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Who Failed to Go Public with Best Efforts Offerings

Sung-Il Cho

This paper presents evidence on the failed initial public offerings that used best efforts contracts. Out of 732 best efforts IPOs attempted in 1980-84, 186 IPOs (about one fourth) failed to meet minimum sales requirement and were subsequently withdrawn. Offerings with greater uncertainty about their true value failed more frequently. The failure rate was not significantly different between "all or none" type offerings and "minimum and maximum" type offerings. Regional investment bankers managed the most of best efforts IPOs and the average underpricing of their offerings was smaller than that of offerings managed by submajor bracket investment bankers. It is noteworthy that bankers with a record of failed offerings did not seem to lose their future business and relatively small issuing firms continued to rely on these bankers to go public.

I. INTRODUCTION

The underpricing of initial public equity offerings (*IPO*s) has become a well known phenomenon to many financial researchers. Ibbotson, Sindelar, and Ritter [9] report that the average initial return is 16.4% for 8,668 *IPO*s during the 1960-86 period. Although the magnitude of average underpricing is far greater for best efforts *IPO*s, most theoretical and empirical studies have focused on firm commitment *IPO*s.[1] While firm commitment offerings are more common for both seasoned and unseasoned new issues, best efforts offerings have provided an important financing alternative, especially for small firms, in the *IPO* market.

The purpose of this paper is to better understand the pricing environment for best efforts *IPO*s, which is quite different from that for firm commitment *IPO*s. The distinction between the two contract types that we choose to explore here is the possibility of failure of an *IPO*. With a firm commitment contract, the underwriter guarantees the success of the offering by promising to take up any unsold shares. Still, the attempt to go public

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may fail if the offering is canceled even before the issuer and the underwriter agree on the final offer price to make the offering effective. However, once the offering becomes effective, the issuer is assured to receive the net proceeds from the underwriter.

In contrast, with a best efforts contract, the underwriter will withdraw the offering if the number of shares subscribed by investors does not reach the minimum sales requirement during the selling period.[2] If this happens, the issuer receives no proceeds from the underwriter and no public market is created for its shares after a long and expensive registration and selling process. The failure of an *IPO* would have a significant wealth effect on both the issuer and the underwriter. The issuer will not be able to diversify its wealth through the public capital market or may lose profitable investment opportunities due to the lack of alternative financing. In addition, the firm's proprietary information may have been revealed to the public including its competitors and a significant managerial time and expenses are wasted. On the other hand, the underwriter receives no compensation for its selling efforts and expenses. Also, the underwriter may lose a part of its reputation capital by having underwritten a failed offering.

In this paper, we provide an empirical evidence on the failed best efforts *IPO*s. While it is known that best efforts offerings can fail, it is not well documented how often *IPO*s actually fail, what kind of issuing firms fail, and which investment bankers underwrite such failed *IPO*s.[3] If the possibility of failure is not trivial as this study shows, issuing firms using best efforts contracts need to prepare for the possible consequences from the failure. The choice between firm commitment and best efforts contracts may also be affected by this possibility of failure with a best efforts offering. The information on the characteristics of failed offerings may help potential issuing firms to check if it is the right time for them to go public. In choosing the underwriter, they may want to investigate not only the aftermarket performance of its successful offerings but also the record of its failed offerings. For researchers, if the probability of failure and its wealth effect is significant, the possibility of failure should be addressed in modeling the pricing and contract choice decision of issuing firms.

The organization of this paper is as follows. Section II discusses the theories on the failure of best efforts *IPO*s. Section III provides evidence on the frequency of failure and the characteristics of failed best efforts *IPO*s. The relationship between the failure rate and the minimum sales requirement is investigated. The characteristics of investment bankers who managed failed *IPO*s are also provided. The implication of the findings for firms using best efforts contracts is discussed. Section IV contains concluding remarks.

II. THEORIES ON THE *IPO* FAILURE

Most existing theories on the *IPO* underpricing are based on the setting of firm commitment offerings. They do not explicitly consider the possibility of a failure and, as a result, do not provide testable implications about the *IPO* failure.

Ritter [11] proposes that some issuers choose best efforts contracts to avoid severe underpricing that would be required in firm commitment offerings to compensate uninformed investors against adverse allocation bias. In a best efforts offering, an issuer commits itself to withdraw the offering if minimum sales requirement (henceforth, *MSR*) is not reached due to the lack of informed investors' participation. This commitment of withdrawal is more valuable to those more risky issuers for which required underpricing without the *MSR* would be too high. Ritter [11] shows that there exists a riskiness threshold above which more risky issuers find it optimal to trade an increased probability of failure for a reduction in underpricing, choosing best efforts offerings over firm commitment offerings. Welch [16] extends Ritter's model to argue that the more risky issuers set higher *MSR*s, risking a higher probability of failure.

Benveniste and Spindt [3] model that an underwriter underprices to induce its regular investors to reveal their private valuations of *IPO*s truthfully during the preselling period. With the guarantee of net proceed under a firm commitment contract, the underwriter has the incentive to presell the entire issue, which would increase the required underpricing. While the underwriter's incentive to presell the entire issue could be reduced under a best efforts contract, they recognize that the *MSR* tends to reactivate its preselling incentive. Welch [16] interprets this to imply that a best efforts offerings with a higher *MSR*, which requires more pre-selling activity, would be underpriced more. This in turn implies that the probability of failure for offerings with higher *MSR*s would be lower. Furthermore, the probability of failure for "all or none" type offerings, which would require pre-selling of the entire issue, is expected to be zero.

Signaling by underpricing models such as Allen and Faulhaber [1], Grinblatt and Hwang [6], and Welch [15] propose that the issuer underprices an *IPO* to signal its quality and benefits from the signal on the subsequent seasoned offerings. Since the issuer quality is revealed *after* the *IPO* in their models, the *IPO* will not fail in their pooling equilibrium. Cho [5] extends Welch [15] to explain the pricing of best efforts *IPO*s, assuming that the issuer quality and hence its true value is revealed with a positive probability *at* the *IPO*. Given that the offering may fail if the issuer quality is revealed and the offer price is set too high, the issuer

attempts to optimize between the underpricing and the probability of failure. If the probability of revelation is sufficiently high due to small ex ante uncertainty, high-quality issuers will be able to achieve a separating equilibrium by setting the offer price lower than its true price, but higher than the average pooling price. However, beyond the certain level of uncertainty, underpricing required to separate themselves becomes too excessive for high-quality issuers and a pooling equilibrium results. Cho [5] shows that, only in this pooling equilibrium, low-quality issuers find it optimal to overprice to mimic high-quality issuers and fail with a positive probability.

Welch [17] analyzes the effect of sequential subscription decision by investors on the pricing of *IPO*s. The observability of subscription decisions of earlier investors can lead to "cascade" effects, in which later investors rely completely on the decisions of earlier investors and ignore their own information. As a consequence, if a few early investors believe that the offering is overpriced, they can swamp the information held by other investors and doom the offerings to fail. Or, if a few early investors believe that the offering is underpriced, they can create almost unlimited demand for the issue. With cascade effects, issuers with bad inside information choose the full subscription price that eliminates the possibility of failure. Welch [17] shows that issuers with good, not bad, inside information set the price above this full subscription price and occasionally fail.

III. THE CHARACTERISTICS OF FAILED BEST EFFORTS *IPO*.

The data used in this study consist of 2,183 *IPO*s which became effective from October 1, 1980 to September 31, 1984 in the United States.[4] A "failed *IPO*" is defined as one whose registration became effective and failed to go public with that registration. There cannot be a failed *IPO* with a firm commitment contract by definition, for its success is guaranteed once it is declared effective by the setting of the final offer price. Offerings that were canceled before they even became effective are excluded from our data set. For these canceled *IPO*s, we could not determine why each offering was canceled or how close each offering was to becoming effective before it was canceled. Thus, a failed (best efforts) *IPO* occurs when the issuer and the investment banker have failed to sell the *MSR* specified in the prospectus. Failed offerings were identified with the help of the data base compiled by *Going Public: The IPO Reporter.* Successful offerings were identified by the data base of Ritter [10], augmented to include offerings from 1983 to 1984, which was generously made available to us.

Table 1
Descriptive Statistics for *IPO*s by Contract Type in the Period 1980-1984
(Standard Deviation in Parenthesis)

	Successful best efforts offerings	*Failed best efforts offerings*	*Firm commitment offerings*
Average gross proceeds[a]	$2,443,637.** (2,381,499.)	$2,951,086.** (2,880,535.)	$14,932,215. (25,433,464.)
Average pre-offer book value of equity	$383,160.** (829,828.)	$101,864.** (787,207.)	$10,819,814. (44,525,421.)
Average sales in year prior to offer	$503,102. (1,703,756.)	$477,446. (992,759.)	$40,634,986. (147,773,139.)
Average net income in year prior to offer	-58,204.** (269,816.)	-139,470.** (309,127.)	—[c]
Average offer price	$3.08 (32.11)	$1.61 (2.08)	$17.86 (156.87)
Average offering fraction[b]	40.48%* (16.93)	43.44%* (20.00)	34.37% (15.45)
Number of firms	546	186	1451

Notes: [a] All of the averages (gross proceeds, book value, sales, net income, offer price) are averages of nominal values; no price level adjustments have been made. Gross proceeds are calculated by multiplying the maximum number of shares proposed in the prospectus by the offer price.
[b] Offering fraction represents the maximum number of shares proposed as a percentage of total number of shares to be outstanding after a successful offering.
[c] Due to the difficulty in data collection, average net income is not available for firm commitment offerings.
[d] All the means of descriptiove statistics are different at any conventional level of significance between firm commitment *IPO*s and best efforts *IPO*s. Between successful and failed best efforts *IPO*s, means with superscripts "**" and "*" are different at the 1% and 5% significance levels, respectively.
Data source for failed offerings: Howard and Company, *Going Public: The IPO Reporter.*

Table 1 reports descriptive statistics for the 2,183 firms that attempted to go public in 1980-1984. Table 1 shows that firms using firm commitment contracts are less severely underpriced and are substantially larger in gross proceed, book value of equity, sales, net income, and offer price which are frequently used as the proxies for ex ante price uncertainty of *IPO*s.[5] Among best efforts offerings, firms whose offerings failed are, on average, smaller in all proxy variables except for proposed gross proceed than firms that succeeded. Several of firm commitment and best efforts offerings were offered at a price higher than $100 as a unit which is a combination of stocks and warrants. It is interesting to note that failed offerings proposed greater gross proceed than successful ones, despite their smaller average book value of equity, annual sales or net income. It may be because they

offered a greater fraction of their equity to the public than successful offerings (43.4% against 40.5%). However, the difference in average gross proceed is greater than can be explained by the difference in their average offering fractions if we use book value of equity as a reasonable proxy for the market value of equity. This suggests that failed offerings, on average, attempted to sell a greater fraction of their equity at a higher valuation than successful offerings. Overall, Table 1 suggests that failed best efforts offerings were made more frequently by firms with greater uncertainty about their true value.

The fact that the true price for failed offerings is not available make it difficult, if not impossible, to directly test implications of Ritter [11], Welch [17] or Cho [5] about *IPO* failure. Given that a reasonable proxy for the quality of inside information is not readily available, it is difficult to test whether failed offerings were made by low-quality issuers as in Cho [5] or by issuers with good inside information as in Welch [17]. However, all three models imply that issuers with greater ex ante price uncertainty, due to either greater inherent risks or considerable inside information, are more likely to choose to risk failure. If the proxy variables that we choose are adequate proxy for the uncertainty, we would expect that the uncertainty would be smaller for successful offerings than for failed offerings.

To test the hypothesis that there is a positive relationship between the failure rate and the uncertainty, we estimate the following logit success-likelihood model:

$$p(\mathrm{i}) = 1/[1 + \exp(a_0 - a_1 X_{1\mathrm{i}} - a_2 X_{2\mathrm{i}})],$$

Where $p(\mathrm{i})$ is the probability that the ith issue will succeed and $X_{1\mathrm{i}}$ and $X_{2\mathrm{i}}$ are annual net income and book value of equity for the ith issue, respectively. Note that the uncertainty is smaller, the larger the value of net income or book value. We expect the proxy variables to have positive coefficients, given that the probability of success is greater for offerings with smaller uncertainty. The estimated coefficients of three versions of the logit model are presented in Table 2 together with their t-ratios and the likelihood-ratio statistics. The estimated coefficients have the correct signs and are statistically significant. They indicate that issuers with larger annual net income and/or book value of equity were more likely to succeed, which is consistent with Ritter [11], Welch [17], or Cho [5].

In addition to the minimum sales requirement, all best efforts offerings specify the maximum number of shares that can be sold if the offering is oversubscribed. In an "all or none" type offering, this maximum is set equal to the *MSR*. Other offerings set the maximum greater than the *MSR*,

Table 2
Estimates from Logit Success-Likelihood Model[a]
$p^{(i)} = 1/[1 + \exp(a_0 - a_1X_{1i} - a_2X_{2i})]$ [b]

	Estimated Parameters		
	Model 1	*Model 2*	*Model 3*
Constant	-1.196**	-1.270**	-1.089**
	(-11.58)	(-13.48)	(-11.96)
Annual Net Income	0.955**	1.170**	
	(2.60)	(3.41)	
Book Value of Equity	0.275*		0.465**
	(1.59)		(2.60)
Likelihood-Ratio Statistic	15.62**	12.54**	9.46**
R^2	0.583	0.582	0.582

Notes: [a] The *t*-ratios (coefficient/standard error) are reported in parentheses. For large samples, the *t*-ration is distributed as the *t*-distribution. All three models are estimated with a sample size of 724 offerings.
[b] $p^{(i)}$ is equal to one if the offering succeeds and zero if the offering fails.
* Significant at the 10% level.
**Significant at the 1% level.

which we will call "minimum and maximum" type offerings. Welch [16] interprets Ritter [11] to imply that issuers with greater uncertainty choose higher *MSR* to alleviate excessive underpricing that would have been required otherwise, risking a higher probability of failure. Using a data set similar to ours, Welch concludes the evidence to not favor Ritter's hypothesis that the uncertainty is an important positive determinant of *MSR*.

Our data provides a similar evidence. Given that the standard assumptions to run an ordinary least square regression are often not satisfied, we do not report the results of regressions. Instead, we divide our sample into five groups based on the ratio of minimum against the maximum. Table 3 reports descriptive statistics for best efforts offerings categorized by this ratio, which shows no clear pattern between the ratio and any of the proxy variables for uncertainty. *F*-statistic shows that means of all three proxy variables are not different among the five groups of different ratios at five percent significance level. Also, none of the coefficients for all three proxy variables in a multiple regression equation with the ratio as the dependent variable is significant.

In addition, our data shows that the failure rate is not significantly different between the "all or none" type offerings and the "minimum and maximum" type offerings, 24.4% and 24.2%, respectively. This is not consistent with Ritter [11] that higher *MSR*s increase the probability that the offering will fail due to lower (informed) demand. This is not supportive of

the implication of Benveniste and Spindt [3] that the failure rate would be lower for offerings with a higher *MSR* which requires more pre-selling activity. Furthermore, the failure rate is not close to zero for "all or none" type offerings in which investment bankers are expected to presell the entire issue in their model. For the "minimum and maximum" type offerings, the average ratio of minimum to maximum is 62.4% for successful offerings and 58.7% for failed offerings. The difference in the average ratios is not statistically significant.[6]

Welch [16] interprets Benveniste and Spindt [3] to yield the implication that offerings with higher *MSR*s, which requires more preselling activity, would be underpriced more. Welch reports the evidence that supports the positive relationship between *MSR* and *IPO* underpricing (the R^2 is about 5%). However, Table 3 does not show a significant positive relationship between *MSR* and *IPO* underpricing. The coefficient of OLS regression equation of underpricing on *MSR* have a positive sign, but not significant at any conventional level (the R^2 is about 0.1%). As noted by Welch [16], preselling activities are not common among best efforts *IPO*s. We believe that models based on preselling activity including Benveniste and Spindt [3] is less applicable to best efforts *IPO*s that does not usually involve pre-selling activity.

It would be interesting to know which investment bankers brought these failed offerings to the *IPO* market. Hayes [8] classified investment bankers into four groups in descending order of strength within the industry: special bracket, major bracket, submajors, and others. Based on the location in "tombstone advertisements," we classified all leading and co-leading investment bankers into three groups: majors (which includes special bracket), submajors, and regional investment bankers.[7]

The characteristics of offerings underwritten by different groups of investment bankers are reported in Table 4. Four hundred and thirty different investment bankers served as lead or co-lead for the 2,183 offerings. For 732 best efforts offerings attempted, 686 offerings were handled by a single lead, with only 43 using two lead underwriters and three using three underwriters. On the other hand, for 1,451 firm commitment offerings, 1,032 offerings were handled by a single lead, with 349 using two lead underwriters and the remaining 70 using three to five underwriters. This suggests that investment bankers' attempt to share the risks with other investment bankers is more prominent in a firm commitment offering than in a best efforts offering.

Table 4 shows that major group bankers seldom use a best efforts contract: only three best efforts offerings out of 737 total offerings in which they served as lead or co-lead underwriters, all of which succeeded. Best

Table 3
Failure Rate for Best Efforts *IPOs* by the Minimum Sales Requirement in the Period 1980-1984 (Standard Deviation in Parenthesis)

	Failed offerings				*Successful offerings*				
		Mean[a]				*Mean*			
r=Ratio (Min/Max)	*Cases (Failure rate*[b]*)*	*Book*	*Net Income*	*Sales*	*Cases*	*Book*	*Net Income*	*Sales*	*Initial return*[c]
$0 < r < 0.5$	33	-34	-218	386	64	598	-48	164	32.9%
	(34.0%)	(496)	(377)	(806)		(2866)	(260)	(512)	(64.2)
$0.5 < r < 0.6$	32	-111	-164	571	111	345	-50	598	39.3
	(22.4)	(1459)	(358)	(921)		(1023)	(142)	(1679)	(70.2)
$0.6 < r < 0.75$	40	165	-72	615	110	257	-92	640	25.9
	(26.7)	(310)	(284)	(1370)		(570)	(236)	(1835)	(64.8)
$0.75 < r < 1.0$	30	295	-155	373	131	355	-89	400	39.2
	(18.6)	(872)	(251)	(961)		(770)	(266)	(1171)	(73.2)
$r = 1.0$	42	172	-108	310	130	238	-12	373	57.6
	(24.4)	(379)	(265)	(856)		(500)	(368)	(1265)	(98.0)
Total[d]	177	102	-139	451	546	383	-58	503	39.6%
	(24.5%)	(787)	(309)	(1011)		(830)	(270)	(1704)	(77.1)

Notes: [a] All of the means are averages of nominal values in thousands of US dollars; no price level adjustments have been made. For variable definitions, refer to Table 1.
[b] Failure rate is calculated by dividing the number of failed offerings by the number of failed offerings and successful offerings.
[c] Initial return is calculated as (PT/OP - 1) x 100%, where PT is the first recorded closing bid price and OP is the offer price. For National Market System and American and New York Exchange Securities, the first recorded closing transaction price is used, rather than the closing bid price.
[d] The minimum sales requirement is missing for nine failed offerings. These nine offerings were excluded from the table.
[e] *F* statistic shows that means of all three variables (Book, Net Income, Sales) are not different among the five groups at 5% significance level. Using Ratio as the dependent variable, coefficients for all three variables in a multiple regression equation are not significant at 5% level.

efforts contracts are not widely used by the submajor group either: fifty-four best efforts offerings out of 814 total offerings in which they served as lead or co-lead underwriters, 13 of which failed. Most best efforts offerings were managed by regional investment bankers. However, the failure rate is about the same between submajors and regional bankers.

The average underpricing is significantly smaller for firm commitment offerings than for best efforts offerings, consistent with previous findings. Table 4 also shows that the average underpricing for firm commitment offerings is smaller for investment bankers with greater reputation (or strength)

Table 4
Descriptive Statistics for *IPO*s By Underwriter Group in the Period 1980-1984
(Standard Deviation in Parenthesis)

	Best Efforts Offerings							*Firm Commitment Offerings*			
	Failed			*Successful*							
		Mean[a]			*Mean*				*Mean*		
Underwriter group	*Cases*[b]	*Proceeds*	*Book*	*Cases*	*Proceeds*	*Book*	*Initial Return*	*Cases*	*Proceeds*	*Book*	*Initial Return*
Majors	0			3	18,300	3,206	42.8	536	29,716	25,364	5.5
					(20,813)	(3,249)	(93.5)		(36,577)	(70,324)	(14.2)
Submajors	13	2,765	133	40	3,135	383	53.6	588	6,578	2,712	11.9
		(1,086)	(404)		(2,124)	(433)	(92.3)		(5,299)	(5,848)	(28.2)
Regional	173	2,965	100	503	2,308	355(774	38.8	327	5,636	1,259	18.7
		(2,973)	(809)		(1,605)	)	(76.4)		(7,358)	(3,097)	(47.9)
Total	186	2,951(2,	103	546	2,444	383	39.9	1,451	14,932	10,820	11.1
		881)	(787)		(2,381)	(830)	(77.6)		(25,433)	(44,525)	(30.6)

Notes: [a] All of the means are averages of nominal values in thousands of US dollars; no price level adjustments have been made. For variable definitions, refer to Table 1 and Table 3.
[b] The number of cases are based on the count of the lead underwriter. If an offering is managed by more than one underwriter, it is counted as if it is underwritten by an investment banker of a higher group (or ranking).
[c] All the means of descriptive statistics except Initial Return are different at any conventional level of significance between firm commitment *IPO*s and best efforts *IPO*s. Between successful and failed *IPO*s, however, they are not different at 5% significance level.

within the industry. However, the same is not true for best efforts offerings. In fact, best efforts offerings managed by submajors are on average offered at a greater discount than those managed by regional investment bankers who specialize more in best efforts *IPO*s. This may be due to the fact that preselling activity is not common in best efforts *IPO*s, as Welch [16] noted. In a best efforts offering, the offer price is set prior to the start of the selling period, while the offer price can be revised after information is acquired during the pre-selling period in a firm commitment offering. Without the information gathered through preselling activity, major and submajor investment bankers have no better, if not poorer, ability to estimate the after-market price than regional investment bankers.

We divide the *IPO*s in our sample into two group; the one managed by bankers that had not managed a failed offering and the other managed by bankers that had managed one or more failed offerings during the sample period. Table 5 reports descriptive statistics for these two groups by their contract types. It is surprising that the majority of best efforts *IPO*s are managed by bankers with a record of failure. The ability of an investment banker to originate future business does not seem to be devastated by the

Table 5
Descriptive Statistics for *IPO*s By Underwriter Group and by Contract Type in the Period 1980-1984 (Standard Deviation in Parenthesis)

	Successful Offerings Managed By Bankers With No Failed Best Efforts Offerings				*Successful Offerings Managed By Bankers With A Record Of Failed Best Efforts Offerings*			
		Mean[a]				*Mean*		
Contract type	*Cases*	*Initial Return*	*Proceeds*	*Book*	*Cases*	*Initial Return*	*Proceeds*	*Book*
Firm	1,341	9.2	15,882	11,647	110	33.5	3,101	362
Commitment		(23.8)	(26,192)	(46,128)		(70.5)	(2,048)	(866)
Best Efforts	172	31.3	2,766	395	374	46.8	2,315	359
		(63.3)	(3,458)	(801)		(85.5)	(1,659)	(824)
Total	1,513	11.7	14,391	10,654	484	43.8	2,493	360
		(31.7)	(25,034)	(44,159)		(82.5)	(1,784)	(835)

Notes: [a] All of the means are averages of nominal values in thousands of US dollars; no price level adjustments have been made. For variable definitions, refer to Table 1 and Table 3.
[b] Among 430 investment bankers that had managed at least one offering in 1980-1984, 127 investment bankers had managed at least one failed offering during the same period.

fact that it had recently managed a failed best efforts offering. This contrasts with the finding in Beatty and Ritter [2] that reputation effects seem to function in the *IPO* market. They find that investment bankers pricing 'off the line' in one subperiod lose market share in the subsequent subperiod, although the relation is a noisy one. Our data shows that many regional bankers continue to manage successful offerings, with both firm commitment and best efforts contracts, as a lead underwriter even after they had recently managed failed best efforts offerings.[8] This suggests that investors, by participating in their future offerings, do not punish these investment bankers who brought failed offerings to the market. Or investors may believe that they have the ability to sort out fairly priced offerings from overpriced ones. Also, issuing firms continue to use these regional bankers with a record of failed offerings, which suggests these regional bankers may be the only ones that are willing to manage their offerings with either firm commitment or best efforts contracts.

Both firm commitment and best efforts *IPO*s managed by bankers with no failure record experienced smaller average underpricing than those managed by bankers with a record of failure. Notice that the characteristics of firm commitment *IPO*s managed by bankers with a record of failure resembles those of best efforts *IPO*s more closely than those of firm commitment *IPO*s managed by bankers with no failure record. Also, the average underpricing of firm commitment *IPO*s managed by bankers with a

record of failure is even greater than that of best efforts *IPO*s managed by bankers with no failure record. However, this does not necessarily mean that issuing firms should attempt to select investment bankers with no failure record. For some issuing firms, the benefit from guaranteeing the success with firm commitment contract may outweigh the cost from greater underpricing. Besides, these issuing firms may not have the privilege of selecting investment bankers or determining contract type that they desire.

IV. CONCLUSIONS

This paper documents the characteristics of failed best efforts offerings. About one fourth of firms that attempted to go public with best efforts offerings failed in the period 1980-1984. If we add the probability of being canceled even before an offering becomes effective, the risk of not being able to obtain outside financing through an *IPO* can be substantial. The evidence shows that offerings with greater uncertainty about their true value failed more frequently. This is consistent with the implication of Ritter [11], Welch [17], or Cho [5] that issuers with greater ex ante price uncertainty, due to either greater inherent risk or greater degree of informational asymmetry, would choose to risk failure. Welch [16] finds a positive relationship between underpricing and minimum sales requirement (*MSR*) which he interprets to support the preselling model of Benveniste and Spindt [3]. With an updated data, however, we find no significant positive relationship between *MSR* and underpricing. Also, the failure rate is not significantly different for offerings with different *MSR*s. This does not favor the conjecture of Benveniste and Spindt [3] that minimum sales requirements would reactivate the incentive of investment banker to presell the entire issue, which implies no failure among "all or none" type offerings.

Firm commitment offerings were underwritten by all three groups of investment bankers with different reputations; major, submajor, and regional investment bankers. Investment bankers enjoying a higher reputation underwrite larger size offerings of more established firms. Also, the degree of mispricing was smaller for firm commitment *IPO*s managed by investment bankers with a higher reputation. However, this relationship is reversed for best efforts *IPO*s. While major investment bankers seldom managed best efforts *IPO*s, most best efforts *IPO*s were managed by regional investment bankers with minor participation by submajor investment bankers. Although submajor investment bankers seemed better at pricing firm commitment *IPO*s accurately, they were no better than regional bankers in their success rate as well as in their pricing ability for best efforts *IPO*s. This may be due to the lack of preselling activity in best efforts offer-

ings. In firm commitment offerings, investment bankers often revise the offer price, using their information about market demand acquired through pre-selling activities. In best efforts offerings, they set the offer price prior to the start of the selling period. Also, investment bankers with a record of failed offerings did not lose their capability of obtaining future business, which contrasts with the finding in Beatty and Ritter [2] that investment bankers pricing \'off the line' lose market share in the subsequent period. In best efforts offerings without pre-selling activity, investors may not expect investment bankers to provide certification on their offerings based on their reputation capital. Also, smaller issuing firms with greater uncertainty may have no choice over investment bankers other than relying on regional investment bankers with a record of recent failed offerings. As a result, it is more likely that the contract choice is determined by investment bankers, rather than by these smaller issuing firms.

NOTES

1. Most empirical studies do not even separate these two types of offerings in reporting the average initial return. Ritter [10] reports that the average initial return was 14.8% for firm commitment *IPO*s and 47.8% for best efforts *IPO*s during 1977-82.
2. For most best efforts offerings, the selling period is 90 days. If the minimum sales requirement is not reached within that time, the registration is termed expired and all funds deposited in an escrow account must be returned to subscribers. Then, issuing firms may either withdraw the registration statement or make a post-effective amendment if it wishes to try again. These issuing firms seldom make a post-effective amendment within a relatively short span of time.
3. Ritter [10] reports that, of the 155 best efforts *IPO*s that became effective from the fourth quarter of 1981 to the third quarter of 1982, 73 offerings were unsuccessful. The detailed characteristics of those failed offerings were not provided in his paper.
4. Unfortunately, reliable data on the outcome of all best efforts *IPO*s that became effective after October 1, 1984 is not available. The format of *Going Public: The IPO Reporter* was drastically changed to focus on firm commitment offerings in 1985 when the publication was sold to *Dealer's Digest*. Our data excluded offerings which did not use investment bankers as well as Regulation A offerings for which firms raising less than $1.5 million are eligible.
5. The offer price doesn't seem suitable as a proxy for the uncertainty due to outliers that are mostly unit offerings with offer prices of $100 or more. Out of 546 successful offerings, 434 offerings (79.5%) are issued at 1.00 or less per share, while 125 (67.7%) out of 186 failed offerings are issued at $1.00 or less per share.
6. The two failed offerings with no minimum sales requirement were included in Table 3. They were Gulf American Financial and CADE Industries, both underwritten in 1981 by the same investment banker. With no minimum sales requirement, these two offerings could not fail. The fact that they withdrew their offerings suggests that these issuing firms had a certain implicit minimum amount of outside financing from the *IPO*s.

7. Our classification is based on the relative position of each investment banker within the tombstone advertisements appeared in the *Wall Street Journal* during the sample period. Special bracket bankers are grouped together with major bankers since they usually team up with major bankers to manage offerings. Similarly, Carter and Manaster [4] assigned an integer rank, zero to nine, for each investment banker in the tombstone advertisement according to its position. Our major bankers closely correspond to bankers with a ranking of 7.0 or higher, submajor bankers correspond to bankers with a ranking between 2.0 and 6.5, and regional bankers correspond to bankers with a ranking between 0.0 and 1.5, as assigned by Carter and Manaster.
8. For example, the investment bankers who managed the most (10) failed best efforts *IPO*s successfully managed four firm commitment *IPO*s and eight best efforts *IPO*s as a single lead underwriter over the same four-year period. The investment banker with the second most (five) failed best efforts *IPO*s successfully managed nine firm commitment *IPO*s and eleven best efforts *IPO*s over the same four-year period.

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