	3.29	7	1.44
10	191,807,063	3.02	8	1.64
11	174,824,510	2.76	11	2.26
12	159,218,000	2.51	6	1.23
13	150,431,066	2.37	5	1.03
14	116,437,440	1.84	7	1.44
15	111,587,550	1.76	8	1.64
16	110,851,108	1.75	5	1.03
17	75,536,250	1.19	10	2.05
18	69,648,564	1.10	6	1.23
19	64,970,811	1.02	6	1.23
20	63,897,500	1.01	5	1.03
21	38,536,250	0.61	5	1.03
	\$4,471,673,238	70.48	189	38.81

<sup>a</sup> Large underwriters are those that participated in a total dollar amount of issues greater than ten times the median volume of underwriters (\$22.5 million) with at least one percent of the number of issues.

costs from 1950 to 1961, the declining cost of high-spread issues accounts for the average change in spreads from 1950 to 1971. The average decline in spreads for the sample—from 9.2 percent to 7.7 percent—understates the importance of technological improvement (e.g., the rise of institutional investors) during this time. Declines in cost shifted the mix of issuers toward relatively high-cost issues. In particular, as the cost of going public declined, many issuers chose public offerings rather than rights offerings. In 1950, 21 percent of underwritten common stock issues were rights offerings; by 1971, only 5 percent were offered as standbys. Presumably, the wider public market's advan-

**TABLE 4-18**  
Spreads on Public Offerings and Rights Offerings of Common Stock, by Size of Issue and Underwriter, <sup>a</sup> January-June 1950

	\$0.5 Million to Less than \$2 Million		\$2 Million or More	All
	Less than \$0.5 Million	\$0.5 Million to Less than \$2 Million		
<b>Public Offerings</b>				
All				
Average	0.138	0.086	0.063	0.094
Std deviation	0.063	0.047	0.029	0.057
Count	43	40	49	132
Large underwriters				
Average	0.067	0.064	0.039	0.050
Std deviation	-	0.022	0.012	0.021
Count	1	7	10	18
Small underwriters				
Average	0.146	0.119	0.086	0.133
Std deviation	0.063	0.054	0.035	0.061
Count	35	15	5	55
Unknown size				
Average	0.109	0.067	0.067	0.072
Std deviation	0.052	0.032	0.028	0.035
Count	7	18	34	59
<b>Rights Offerings</b>				
All				
Average	0.085	0.047	0.038	0.048
Std deviation	0.077	0.029	0.032	0.044
Count	6	8	21	35
Large underwriters				
Average	-	0.034	0.027	0.027
Std deviation	-	0.041	0.018	0.020
Count	0	2	16	18
Small underwriters				
Average	0.085	0.039	0.075	0.069
Std deviation	0.077	0.020	0.041	0.056
Count	6	4	5	15
Unknown size				
Average	-	0.076	-	0.076
Std deviation	-	0.028	-	0.028
Count	0	2	0	2
<b>All Offerings</b>				
Average	0.132	0.080	0.055	0.085
Std deviation	0.066	0.047	0.032	0.058
Count	49	48	70	167

<sup>a</sup> Large underwriters are those that participated in a total dollar amount of issues greater than ten times the median volume of underwriters (\$15 million) with at least one percent of the number of issues.

**TABLE 4-19**  
**Spreads on Public Offerings and Rights Offerings of Common Stock, by Size of Issue and Sector, January-June 1950**

	\$0.5 Million		All
	Less than \$0.5 Million	to Less than \$2 Million or More	
<b>Public Offerings</b>			
All			
Average	0.138	0.086	0.063
Std deviation	0.063	0.047	0.029
Count	43	40	49
Banking/Financial/Insurance			
Average	0.100	0.069	0.069
Std deviation	0.038	0.032	0.026
Count	10	19	33
Industrial <sup>a</sup>			
Average	0.158	0.118	0.107
Std deviation	0.062	0.056	0.016
Count	30	15	3
Utility			
Average	0.066	0.061	0.038
Std deviation	0.012	0.011	0.019
Count	3	6	13
<b>Rights Offerings</b>			
All			
Average	0.085	0.047	0.038
Std deviation	0.077	0.029	0.032
Count	6	8	21
Banking/Financial/Insurance			
Average	0.029	0.022	0.031
Std deviation	-	-	0.020
Count	1	1	3
Industrial <sup>a</sup>			
Average	0.124	0.061	0.056
Std deviation	0.099	0.033	0.048
Count	3	3	4
Utility			
Average	0.056	0.043	0.034
Std deviation	0.029	0.029	0.029
Count	2	4	14
<b>All Offerings</b>			
Average	0.132	0.080	0.055
Std deviation	0.066	0.047	0.032
Count	49	48	70

<sup>a</sup> "Industrial" includes all nonfinancial and nonutility firms.

**TABLE 4-20**  
**Spreads on Public Offerings and Rights Offerings of Common Stock, by Size of Issue and Underwriter, January-June 1971**

	\$0.5 Million		All <sup>b</sup>
	Less than \$0.5 Million <sup>b</sup>	to Less than \$2 Million <sup>b</sup> or More <sup>b</sup>	
<b>Public Offerings</b>			
All			
Average	0.100	0.085	0.060
Std deviation	0.016	0.015	0.019
Count	100	106	155
Large underwriters			
Average	0.066	0.070	0.055
Std deviation	0.020	0.015	0.017
Count	4	19	109
Small underwriters			
Average	0.101	0.088	0.072
Std deviation	0.015	0.013	0.018
Count	96	87	46
<b>Rights Offerings</b>			
All			
Average	0.122	0.045	0.039
Std deviation	-	0.014	0.023
Count	1	4	15
Large underwriters			
Average	-	0.045	0.033
Std deviation	-	0.014	0.015
Count	0	4	13
Small underwriters			
Average	0.122	-	0.075
Std deviation	-	-	0.035
Count	1	0	2
<b>All Offerings</b>			
Average	0.100	0.084	0.058
Std deviation	0.016	0.017	0.020
Count	101	110	170

<sup>a</sup> Large underwriters are those that participated in a total dollar amount of issues greater than ten times the median volume of underwriters (\$22.5 million) with at least one percent of the number of issues.

<sup>b</sup> In 1950 dollars.

**TABLE 4-21**  
Spreads on Public Offerings and Rights Offerings of Common Stock, by Size of Issue and Sector, January-June 1971

	Less than \$0.5 Million <sup>b</sup>		\$0.5 Million to Less than \$2 Million <sup>b</sup>		\$2 Million or More <sup>b</sup>		All <sup>b</sup>
	Average	Std deviation	Average	Std deviation	Average	Std deviation	
<b>All</b>	0.100	0.016	0.085	0.015	0.060	0.019	0.078
Count	100	100	106	106	155	155	361
<b>Banking/Financial/Insurance</b>	0.100	0.000	0.085	0.013	0.074	0.014	0.079
Average	0.100	0.000	0.085	0.013	0.074	0.014	0.079
Std deviation	0.000	0.000	0.013	0.013	0.014	0.014	0.016
Count	5	5	9	9	29	29	43
<b>Industrial<sup>a</sup></b>	0.100	0.017	0.085	0.015	0.061	0.015	0.081
Average	0.100	0.017	0.085	0.015	0.061	0.015	0.081
Std deviation	0.017	0.017	0.015	0.015	0.015	0.015	0.023
Count	95	95	96	96	109	109	300
<b>Utility</b>	0.059	0.029	0.009	0.009	0.029	0.009	0.031
Average	0.059	0.029	0.009	0.009	0.029	0.009	0.031
Std deviation	0.029	0.029	0.009	0.009	0.009	0.009	0.011
Count	1	1	1	1	17	17	18
<b>All</b>	0.122	0.045	0.039	0.023	0.044	0.027	0.044
Average	0.122	0.045	0.039	0.023	0.044	0.027	0.044
Std deviation	0.045	0.045	0.014	0.014	0.023	0.023	0.027
Count	1	1	4	4	15	15	20
<b>Banking/Financial/Insurance</b>	0.046	0.038	0.013	0.013	0.041	0.015	0.041
Average	0.046	0.038	0.013	0.013	0.041	0.015	0.041
Std deviation	0.038	0.038	0.013	0.013	0.013	0.013	0.015
Count	0	0	2	2	3	3	5
<b>Industrial<sup>a</sup></b>	0.080	0.066	0.030	0.030	0.080	0.037	0.080
Average	0.080	0.066	0.030	0.030	0.080	0.037	0.080
Std deviation	0.066	0.066	0.030	0.030	0.030	0.030	0.037
Count	1	1	0	0	2	2	4
<b>Utility</b>	0.043	0.030	0.016	0.016	0.032	0.015	0.032
Average	0.043	0.030	0.016	0.016	0.032	0.015	0.032
Std deviation	0.030	0.030	0.016	0.016	0.016	0.016	0.015
Count	0	0	2	2	9	9	11
<b>All Offerings</b>	0.200	0.084	0.058	0.020	0.077	0.025	0.077
Average	0.200	0.084	0.058	0.020	0.077	0.025	0.077
Std deviation	0.016	0.017	0.010	0.010	0.020	0.025	0.025
Count	101	101	170	170	381	381	381

<sup>a</sup> "Industrial" includes all nonfinancial and nonutility firms.  
<sup>b</sup> In 1950 dollars.

**TABLE 4-22**  
Underwriting Spreads (Relative to Proceeds) for Common Stock Issues—Regression Results, 1950 and 1971<sup>a</sup>

Variable <sup>a</sup>	January-June 1950 <sup>b</sup>		January-June 1971 <sup>c</sup>	
	Coefficient	T-value	Coefficient	T-value
Constant	0.010	0.71	0.038	5.39
Public <sup>e</sup>	0.066	3.64	0.028	3.85
Industrial	0.053	1.78	0.038	2.78
PUBXIND	-0.021	-0.69	-0.040	-2.92
Small underwriter	0.044	4.17	0.032	15.35
Utility	0.015	1.02	-0.003	-0.36
PUBXUTIL	-0.048	-2.73	-0.030	-3.33
Issue size <sup>f</sup>	0.0005	0.50	0.00007	0.34
SIZEXPUB	-0.0013	-1.38	0.00006	5.40
SIZEXIND	-0.004	-1.89	-0.0004	-5.09
SIZEXUTIL	-0.0005	-0.49	-0.0002	-1.84
SIZEXS.U.	-0.0056	-1.89	-0.0018	-3.26

<sup>a</sup> Corrected for heteroskedasticity.  
<sup>b</sup> R<sup>2</sup> = 0.56; R<sup>2</sup> adjusted = 0.51  
Observations = 106  
Mean Spread = 0.092; std. dev. = 0.067  
Mean Issue Size = 3.1; std. dev. = 6.0  
<sup>c</sup> The omitted sector is financial firms.  
<sup>d</sup> The alternative to public offering is underwritten rights offering.  
<sup>e</sup> Issue size is millions of dollars.  
<sup>f</sup> R<sup>2</sup> = 0.66; R<sup>2</sup> adjusted = 0.65  
Observations = 381  
Mean Spread = 0.077; std. dev. = 0.025  
Mean Issue Size = 9.5; std. dev. = 19.2

**TABLE 4-23**  
Predicted Percent Spreads for Three Examples of Common Stock Issues, 1950 and 1971, from Table 4-22 Regression Results

Issue Size <sup>a</sup>	Issue 1		Issue 2		Issue 3	
	Small	Large	Small	Large	Small	Large
Underwriter	14.2	5.2	9.2	3.1	2.5	2.5
Sector	1971	1971	1971	1971	1971	1971
Offering	Public	Public	Public	Public	Utility	Utility
Spreads (%)	14.2	5.2	9.2	3.1	2.5	2.5
1950	14.2	5.2	9.2	3.1	2.5	2.5
1971	9.2	3.1	3.4	3.4	3.4	3.4

<sup>a</sup> In 1950 dollars.



tage is a higher stock price, if the costs of information are sufficiently low. As shown in Table 4-23, public stock issue spreads fell most from the 1950s to the 1970s, and a small "industrial" issuer's cost of selling shares publicly through a small underwriter fell especially dramatically compared to the costs of other types of issues.

#### Alternative Interpretations of the Measured Decline in Spreads

We have argued that the growing importance of institutional investors in the 1960s was associated with significant reductions in investment bankers' compensation, as measured by the gross spread. But there are two alternative explanations for this decline that warrant discussion: (1) substitution into forms of compensation other than the gross spread and (2) regulation of investment banker compensation.

With respect to the first point, the spread is only part of the compensation of the investment banker. Other potentially important items include warrants, rights of first refusal on other offerings, and hidden compensation in the form of underwriter charges of expenses or fees kept out of the spread. *Investment Dealers' Digest* does not report compensation other than the gross spread, and thus it is not possible for us to gauge whether increases in other forms of compensation helped to offset reductions in the spread during our period. It is conceivable that changes in underwriter practice between 1950 and 1971 moved some fees out of spreads and into other fee categories, but for two reasons we do not think this possibility could explain our results. First, Mendelson (1967) did have data on warrants and rights of first refusal for the 1950s and 1960s and found that these features were associated with higher spreads, *ceteris paribus*. Thus, it is unlikely that an increased use of these contractual arrangements over time would have been associated with a reduction in spreads. Second, as discussed below, oversight by the National Association of Securities Dealers (NASD)—the self-regulatory agency that began monitoring investment banker compensation in 1968—would not have encouraged any substitution away from spreads into other costs because the NASD looks at aggregate costs, not just at spreads, when determining the reasonableness of investment bankers' charges. Thus it would be fruitless for an underwriter to attempt to surpass their allowable ceilings by substituting between the spread and some other form of payment.

Another potential source of reduction in spreads from 1950 to 1971

is the regulatory oversight of the NASD. Regulation of underwriter compensation changed dramatically in the late 1960s as the NASD began to place ceilings on allowable total compensation in 1968. In response to pressure from the Securities and Exchange Commission, in 1968 the NASD established an oversight committee (first the Committee on Underwritings, later the Corporate Finance Department) to regulate total underwriter compensation.

In establishing compensation ceilings, the NASD takes into consideration spreads, non-accountable expenses (which accrue only to syndicate managers), consulting fees paid to underwriters, and noncash payments (warrants, rights of first refusal on subsequent issues, etc.) The NASD computes total compensation based on the sum of these components and judges whether the total is "unreasonable." If so, the underwriter must reduce some or all components of compensation to conform to the NASD's guidelines.

We do not think the NASD guidelines can explain our results for two reasons. First, as shown in Table 4-9 and in Mendelson (1967), the reduction in the cost of underwriting equity occurred by the early 1960s, prior to the self-regulation imposed by the NASD in 1968. Second, the NASD guidelines generally would not have imposed binding constraints on the spreads we observed in 1971. The specific NASD ceilings on compensation (which vary explicitly with the size of the issue and the type of underwriting—whether IPO or not and whether a firm commitment or not) remain confidential, but their staff have graciously shared the details of those guidelines with us to enable us to judge whether the NASD guidelines could explain the dramatic decline we observe from 1950 to 1971. Rough estimates, allowing for large costs in addition to spreads, indicate that NASD ceilings likely would have constrained very few of the spreads in our 1971 sample.<sup>17</sup> For both these reasons, we conclude that the NASD acted mainly to constrain "outliers" to act in accordance with typical industry practice, rather than to aggressively reduce standard fees charged by underwriters.

#### Dealers' Concessions

One of the benefits of using data from *Investment Dealers' Digest* is that it provides data on dealers' concessions for most of the transactions described. Dealers' concessions are clearly an expense from the perspective of the underwriters, and thus it is interesting to ask what percentage

of gross spread is accounted for by payments to dealers for marketing issues to their clients. Hansen (1986, p. 51) reported that gross spreads divide as follows: 20 percent origination and management fee, 25 percent underwriting fee, and 55 percent selling concession. Clearly, this indicates, almost by definition, that most of the gross spread is related to expenses or organizing and marketing issues. But was this always so? If the decline in spreads from 1940 to 1980 reflected an erosion of bankers' rents, then the proportion of concessions in spreads may have risen over this period.

Data on dealers' concessions generally were not reported during the 1940s (with the exception of an interesting run of information in the 1940 *Investment Dealers' Digest*). We have collected those data from 1940, as well as the data from our 1950 and 1971 samples. We also have a few observations on dealers' concessions for common stock deals from the Lehman deal books.

Data for 71 issues in 1950 and 330 issues in 1971 are summarized in Table 4-24. Overall, the ratio of dealers' concessions to gross spread is large—averaging 59 percent in 1950 and 55 percent in 1971. Clearly, by this measure, the decline in spreads does not seem to reflect a reduction in investment bankers' rents. For public and rights offerings, dealers' concessions do not follow any obvious pattern according to size of issue. In data not reported here, we found that (using SEC data on asset size of issuer) there was a tendency for larger firms' issues to have larger concession shares, which may reflect the greater costs of due diligence and the greater risks posed to the underwriters by relatively unseasoned firms. The ratio of concession to spread was the same for public and rights offerings in 1950.<sup>18</sup>

Data available for 1940 on twenty-five manufacturing firms' dealers' concessions indicate that there likely was little change in concessions relative to spreads from 1940 to 1950. For eleven weeks beginning April 29, 1940, *Investment Dealers' Digest* published a table entitled "Security Offerings Available to Dealers," with the following explanation:

The following is a selected list of securities on which concessions are available to dealers. The source of supply frequently can be ascertained by examination of the advertising columns of this publication. On written request, the source will be supplied by *The Investment Dealers' Digest*.

For this brief interval, it seems, underwriters used *Investment Dealers'*

TABLE 4-24  
Concession/Spread, by Issue Size (\$ Million), in 1950 Dollars—  
January–June 1950 v. January–June 1971

	Less than \$0.5 Million	\$0.5 Million to Less than \$2 Million	\$2 Million or More
Public Offerings, 1950			
Average	0.61	0.55	0.58
Std. deviation	0.13	0.15	0.18
Count	22	18	13
Rights Offerings, 1950			
Average	0.70	0.51	0.58
Std. deviation	0.14	0.24	0.22
Count	2	4	12
Public Offerings, 1971			
Average	0.53	0.53	0.57
Std. deviation	0.12	0.07	0.08
Count	70	104	153

*Digest* to advertise concessions as well as offering prices. No spread information was reported, and the amounts of the offerings were not given. The locations for potential distribution were limited in the listings in this table. By all appearances, the common stocks listed in these tables were a cross-section of American industry, including small companies as well as firms listed on the New York Stock Exchange. The average ratio of the dealers' concession to the offering price on common stock issues of manufacturing firms shown in these tables is 11 percent.<sup>19</sup> According to the Securities and Exchange Commission (1941b, p. A25), the average spread for public issues of manufacturers' common stocks sold through investment banks in 1940 was 17.7 percent. By this estimate, concessions (not including warrants) were 62 percent of the spread in 1940, which is near the average of 59 percent from our 1950 sample.<sup>20</sup>

In summary, while gross spreads on equity issues fell dramatically from 1940 to the present, the share of dealers' concessions in the gross spread remained remarkably constant at roughly 60 percent. The view that improvements in financial technology reduced both the costs of managing issues and placing them with customers is consistent with the constancy of the share of dealers' concessions. The view that the decline

in the gross spread primarily reflects reduced rents to syndicate managers is hard to reconcile with the data on concessions.

## CONCLUSION

The facts about spreads that we describe, based on our work and that of others, can be summarized as follows:

1. Spreads in the United States have always been large relative to spreads for comparable securities issues in Germany as long ago as the 1890s, especially for common stocks.
2. U.S. spreads are especially high for smaller issues, while German spreads varied little by size of issue or by type of security.
3. Spreads in the 1920s were similar to the rates cited by Brandeis for the pre-World War I era and remained roughly unchanged from the 1920s to 1940.
4. Average spreads fell dramatically from 1940 to the 1970s.
5. This decline was greatest for common stocks, which began the period with much larger spreads than preferred stocks or bonds.
6. The decline was greatest for small issues, for "industrials," and for issues marketed to the public (as distinct from rights offerings).
7. Cross-sectional studies of spreads find that spreads vary with price risk faced by the underwriter, but compensation for this underwriting risk does not explain important cross-sectional variation in spreads. Best-effort spreads can be as large as spreads on underwritings with a price guarantee.
8. Proxies for financial maturity of the firm ("seasoning") are important in explaining cross-sectional variation in stock spreads, *ceteris paribus*.
9. Spreads are often inversely related to underpricing costs, which explains why in equilibrium firms may choose high-spread methods to place securities over low-spread methods.
10. The degree of concentration in the market for investment banking services is *not* positively associated with spreads across time, across types of securities, or across countries.
11. After controlling for other observable differences in common stock issues, the largest underwriters charged the smallest spreads.
12. Investment bankers pay out a large fraction of their gross spreads in the form of concessions to dealers. The decline in spreads from

1950 to 1971 was not associated with any change in the proportion of spread accounted for by concessions.

13. The decline in spreads witnessed after the 1930s largely reflects institutional changes in securities issuing associated with the new activities of nonbank intermediaries. Private placements of debt and venture capital provided alternatives to public issues, which were especially attractive for unseasoned issuers that faced high public flotation costs. Institutional investors' block purchases of public issues were important in reducing the costs of information and control associated with marketing public issues.

These findings support the view that securities marketing costs, which result largely from intermediaries costs of monitoring, signaling, and enforcing proper behavior by securities issuers, provide most of the explanatory power for observed differences in spreads across time, issuers, underwriters, flotation mechanisms, securities, and countries. Furthermore, regulatory policies toward the financial system that promoted fragmented capital markets in the United States (e.g., restrictions on the scale and scope of banking activities) may have increased the costs of bringing securities to market in the United States (Calomiris, 1993, 1995).

Financial innovations in the post-World War II era helped to compensate for the weaknesses of the banking system by giving rise to a new set of intermediaries. These innovations affected the structure of the market for selling securities through changes in the scale and characteristics of the buyers of new securities issues. Nonbank intermediaries provided alternatives to public securities markets through private placements and venture capital investments. Others (particularly, pension funds, trusts, and mutual funds) mitigated the costs of public issuance by decreasing the fragmentation of the purchasing side of the market, particularly in the case of small firms' issues of common stock.

While the evidence we report points toward marketing costs as the crucial factor in explaining differences in spreads across issuers, securities, investment bankers, time, and countries, that does not mean underwriters' rents have been zero in the investment banking industry. Rather, our findings indicate that a focus on the economics of information, risk, corporate governance, and marketing—rather than the economics of oligopoly—is likely to shed the most light on the forces that led to the large reductions in the costs of underwriting in the United States from 1940 to the present.

## NOTES

1. For evidence on the role of stock risk in increasing investment banker spreads, see Eckbo and Masulis (1994). While underwriting risk is clearly an important component of the spread, as we argue below, it cannot explain the dramatic variation in spreads observed across time and across issues.
2. Theoretical models and related evidence can be found in Beatty and Ritter (1986), Ritter (1987), Booth and Smith (1986), Rock (1986), Eastbrook (1984), Benveniste and Spindt (1989), Ramakrishnan and Thakor (1984), Baron (1979, 1982), Baron and Holmstrom (1980), and Mandelker and Raviv (1977).
3. Hansen (1986) reviews the various costs to a firm of bringing a securities issue to market. Costs incurred by issuers other than the spread include security underpricing, warrants to underwriters, and overallocation options (on firm commitment underwritings). Any attempt to measure changes over time in the total costs of public issues (as opposed to investment bank compensation) would have to take account of possible changes in the extent of initial underpricing. Tinic (1988) argues that changes in securities regulations after 1933—which increased the legal liability of underwriters for poor ex post performance of issues—led to greater underpricing of unseasoned securities. He found that one-week excess returns on IPOs averaged 5 percent during the 1923–1930 period, compared to 11 percent during the 1966–1971 period. Tinic also found that these differences were attributable to increased underpricing of the most unseasoned credit risks. A possible problem with Tinic's analysis, however, is the failure to adjust for inflation, which changed the meaning of small issues over the period and which could account for his findings.

Investment bankers do not receive any direct benefits from underpricing since they are required to sell securities at no higher than the offering price. John C. Coffee tells us this was standard practice in the industry prior to its codification in the late 1930s, at least among "reputable" underwriters, although disreputable houses may have attempted to profit from "free riding" prior to regulatory sanctions that prevented it. Hansen (1986) argues that underwriters may benefit from underpricing through reduced underwriting risk and greater investor satisfaction (reputation gains). This argument, however, neglects that investment bankers should care about their reputations with issuers as well as with purchasers.

"Green shoe" (or overallocation) options are part of the investment banker's compensation not measured by the spread. The ex ante value of the overallocation option to the banker (not captured by the spread) is equal to the probability weighted value of the commissions he could earn on overallocations (demand for issues at the offering price in excess of the offering amount up to the amount of the overallocation). Overallocation options are regulated by the National Association of Securities Dealers (NASD). Until 1983, allotments were limited by the NASD to 10 percent of the issue; in 1983, this was increased to 15 percent. This seems a minor problem for measuring compensation, since the value of the overallocation option is small relative to the gross spread (Hansen, Fuller, and Janjigian, 1987).

Sometimes marginal and average commissions are not the same. For example, prior to the 1930s, some buyers were given preferential prices (implying smaller spreads on those parts of the transaction). The marginal spread is the highest of the

- spreads in any transaction, and the appropriate measure of the marginal cost of the marginal cost of issue. Where marginal and average spreads differ in any observations we report below, we employ marginal spreads as our definition of compensation.
4. Useful tabular analyses of spread data were published irregularly by the Securities and Exchange Commission and by Dewing (1920) and Haven (1940).
  5. For example, Haven (1940, pp. 23–39) gives detailed breakdowns of spreads against "ratings." For common stock issues, thirty issues for 1933–1937 rated B++ or B+ had spreads averaging 8.7 percent, while seventy-five issues rated C++ or C+ had spreads averaging 17.5 percent.
  6. See also Ritter (1987) and Sherman (1992) for a discussion of the association between unseasoned firms and best-effort contracting. Sherman points out that an additional contributing factor to the high cost of best efforts is the fact that not all of them are completed. The average cost of "survivors" must be high enough to pay for the underwriters' costs for survivors and nonsurvivors.
  7. The sample of German issuers is drawn from a partial list of the metal manufacturing firms and a complete list of the electrical industry firms for which spread information was available in *Saling's Borsen Jahrbuch*. This is only a small sample of the actual issues of German common stock, even within those industries.
  8. There is also the question of why issuers would ever offer equity, since the costs of public offerings of debt are so much lower. Here bankruptcy costs, differences in seasoning, and firms' reactions to changes in the market price of equity may be important. Access to the public bond market tends to be restricted to very large, seasoned firms (Carey, Prowse, Rea, and Udell, 1993). Loughran and Ritter (1994) show that the timing of equity offerings for initial and seasoned issuers coincides with peaks in firms' stock prices.
  9. During the pre-1933 period, retailers and manufacturers are the dominant type of firm found in the deal books. We are in the process of collecting spread information on Lehman's deals from 1935 to 1940 from SEC records in order to compare spread data. During this later period it is also the case that many of Lehman's customers were retailers or small manufacturers.
  10. Meaningful information about common stock spreads is hard to disentangle in deals that involved simultaneous or combined offerings of common and preferred issues.
  11. Tinic did not control for inflation when comparing underpricing of small issues over time. Inflationary bias may account for his results, since cross-sectionally underpricing is greater for small stocks.
  12. It is important to keep in mind that the average decline in spreads for common stocks reported in Table 4–9 likely understates the true decline. As discussed by Mandelton (1967) and below, as costs of high-spread issues fell, more of these firms entered the market.
  13. Data for life insurance portfolios are taken from *Best's Life Insurance Reports* (1940–1960).
  14. Those that sold immediately after buying primary issues reaped similar profits to other IPO purchasers (a capital gain averaging 18 percent for the first week after the issue).
  15. *Investment Dealers' Digest* did not report data similar to these for the 1940s. During the 1940s, it did report SEC registrations but gave no information regarding spreads. As noted below, however, for a brief period in 1940, it did report concessions to

- dealers on a select set of underwritings.
16. The firms in Table 4-18 that are described as "unknown size" of underwriter are firms that are listed in Securities and Exchange Commission (1950) but not in *Investment Dealers' Digest*. These firms were not included in the regression reported in Table 4-22. Tables 4-18 through 4-21 are reported in 1950 dollars, using the GDP deflator for nonresidential investment as a deflator (Council of Economic Advisers, 1974, p. 252).
  17. Unfortunately, the microfilm records of the NASD decisions regarding spreads for the period prior to 1983 appear to have been destroyed, and thus it is not possible to measure how often the NASD actually constrained spreads prior to 1983.
  18. No concession data were reported for rights offerings in our 1971 sample. For a small sample of rights offerings in 1950, there is a difference in the dealers' concession relative to spread between small and large underwriters. Small underwriters pay larger concessions on rights offerings, and this is true holding constant the size of the issue. We can think of no obvious explanation for the fact that an underwriter size effect would be confined to rights issues only. It would be interesting to see if this fact holds up in larger samples.
  19. The variation around the average was small. Fifteen of the twenty-five issues had dealers' concessions of between 9 and 13 percent of the offering price; twenty-one of the issues had concession of between 7 and 15 percent of the offering price. The minimum was 3 percent and the maximum was 20 percent.
  20. Interestingly, our sample of stock issues from Lehman Brothers in the 1920s had much lower ratios of concession to spread—an average of 26 percent for the twelve deals that reported this information. One interpretation of this finding is that in the early years of stock flotations for unseasoned manufacturers and retailers, Lehman's role was larger than may have been typical in other market niches or in later periods.

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