

# Rights Offerings and Corporate Financial Condition

Nancy D. Ursel\*

*Certain American industrial firms still use equity rights offerings. Most of these offerings are uninsured. I examine firms' financing decisions, and develop the explanation that rights offerings are used by firms in financial distress with difficulty accessing underwriting services. These firms have little to lose from the costs of adverse selection that accompany the lack of underwriter certification of uninsured rights offerings. Probit analysis of 660 seasoned NYSE, Amex, and Nasdaq equity issues between 1983-1999 yields results consistent with my explanation. There is no evidence that variables previously linked to rights usage (e.g., ownership concentration) continue to be relevant to the issue method choice.*

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Finance journals from the late 1970s to the early 1990s contain a lively discussion of the rights issue paradoxes: the fact that most American firms raise seasoned equity via underwritten public offerings despite the lower cost alternatives of non-underwritten or underwritten rights issues (Smith, 1977, Hansen and Pinkerton, 1982, Heinkel and Schwartz, 1986, Hansen, 1989, and Eckbo and Masulis, 1992). By the early 1990s, the literature reaches a consensus that rights are used by firms with high ownership concentration, where high insider takeover and exercise of the rights can be expected. The negative signal that a poorly subscribed rights offering would send, which could occur in firms with widely dispersed ownership, is seen as too damaging to risk. Rights offerings are thus expected to decrease as markets mature and come to include more large firms with widely dispersed ownership. As rights issues did decline in the US, the rights issue paradox seemed settled and research on the problem subsided.<sup>1</sup>

A recent study presents a different picture, however. Heron and Lie (2002) report that US rights offerings “rebounded in the 1990s.” Because their study is a broad survey of virtually all types of seasoned equity offerings (including primary, secondary and mixed offerings, as well as rights and shelf issues), these authors cannot provide a complete theory of rights usage, though they do note that rights are used by firms in “tight” financial situations.

One contribution of this article is an explanation for the revival of rights offerings as a means of equity financing by firms in poor financial condition. This explanation recognizes that virtually all recent US industrial rights offerings are not underwritten. Existing finance theory suggests that offers lacking underwriter certification would face a costly negative stock price reaction

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<sup>1</sup>Research on rights offerings continues in other jurisdictions where rights offerings continue to be prevalent. For example, Armitage (2002) and Slovin, Sushka, and Lai (2000) study the UK; Lukose and Rao (2003), India; Wu and Wang (2002), Hong Kong; Bigelli (1998), Italy; Børhren, Eckbo, and Michalsen (1997), Norway; Tsangarakis (1996), Greece, and Kang and Stulz (1996), Japan. However, institutional differences in these other jurisdictions mean that the results may not be applicable to the US. Burch, Christie, and Nanda (2004) examine rights usage in the US in the 1930s and 1940s.

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*\*Nancy D. Ursel is a Professor of Finance at the University of Windsor in Windsor, Ontario Canada N9B 3P4.*

due to adverse selection. For this reason, Eckbo and Masulis (1992) hypothesize that rights are used by firms with high ownership concentration and expected insider takeover, which neutralizes adverse selection and wealth transfers. I argue that, regardless of ownership concentration, value-maximizing managers of distressed firms are willing to accept the costs of adverse selection and proceed with non-underwritten rights issues when existing shareholders have little value to lose, even though investment banks show little interest in underwriting the offering. Thus non-underwritten rights offerings are used by firms in poor financial condition with low net worth, largely as a last resort method for raising equity capital. This story can explain the revival in rights offerings in the 1990s, given Altman's (1993) recognition that in this period corporate financial bankruptcies soared. In effect, due to innovation, the rights offering method has taken on a new role in choices of equity financing for financially troubled firms.

I provide empirical evidence that agrees with two implications of this explanation using a sample of 660 US seasoned equity offerings on the NYSE, the Amex, and Nasdaq. The sample covers a period later than that used in the rights papers published from the late 70s to the early 90s. First, I document that rights are used by firms in particularly poor financial condition that have difficulty accessing underwriter services, and thus have little need for underwriter certification. For example, firms using rights offerings have higher stock price variability and have experienced lower capital gains in the year preceding issue than have firms using underwritten public offerings. Furthermore, on average, firms using rights are unlikely to attract underwriters from the prestigious investment banks employed by firms using public offerings. I find no evidence that variables previously linked to rights usage (e.g., ownership concentration) continue to be relevant to the rights/public offering decision of US firms.

The second implication of my explanation is that rights users, while likely to have a higher failure rate following equity financing, also show significant signs of operating recovery and reduced distress after the financing. This evidence shows that rights usage is a means of financial recovery for troubled firms. I show that rights issuers have a higher bankruptcy rate after their offering than firm-underwritten equity issuers, however, those that avoid bankruptcy show significant recovery from financial distress, significant reduction in leverage, expanded capital investment, and declining Altman's Z.

The explanation of this article addresses the rights issue paradoxes. If rights are used primarily by firms in poor financial condition, then managers of healthy firms would be less likely to want their firms to be associated with rights offerings, despite out-of-pocket cost savings that might be available. Furthermore, while troubled firms have low adverse selection costs and will thus get lower benefits from underwriter certification, healthy firms face high adverse selection costs that would outweigh the cost savings of rights issues. Moreover, recognizing that the financing method choice is a mutual choice problem between issuers and underwriters (Fernando et al., 2005), investment banks are often unwilling to be lead underwriters for deeply distressed firms. There are thus no rights paradoxes in the case of distressed financing using the non-underwritten rights method.

This study sheds light on the financing and investment decisions of distressed firms. Most of the existing literature in this area has maintained that firms in financial distress will not issue equity due to the debt overhang problem (Myers, 1977, and Gertner and Scharfstein, 1991). I demonstrate that financially distressed US firms do issue equity, although these firms may not be found in samples that look only at public equity issues. Some distressed US firms use non-underwritten rights issues to raise equity capital. Franks and Sanzhar (2003) also show that distressed UK firms issue equity when large growth opportunities are present

and/or debt forgiveness or concessions apply. They hypothesize that US bankruptcy laws may inhibit distressed US firms from issuing equity.

My explanation also sheds light on the intertemporal variation in issue methods by showing that issue method choice depends on corporate financial condition, thus demonstrating why rights issues have rebounded somewhat in the 1990s.

The rest of the article is organized as follows: Section I presents my explanation and examines its relation to the existing literature. Section II describes the sample and discusses characteristics of rights issues. Section III describes the methodology, model, and data used. Section IV presents post issue data and Section V contains concluding remarks.

## I. Explanation

Table I presents information about the frequency of recent rights issues. It is clear that rights issues have not disappeared, as predicted in the earlier literature, but instead have returned to the frequency seen in the 1970s. However, there has been a major change in rights issues over time: whereas 60% of rights issues in Eckbo and Masulis' (1992) sample are underwritten, only 10% of issues in my more recent sample period are found to be underwritten.<sup>2</sup> Clearly, any theory of recent rights usage must address this change in underwriting use.

In their study of the firm's stock issue decision, Myers and Majluf (1984) assume that management works in the interests of the existing ("old") investors. This causes new investors to believe that shares will only be issued when they are overvalued, leading to costs of adverse selection in the form of discounting of new share prices.

Management has two choices to deal with this discounting:

- a) hire a reputable underwriter to certify the value of the shares, or
- b) undertake a rights issue where current shareholders have pre-committed to buy and hold shares.

Alternative a) is expensive, but alternative b) may only be used by firms with high ownership concentration and high expected takeover, or else costs of adverse selection will be incurred.

Myers and Majluf discuss rights offerings, but their discussion is limited to the case where current shareholders exercise 100% of the rights they receive. There will be no adverse selection in such offerings. However, to the extent that current shareholders do not exercise all of their rights, but instead sell some rights in the market to outsiders, adverse selection will be introduced, since this creates a means for outsiders to purchase stock. Evidence presented in Section II shows that there is trading in most rights issues, raising the possibility of adverse selection.

Eckbo and Masulis hypothesize that rights will be used by firms with high ownership concentration on the assumption that these firms will have high expected takeover. They further hypothesize that rights usage will decrease over time as firms and markets grow and

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<sup>2</sup>To determine if a rights issue was underwritten, I checked the *Wall Street Journal*, as well as prospectuses on the Securities and Exchange Commission's (SEC's) Edgar website for issues after 1993, and the Investment Dealers Digest for issues prior to 1993. The Security Data Company's (SDC's) Global Platinum database information in this area was found to be unreliable when cross-checked with prospectuses. For example, SDC lists Lehman as the underwriter of RMI Titanium's rights issue, whereas the prospectus shows that Lehman was merely a financial adviser. There is no mention in the prospectus of Lehman having any obligation to take-up unexercised rights. For this reason, I did not use SDC information to prepare Table I.

**Table I. Yearly Distribution of Common Equity Rights Issues by American Industrial Firms Traded on the NYSE and Amex**

	<b>Underwritten and Non-Underwritten</b>	<b>Standby Underwritten</b>
<i>Panel A. Data from Eckbo and Masulis's Sample Period (1963-1981)<sup>1</sup></i>		
1965-69, annual average	8.8	5.4
1970-74, annual average	2.6	1.2
1975-79, annual average	1	0.8
<i>Panel B. Data from this Article's Sample Period (1983-1999)</i>		
1983	0	0
1984	4	1
1985	1	1
1986	5	0
1987	1	0
1988	5	0
1989	2	0
1990	2	0
1991	3	1
1992	3	0
1993	3	0
1994	4	0
1995	0	0
1996	4	1
1997	5	0
1998	1	0
1999	5	1
Total (1983-99)	48	5
Annual Average (83-99)	2.8	0.3

<sup>1</sup>Source: Eckbo and Masulis (1992, Table 1, p. 298).

All other data is from Moody's Dividend Record and Moody's Industrial Manuals 1983-1999, the *Wall Street Journal*, Investors Dealers Digest and the SEC's Edgar website.

ownership concentration decreases. I do not contest Eckbo and Masulis's approach. Ownership concentration and expected takeover may clearly mediate the costs of adverse selection, but given the unexplained rebound in rights issues in the US, there must be additional factors at work.

One such factor which affects the total costs of adverse selection, and which is not addressed in Eckbo and Masulis, is firm value. Even if ownership concentration and takeover precommitments are low, total costs of adverse selection will be small if the firm is near bankruptcy and has little value to lose. In this scenario, the rise in rights issues could be rationally explained by the rising number of financially distressed firms adopting the issue method.

Empirical analysis will show which factor(s) best explain rights use: 1) financial condition, 2) ownership concentration and takeover, or 3) whether both factors have a significant impact.

Like Myers and Majluf, I assume asymmetric information. Though ownership concentration and shareholder takeover are higher in rights firms, even in these firms they are not 100%,

there will be some outside investors with less information who react negatively when rights issues are announced. Heron and Lie (2002) and Eckbo and Masulis (1992) both find the average announcement period price reaction for uninsured rights to be -1.4%. Hansen (1989) finds 2-day announcement period abnormal returns of -2.61% for underwritten industrial rights offers.

Consistent with Myers and Majluf, this reaction implies that the total costs of adverse selection from issuing shares are positively related to the firm's net worth. This is illustrated by the upward sloping line  $RR'$  in Figure 1, which plots issue costs for an issue of fixed size and project value on the vertical axis and firm net worth on the horizontal axis. Line  $RR'$  represents the cost of non-underwritten rights offerings. The potential total dollar costs of adverse selection are high for high-valued firms. In contrast, low-valued firms (for example, those near bankruptcy or in financial distress) have little wealth to transfer. When net worth is zero, there is no wealth to transfer, and the intercept is zero.

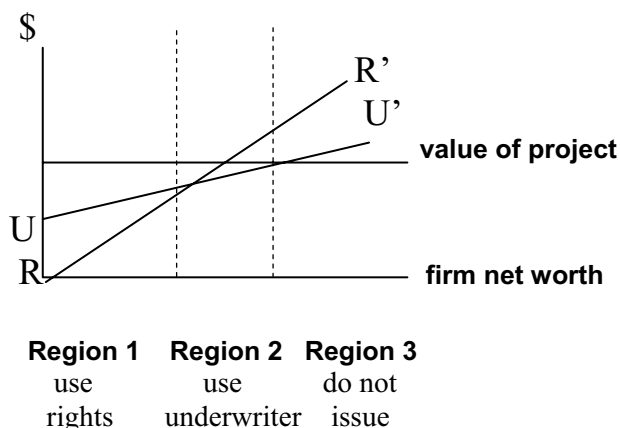
Firms may employ underwriters to certify their stock issues, in effect informing outside investors that the stock is not overvalued. Credible certification will reduce costs of adverse selection, and underwriters are able to provide such credible certification when they invest sufficient resources in establishing reputational capital (Booth and Smith, 1986). Underwriters need to earn a return on this invested capital, so they charge issuing firms fees for certification services. This accounts for the positive intercept of the line which shows costs of underwritten issues (line  $UU'$ ) in Figure 1. These fees for underwriter compensation increase issuing firms' out-of-pocket issue costs; however, for at least some issuers, the reduction in costs of adverse selection must outweigh the underwriting fee or else the underwriting industry would not exist. The positive slope of line  $UU'$  reflects the fact that underwriting may not totally eliminate a negative price reaction.

Which firms will benefit from underwriter certification? It will be relatively easy and low-risk for underwriters to certify strong, financially healthy firms, so these high-value firms will face low underwriting fees, which are likely more than offset by the reduction in adverse selection costs. The reduction in total issue costs (underwriting fee plus adverse selection cost) when high value firms employ underwriters is shown by the downward shift from line  $RR'$  to line  $UU'$  at the right hand side of Figure 1.

The benefit of underwriting for low value firms is not as clear. Underwriters may be unwilling to risk their reputational capital to certify these firms, making underwriting services unavailable to low value firms. This is consistent with the findings of Fernando, Gatchev, and Spindt (2005), who find that issuers and underwriters associate by mutual choice, not by firms choosing underwriters. Furthermore, these authors find that underwriters consider the probability that the issuer will remain in business (among other factors) when considering whether to underwrite an issue. Underwriter reluctance does not automatically imply that underwriters think the shares are overvalued. Beatty and Ritter (1986) and Dunbar (2000) demonstrate that underwriters must be concerned with both underpricing and overpricing, since both can cause a loss of market share. Carter and Manaster (1990) demonstrate that the desire to protect their reputations leads underwriters to refuse more speculative offerings. When underwriters are willing to underwrite issues for these low value firms, the firms will likely face high fees. Butler, Grullon, and Weston (2005) report that underwriting fees for seasoned common equity offerings can be ten times as high for some firms as for others. For low value firms, such high fees may outstrip the low costs of adverse selection they are intended to offset. This situation is shown in the left hand side of Figure 1, where total issue costs with underwriting fees (line  $UU'$ ) exceed the costs of adverse selection alone (line  $RR'$ ).

Facing the situation depicted in Figure 1, firms will make their decisions about issue and

**Figure 1. Costs of Underwritten Public (Line UU') and Non-Underwritten Rights (Line RR') Issues as a Function of Firm Net Worth**



investment, maximizing project value less total issue costs, subject to the constraint that project value exceed total issue costs.

Figure 1 shows the three outcomes that can result from this issue/invest decision. In Region 1 (which encompasses the lowest value firms) investment is profitable, but project value less total issue costs is maximized when no underwriter is employed. With little wealth to lose, and facing high underwriting costs from underwriters concerned about their own reputations, these distressed firms invest in potentially “make or break” investment opportunities and they find underwriters unnecessary, unwilling, and/or unaffordable. In the US, a non-private issue without underwriting virtually implies an uninsured rights offer. Anand (2003) reports that there are few direct (i.e., non-underwritten) issues of shares by corporations.

In Region 2 of Figure 1, investment is still profitable, but the higher valued firms in this region of the graph find their value is maximized when underwriters are used to certify the issue and contain wealth transfer.

Finally, in Region 3 of Figure 1, wealth transfer due to adverse selection becomes excessive, even with underwriter certification, and the higher valued firms in this region decide not to issue new shares, forgoing investment.

Is this scenario realistic? Rights firms in my sample have a median pre-issue market value of equity of \$35 million. Their median issue size is \$12.6 million. Using Altinkiliç and Hansen’s (2000, 2003) underwritten issue cost estimate of 10% or more for small firms, rights would still be cheaper for these firms even if non-underwritten rights entailed 3.6% higher costs of adverse selection than underwritten offerings ( $.036 \times 35 = 12.6 \times (.10)$ ). Consistent with my hypothesis, these low-valued firms would find it beneficial to forego underwriting and instead face the negative price reaction of a non-underwritten rights issue. Firms would reverse this decision as their market value of equity rises. At the median market value of equity of non-rights sample firms (\$283 million), public issues are optimal.

In summary, under the assumptions made here, when firms undertake equity issues, I expect that financially strong, healthy firms will employ underwriters, whereas firms in relatively poor



financial health, such as firms near bankruptcy or in financial distress, will find that underwriting costs offset savings realized and thus choose non-underwritten rights offerings.

The scenario I examine is at the opposite end of the firm value spectrum from that examined by Denis (1991). Denis hypothesizes that large, stable firms eligible to use shelf registration avoid the shelf method because shelf registration provides less certification and issuing firms thus lose too much in underpricing – they would rather pay the higher non-shelf underwriting fee. The small, low-value firms examined in the present paper avoid certification because the out-of-pocket expenses are too high. These firms willingly face the price decline that may result, since the total amount will be limited by their low value.

I also address two additional issues in rights offerings: the standby paradox and the lawsuit avoidance theory. First I address the standby underwriting paradox described by Hansen (1989): the question of why issuing firms do not hire an underwriter on a standby basis and then set a low subscription price so that the underwriter is not required to take up shares, thus keeping costs low. Hansen discusses a transaction cost explanation for this paradox. Patterson and Ursel (1993) present evidence consistent with significant costs to reducing the subscription price, thus potentially explaining the standby controversy. These costs could be included in those graphed by line RR' in Figure 1, and thus fit into my hypothesis. I will examine both transaction costs and costs of reducing the subscription price in my analysis.

The lawsuit avoidance theory states that underwriters may be unwilling to associate with troubled firms due to the possibility of shareholder lawsuits against the underwriter if firms fail shortly after issue. I search for empirical evidence of this in rights issues.

Why is it only recently that rights issues have become a popular form of last chance financing? Several explanations are possible. Access to underwriting services may have been particularly difficult in recent hot issue periods due to “crowding” in the primary underwriting markets, as discussed by Altinkiliç and Hansen (2000). Additionally, underwriters may have become more image conscious given recent increased academic and industry focus on underwriter rankings. Alternatively, rights may have become more popular as investors grew more familiar with and appreciative of the option characteristics of rights. This explanation is consistent with Autore, Kumar, and Shome's (2004) explanation of the recent revival in shelf offerings. Finally, as suggested by a partner at a merchant bank, by giving current shareholders the right of first refusal on new issues, rights offerings demonstrate managers' concern for existing shareholders, consistent with today's emphasis on good corporate governance.

It is not a simple lack of cash on hand to pay underwriters that leads firms in financial difficulties to use non-underwritten rights offerings. If cash on hand were the only problem, it could be remedied by increasing the offer size slightly to cover the underwriting fee. Instead, these firms have deep financial problems that cause underwriters to be unwilling to deal with them. I hypothesize that firms in this condition, which also have available investment opportunities, will be the ones to use rights offerings. This unique combination of circumstances is consistent with the small number of rights offerings observed.

The testable implications that follow from these scenarios are as follows:

- a) Non-underwritten rights offerings will be used by firms in poor financial condition;
- b) Rights firms have difficulty accessing underwriter services;
- c) Underwritten public offerings will be used by financially healthy firms; and
- d) On average, firms undertaking rights issues will show increased investment, but due to their high risks, not all rights firms' investments will succeed.

## II. Sample

I chose the sample period 1983-1999 to avoid major changes in US securities legislation that could impact flotation choice, for example, the introduction of shelf registration in 1982 and the Gramm-Leach-Bliley Act of November 1999 permitting commercial bank underwriting of equity issues (Ursel and Trepanier, 2001).

Moody's Manuals are the source for ownership concentration and financial statement data before proxy statements with ownership data became available on the Security and Exchange Commission (SEC) Edgar website. Because Moody's covered only NYSE and Amex issues at that time, the early years of the sample are limited to those two exchanges. Beginning in 1991, I added Nasdaq issues as Edgar provided data on ownership concentration. Datastream Advance is the source of financial statement data beginning in 1991.

The voluntary nature of Moody's manual coverage results in several NYSE and Amex issues being excluded from the sample. More Nasdaq issues are omitted, due to Datastream's relatively incomplete information for this exchange. However, the missing Nasdaq issues are unlikely to be problematic since the estimation of the model is determined largely by the NYSE and Amex issues. Only two rights issues meeting my criteria occurred on the Nasdaq in the 1991-99 period. Both of these issues are included in the sample. Furthermore, estimation of the model with and without Nasdaq data confirms no significant impact of NASDAQ issues.

Rights issues announced during 1983-1999 are identified by searching the "Rights Issued" section of Moody's Dividend Record for these years, the corresponding section of Standard and Poor's Annual Dividend Record and Security Data Corporation's (SDC) database. The following rights are not included in the sample:

1. Rights issued by firms not incorporated in the US. There may be institutional differences in other countries that explain why non-US firms use rights.
2. Rights issued by firms with pre-emptive rights in their charters. Such firms must undertake rights issues.
3. Rights to buy securities other than just the common stock of the issuing firm.
4. Rights issued by funds or trusts.
5. Rights issued by utilities or financial firms. These firms are traditionally omitted from studies of new offerings because their costs of adverse selection differ substantially from industrials due to regulations requiring these firms to disclose more information. Additionally, standard measures of financial distress do not apply to these firms.
6. Rights issued by a firm that had already had another issue included in the sample. These were omitted to ensure independence of observations in regression analysis. This is a particular concern because one of the variables is based on retained earnings, which is not independent over time.
7. Non-transferable rights.

Fifty-one rights issues meet these criteria. The full information required by the study is available from Moody's Industrial Manual and Datastream for 42 of these offerings.

All seasoned issues of straight common equity made by US industrial corporations listed on the NYSE, Amex, or Nasdaq for which complete information is available are included in the sample unless they are mainly secondary offerings by existing shareholders or are offered by a company that had another issue already in the sample. Combined with the sample rights issues, these bring the total sample size to 660 issues.<sup>3</sup> Maddala (1992) states that

<sup>3</sup>Three issues (one rights, two public offerings) which are extreme outliers are omitted. Two of the omitted firms are biotech companies that issued during the internet bubble. The third firm received a government bailout which distorted its financial ratios.



disproportionate sampling is not problematic in limited dependent variable regressions. The sample is comprised of 365 NYSE listed firms, 91 Amex listed firms, and 204 Nasdaq firms.

Stock exchange listing of the sample companies has the advantage of ensuring relatively complete information availability; however, due to listing requirements that shares trade above \$1, it precludes study of a group of rights-issuing firms that employ merchant banks to certify the issue. Such banks may restrict their involvement to firms with shares trading below \$1. Unaided, such firms are very likely to fail, but they may be saved by the intervention of an experienced party such as a merchant bank. However, such banks would only take on firms with viable assets. The number of firms with share prices below \$1 and viable assets is likely to be low, so it is unlikely a substantial number of observations are missed by not covering these issuers.

Shareholders of rights-issuing firms are informed of the offering by means of a letter of notification, along with a prospectus and subscription form. The notification letter briefly describes the issue. Typically, the subscription agents (generally banks that provide custody and other institutional services) make no commitment to provide a market in rights. Most of the rights trade on the same exchange as their issuing firm.

Table II summarizes characteristics of the sample rights issues, and compares relevant statistics for the sample firms that use rights and those that use public offerings. In the sample, the subscription price of the rights issue is, on average, a 13.5% discount from the stock's market price. The median discount is only 7.5%. Subscription discounts appear to be falling, with seven of the last eight rights issues in the sample offered at no discount from market price. Furthermore, a minority (27%) of sample issues contain an oversubscription privilege, and such privileges appear to be unrelated to the subscription price discount. Thus it does not appear that companies attempt to guarantee full subscription through their choice of subscription discount and oversubscription privilege.

Thirty-eight percent of sample rights prospectuses contain subscription precommitments from insiders committing, on average, to exercise 48% of the rights. Proxy forms from the year following the rights issue indicate an average increase in inside ownership of 0.5%. Subscription precommitments are a method of certifying and ensuring rights offerings also used in European rights issues (Børhren, Eckbo and Michalsen, 1997). Given that an alternative form of insuring the issue, standby underwriting, has become rare in the US (10%), it is interesting that precommitments are not more widely used. Another alternative, possibly aimed at ensuring rights issues, is used by 11% of issuers. This is the practice of a major equity investor in the firm committing to "backstop" the issue, that is, to exercise a number of any unexercised rights. In theory, this could differ from subscription precommitment by insiders, since backstopping implies that more than just the insider's own rights could be exercised. However, in my sample, the percentage of shares backstopped is somewhat less than the investor's ownership. Leibs (1999) raises the possibility that backstop provisions may be included in prospectuses at the insistence of creditors. Actual subscription percentages range from 43% to 100% in the sample, with an average of 88%.

Two thirds of sample rights firms exhibit trading in rights. The average trading volume over the subscription period is 18.45% of rights issued. The fact that rights are traded introduces the possibility of adverse selection costs. In 75% of cases of rights trades observed, the market price of rights is below their theoretical value. Though the absolute value of the deviation from theoretical value is small (maximum 31.25 cents), in percentage terms the difference may be quite high, enabling investors to acquire shares below their stock market value and thus introducing costs of adverse selection.

Debt is a critical concern for the sample rights firms. The average debt/equity ratio of

**Table II. Characteristics of Sample Rights Issues and Comparison of Rights and Non-Rights Issuing Firms**

<i>Panel A. Characteristics of Sample Rights Issues</i>			
	<b>All Rights Issues</b>	<b>Rights with Over Subscription Privilege</b>	<b>Rights without Over Subscription Privilege</b>
Issues with standby underwriting	10%		
Issues with subscription pre-commitments	38%		
Issues with oversubscription privilege	27%		
Subscription price discount - mean	13.5%	11.3%	15.6%
- median	7.5%	1.0%	10.0%
<i>Panel B. Comparison of Rights and Non-rights Issuing Firms</i>			
	<b>Rights Firms</b>	<b>Non-Rights Firms</b>	
Debt/equity ratio	2.08	1.15	
Offer period stock price change	-11%	-2.19% <sup>1</sup>	
% firms using proceeds solely to repay debt	80%	54% <sup>2</sup>	
% firms declaring bankruptcy $\leq$ 3 yrs from issue	20%	Approx. 3% <sup>3</sup>	
Firm size (assets) – mean	\$1 billion	\$1.5 billion	
-median	\$143 million	\$283 million	
Issue size – mean	\$88.6 million	\$90 million	
-median	\$12.6 million	\$51.7 million	

<sup>1</sup>Source: Corwin (2003), Altinkiliç and Hansen (2003)

<sup>2</sup>Source: Masulis and Korwar (1986)

<sup>3</sup>Source: Altman (1993)

Other data from Moodys, Datastream, Edgar, ABI/Inform Trade and Industry database, Altman (1993), BankruptcyData.com, NewsLibrary.com

sample rights firms (2.08) exceeds that of non-rights firms (1.15). At least 28% of sample rights firms have declared bankruptcy within the sample period; 20% within three years of their rights issues. This compares with a 3% failure rate over three years for all firms followed by Dunn and Bradstreet (Altman, 1993), and a 3-4% rate for firms that have issued seasoned equity (*Bankruptcy Yearbook and Annual*, 2003).

The high debt ratio of rights-issuing firms is evidence of debt overhang. The impact on stock price performance during the subscription period is predictable: Sample rights firms' stock prices fell an average of 11% during the subscription period, which averages 19 trading days. This compares with a cumulative abnormal return of -2.19% for the 11 days surrounding the issue day in Corwin's (2003) study of seasoned equity offerings. Altinkiliç and Hansen (2003) find underpricing of approximately 3% for seasoned issues.

Figure 2 presents a graph of cumulative average abnormal returns (CAARs) and trading volume for the shares of rights-issuing firms for a period around the subscription period. Although the graph is "lumpy" due to the small sample of quite volatile rights firms, some patterns are discernable. The most striking feature of the graph is the decline in stock value of the rights firms around the ex-rights day. A decline of up to 5% may be due to the quasi-split effect of rights offerings, given the formula in Patterson and Ursel (1993) and the substantial increase in shares outstanding in sample rights issues, as shown in Table VI. A further 2-3% decline could be due to price concessions necessary to offset transactions costs, which investors could face from selling unwanted rights. The timing and size of these

**Figure 2. CAARs and Volume Around Subscription Period**

declines is consistent with the transactions costs and quasi-split explanations of the standby underwriting paradox. Such declines could make firms unwilling to use even standby rights offerings as these declines would occur even in the presence of standby underwriting. The slight price recovery and increased trading volume following expiry is again consistent with Hansen's (1989) transactions cost explanation of the standby paradox: price concessions necessary to cover transactions costs are a temporary phenomenon surrounding the subscription period.

The extent to which the price decline graphed in Figure 2 exceeds the sum of the quasi-split and transactions costs indicates costs of adverse selection. Despite this high percentage price discount experienced by rights firms during the subscription period, the total dollar value decline may be less than the cost of underwriting, given the firms' low net worth. Altinkiliç and Hansen (2001) demonstrate that low quality issues face a higher underwriting cost curve than do higher quality issues. This is consistent with my explanation and Figure 1.

The sign of the correlation between stock returns over the subscription period and changes in inside ownership from the year-end before issue to the year-end after issue is negative. This is consistent with insiders having invested in successful issues in order to flip shares after a price rise; however, the relation is not statistically significant (even when a Spearman rank correlation is calculated to deal with the small size of the sample of rights firms). On the other hand, the correlations between stock price performance and investment (measured by change in assets after three years) and stock price performance and financial condition (measured by Altman's Z score) are positive and significant. These results are consistent

with the diagram in Figure 1 and the explanation of this paper, that financial condition and project value are the key variables, rather than ownership concentration. Correlation between stock return and subscription price discount is negative but not significant.

Although there is limited information, rights issues with standby underwriting appear to resemble non-underwritten issues, except for the stock price performance during the subscription period. As might be expected, underwritten issues experience less price pressure, and decline only 1.64%, similar to what Corwin (2003) finds for non-rights issues, and well above the -11% price performance of non-underwritten rights issues.

### III. Probit Model

I do not use the standard methodology of estimating and comparing costs of underwritten and rights issues (including negative stock price reaction) to test my explanation of the choice of issue method. The cost-measuring approach is subject to bias due to omitted or miscalculated costs. I also reject the approach of interviewing or surveying management to determine reasons for their choice of issue method. Patterson and Ursel (1987) find this approach provides little useful information. To directly test my explanation of managers' choices regarding issue methods (i.e., rights usage) and the financial condition of the firm, I instead use probit analysis, where the dependent variable is a dummy representing the rights/public issue choice and underwriter access, expected takeover, and the firm's financial condition are among the independent variables. As opposed to the cost-measuring approach, the probit procedure is similar in philosophy to the logistic regression approach used by Heron and Lie (2002).

Besides financial distress, underwriter access, and expected takeover, there are other variables that could affect rights usage and should therefore be controlled for in the study. These are discussed next.

Smith (1977) and Eckbo and Masulis (1992) note that shareholders who do not wish to exercise the rights issued to them are subject to capital gains taxes when they sell their rights. Thus firms with stock prices that have recently risen will be less likely to use rights offerings. Therefore, I include a variable representing capital gains. Under my explanation, financially distressed firms use rights. Such firms are unlikely to have experienced capital gains and thus, given the explanation of this article, this variable should also be negative.

Eckbo and Masulis (1992) argue that, all else being equal, firms with greater stock price uncertainty should make less use of rights offerings, because of the rights' greater value, which increases the profit from an investment strategy of taking a hedged short position in the firm's stock. To model this, I include a variable measuring stock price uncertainty.

Eckbo and Masulis (1992) note that if a firm has outstanding convertible securities or warrants, issuing rights at a discount could trigger reductions in conversion rates, thereby transferring wealth from common stockholders to convertible security holders. Accordingly, I include a dummy variable indicating whether the issuing firm has outstanding convertible securities. Under Eckbo and Masulis's analysis, firms with outstanding warrants or convertibles would be less willing to use rights issues. Under the explanation of the present paper, however, the use of convertibles is not expected to have a significant impact on rights usage.

As per the preceding discussion, the model to be estimated by probit analysis is as follows:

$$FC = b_0 + b_1 COND + b_2 TAKE + b_3 ACCS + b_4 CONV + b_5 CAPG + b_6 VOL + e \quad (1)$$

where FC is a dummy variable representing flotation method choice;  $b_0 - b_6$  are parameters to be estimated; COND is a measure of financial condition; TAKE is a measure of expected takeover; ACCS is a measure of access to underwriter services; CONV is a measure of convertible use; CAPG is a measure of capital gain; VOL is a measure of stock price volatility; and  $e$  is an error term.

The dependent variable in Equation (1) is dummy coded “one” for rights issues and “zero” for public offerings. A discussion of the measurement of the independent variables follows. Several of these variables are measured in more than one way to test the robustness of the model.

Financial condition (COND) is modeled with Altman’s (1968) Z-statistic, which is developed to predict bankruptcy. Altman develops the Z-statistic using discriminant analysis to distinguish weighted combinations of corporate financial ratios which best predict bankruptcy. The ratios that prove to be most important in bankruptcy are: working capital/total assets; retained earnings/total assets; earnings before interest and taxes/total assets; market value of equity/book value of total debt; and sales/total assets. In the present study, these ratios are calculated using data for the year prior to the equity issue, using data from Datastream and Moody’s manuals. Share price data in Moody’s is restricted to yearly highs and lows, so the average of these is used to calculate the market value of equity. High values of Z are associated with low probability of bankruptcy. Thus, under the explanation of this paper (that rights are used by firms in poor financial condition), the variable COND is expected to be significantly negatively related to rights usage. Although Altman’s model has been criticized (Grice and Ingram, 2001), it is still the foremost model of financial distress, and continues to be used in financial research (Berger, Ofek, and Swary, 1996).

Prospectus statements about current shareholder takeover of rights cannot be used to measure expected takeover because only about one third of prospectuses contain such statements, and these statements are necessarily incomplete, as they cover only major shareholders. Because expected takeover is both difficult to measure and an important alternative to my own explanation of rights usage, I employ several different approaches to measuring it in alternative model specifications. First, in line with Eckbo and Masulis’ ownership concentration takeover measure ( $\ln(\text{market value of equity})/\text{number of common shareholders}$ ), I proxy for expected takeover with  $\ln(\text{assets})/\text{number of common shareholders}$ . Substituting assets for the market value of equity avoids bias towards rejecting the importance of ownership concentration that could result in the sample, where rights firms are expected to have depressed stock prices. Recognizing that asset levels will be influenced by leverage (which may be particularly high for firms in poor financial condition) I substitute a measure of book value of equity in the numerator to form another proxy of takeover. The measure of book value that I use, paid in capital, avoids retained earnings, which will be depressed for firms in poor financial condition. Data for these specifications comes from Moody’s. A third measure of ownership concentration and thus expected takeover is calculated as the total percentage ownership of all persons holding five percent or more of a firm’s stock (beneficial ownership), as in Kothare (1997). This data is obtained from proxy statements on the SEC’s Edgar web site and from EdgarPlus in the Nexis/Lexis database. This information is only available beginning in 1990. Finally, I model actual takeover in rights firms using the same variables as Hansen, Pinkerton, and Ma (1986), and use the resulting model to calculate an expected takeover level for all sample firms (TAKE4). In place of Hansen, Pinkerton, and Ma’s “lottrade” variable, which measures ownership concentration, I use beneficial ownership. Of the three measures discussed above, beneficial ownership is the only ownership measure that proves significant in this model of expected takeover, and issue size is the only other relevant explanatory variable.

Of the total sample of 660 firms, data to calculate TAKE1 is available from Moody's for 456 firms (372 for TAKE2), and beneficial ownership data to calculate TAKE3 is available for 335 firms. Consistency in regression results for these subsamples will give increased confidence in the findings. Disparate findings would indicate sample-specific results.

Two measures of stock price variability are again used to test the robustness of the model. The first measure, VOL1 is calculated using the yearly high and low price data from Moody's and Datastream. High and low stock prices for the year preceding issue are used in the formula:  $(\text{high price} - \text{low price}) / \text{average price}$ . VOL2 is the more conventional measure of the standard deviation of daily stock returns. Daily stock price data for the year preceding issue are obtained from Datastream. The stock price variability variable is expected to be significantly positive, because companies in poor financial condition are likely to have high stock price variance.

I measure firms' access to underwriter services by noting the level of prestige of the underwriter they are able to employ. I use the Megginson and Weiss (1991) measure of underwriter reputation, that is, market share. I calculate market share of the seasoned equity market over the period of the study, crediting underwriting firms created by the combination of existing firms with the volume of their predecessors. As shown in Table III, this index corresponds closely with those of other authors, although there are slight differences due to the different periods studied. I compute a second underwriter ranking for the 1990s subsample (which uses beneficial ownership as the measure of ownership concentration). The major change in the 1990s underwriter ranking is the disappearance of Drexel, Burnham, Lambert, which declared bankruptcy in February 1990 (Altman, 1993).

Most of the sample rights offerings are not underwritten. I estimate the quality of underwriter the rights firms would be able to attract by regressing the underwriter prestige index I develop for the underwritten issues on characteristics of these issues. The resulting formula is applied to the same characteristics of the rights issues to yield estimates of the quality of underwriter rights firms could attract if they chose to do so. To determine what issue characteristics to use as regressors, I note that Carter and Manaster (1990) say, "prestigious underwriters are associated with low risk issues." Two variables that have been associated with issue risk are issue size and issue price (Booth and Chua, 1996). In fact, Booth and Chua perform an estimation of underwriter quality similar to mine using a regression equation with the variables issue size and issue price. I use these variables plus a dummy variable set to one if the firm is traded on the NYSE. The overall equation is highly significant. For the non-rights issues I use this equation to estimate the level of prestige of the underwriter the issuing firm could attract, and therefore the value of the underwriter access variable.

A second measure of access to underwriter services (one that is simpler and involves fewer assumptions) is also estimated. For the second measure, a dummy variable is set equal to zero for Amex and Nasdaq-listed firms, and one for NYSE-listed firms, reflecting the fact that NYSE-listed firms are, on average, underwritten by higher prestige underwriters. It is expected that rights use will be negatively related to these measures of underwriter quality.

Two measures of capital gains are used to test the sensitivity of the model. For CAPG1, averages of high and low stock prices for the two years prior to issue are obtained from Moody's manuals and Datastream, and the increase in the average stock price divided by the average price in the earlier year is used to measure capital gains. CAPG2 is calculated using daily stock price data from Datastream for the year prior to issue. The existing literature maintains that capital gains may be a significant consideration in flotation method choice (for tax reasons), and if so, this variable would be significantly negative. Firms in poor financial condition are not likely to have capital gains. Therefore, given the explanation of



**Table III. Top Underwriters – Various Indices**

<b>Beatty and Welch Ipos and Seasoned, 1994</b>		<b>This Paper Seasoned, 1983-99</b>		<b>Carter and Manaster IPOs, 1979-83</b>	
<b>Underwriter</b>	<b>Rank</b>	<b>Underwriter</b>	<b>Market Share</b>	<b>Underwriter</b>	<b>Carter and Manaster Index</b>
Merrill Lynch	1	Goldman Sachs	15.13%	First Boston	9
Goldman Sachs	2	Merrill Lynch	10.66	Goldman Sachs	9
Morgan Stanley	3	CS-First Boston	9.64	Merrill Lynch	9
Lehman	4	Lehman	7.52	Morgan Stanley	9
CS-First Boston	5	Salomon	7.03	Salomon Bros	9
Salomon	6	Morgan Stanley	6.34	Bache Halsey	8
DLJ	7	DLJ	5.32	Bear Stearns	8
Paine Webber	8	DBL	3.12	Blyth Eastman	8
Smith Barney	9	Smith Barney	2.82	E.F. Hutton	8
Montgomery	10	Bear Stearns	2.46	Kidder Peabody	8
Alex Brown	11	Kidder Peabody	2.07	Lazard	8
Bear Stearns	12	Alex Brown	1.57	Lehman	8
DBL	13	Montgomery	1.25	McDonald	8
JP Morgan	14	Paine Weber	1.11	Rothschild	8
Robertson	15	Dillon Read	0.72	Smith Barney	8

DLJ = Donaldson, Lufkin, Jenrette

DBL = Drexel, Burnham, Lambert

*Sources:* Beatty and Welch (1996): Table III, Carter and Manaster (1990): Appendix II. This article: SDC Global Platinum Database

this article, the variable is also expected to be negative, but for different reasons.

As discussed above, Eckbo and Masulis (1992) postulate that firms with outstanding convertible securities or warrants will be less likely to use rights offerings due to the wealth transfer that would occur when rights offerings trigger the anti-dilution clauses usually found with convertibles. Therefore, a variable for convertible use (CONV) is formed by setting a dummy variable equal to one if, in the year prior to issue, Moody's manuals revealed that the company had outstanding securities convertible into common shares. Under the hypothesis of this article, the variable is not expected to be significant.

Details about the sample and variables are presented in Table IV. The rights firms are distributed across several manufacturing, retail, and leisure service fields and do not appear to be clustered in particular industries. The median rights firms' Z score is about half that of non-rights firms, and in fact the average rights' Z score is in the range Altman (1968) refers to as "bankrupt". Rights firms' capital gains in the year preceding issue are, on average, negative, and are well below those of non-rights firms. The median underwriter rank of rights firms is well below the average for non-rights firms, which implies a substantially lower level of underwriter prestige. The other differences between the two groups of firms are less pronounced. Rights firms are slightly more likely to use convertible securities, and their stock prices are more volatile.

Table V shows the estimated coefficients, associated t statistics and overall goodness of fit tests for probit estimation of various specifications of Equation (1), which models the use of rights as a function of financial condition, underwriter access, and other variables. Results for the 1983-99 NYSE and Amex sample are in Columns 1 and 2 of Table IV. Columns 3 and 4

**Table IV. Sample Characteristics**

<b>Variable/Characteristic</b>	<b>Entire Sample</b>	<b>Rights Only</b>	<b>Public Only</b>
Altman's Z score (COND) - mean	5.92	1.78	6.16
- median	3.63	1.88	3.77
Underwriter rank (ACCS) –mean	0.08	0.01	0.08
- median	0.03	0.01	0.06
Beneficial own (TAKE3) – mean	43.32%	52.72%	42.78%
- median	37.26%	56.60%	39.75%
Volatility (VOL) – mean	0.66	0.82	0.65
- median	0.63	0.80	0.62
CAPG (based on hi & lo prs)- mean	0.46	-0.18	0.50
median	0.26	-0.41	0.27

The data are from the SDC database, Moody's Industrial Manuals, Datastream, Edgar, and EdgarPlus.

show the results for the 1990's NYSE, Amex and Nasdaq sample. Columns 1 and 2 use takeover measures based assets per shareholder and paid in capital per shareholder, whereas Columns 3 and 4 use the takeover measure based on beneficial ownership from prospectuses. All of the model specifications have high overall significance.

The results in Table V show that financial condition (COND) is highly significantly related to rights usage. The sign of the relation between the variables is as predicted in my explanation. Financial distress, denoted by low Z scores and therefore low values of COND, is positively related to rights usage. Therefore, COND is negatively related to rights usage. The significance of this relation is high across the various definitions of ownership concentration. This finding is consistent with the model in Section I, where low-value firms eschew underwriting contracts because the expense of such contracts is not warranted given the limited amount of wealth these distressed firms have to transfer.

The underwriting ranking variable used to measure access to underwriter services is significantly related to rights usage. The sign of the relation is as predicted, that is, those firms with less access to underwriters are greater users of rights, when all else is equal. This result is consistent with my explanation that low-value, highly distressed firms, which reputation-conscious underwriters are less likely to serve, are more likely to use rights offerings. Though not shown in Table V, the alternative measure of underwriter access (the dummy variable for NYSE listed firms) yields qualitatively similar results.

Capital gains, measured using annual share price minimums and maximums, are significantly related to rights usage. Though not shown in Table V, the less variable measure, based on less extreme year end stock prices, is marginally significant in modeling rights usage. The significance of the capital gains variable may indicate tax-motivated reasons for rights use, as discussed above, although it is also possible that the capital gains measure may be acting as a market-based measure of financial distress, corresponding to the Z score's book value measure of distress.

Stock price volatility measured using annual share price minimums and maximums is highly significant in one specification of Equation (1) and only marginally significant when the less variable measure of volatility based on daily stock price returns is used. To the degree that volatility is significant, its significance is consistent with highly levered rights-using firms investing in high risk projects to minimize capture of benefits by debtholders.

Table V shows that two variables are consistently insignificant: convertible use (CONV), and expected takeover (TAKE).

The insignificance of the convertible securities variable is consistent with rights using

**Table V. Coefficients and t-statistics for Probit Estimation of Equation (1)**

Variable	Variable Name & Definition	Column 1	Column 2	Column 3	Column 4
Financial Condition	COND (Altman's Z)	-0.2852** (-3.49)	-0.1872** (-2.43)	-0.2692*** (-2.95)	-0.2469** (-2.55)
Capital Gains	CAPG1 (based on hi & lo prs)	-1.6457*** (-3.49)	-1.9259*** (-3.88)	-1.5485*** (-2.99)	-1.8404*** (-2.89)
Expected Takeup	TAKE1 (asset/shareholder)	1.7654 (0.71)			
“	TAKE2 (paid in cap/shdlr)		2.3943 (0.89)		
“	TAKE3 (beneficial ownership)			0.0130 (1.52)	
	TAKE4 f(beneficial ownership)				0.9715 (1.59)
Access to Underwriters	ACCS1 (underwriter rank)	-22.69*** (-3.99)	-4.65** (-2.42)	-24.55*** (-3.12)	-17.9560** (-2.08)
Convertible Use	CONV (dummy 1=yes)	-0.0746 (-0.32)	0.1386 (0.60)		
Stock Price Volatility	VOL1 (based on hi & lo prs)	0.7710*** (2.77)	0.6842* (1.68)	0.9929* (1.65)	0.6910 (1.06)
Constant		-0.6285 (-1.56)	-1.3097*** (-3.05)	-1.2343* (-1.79)	-1.3893* (-1.78)
Likelihood Ratio Test		81.12	51.19	79.82	67.35
p-value		0.0000	0.0000	0.0000	0.0000
N		456	372	335	319

\*\*\*Significant at 0.01 for a two-tail test.

\*\*Significant at 0.05 for a two-tail test.

\*Significant at 0.10 for a two-tail test.

firms proceeding with rights issues without regard for the potential impact of rights offerings triggering anti-dilution clauses of any outstanding convertible securities. Due to its insignificance, this variable was omitted from the 1990s NYSE, Amex, and Nasdaq sample.

In contrast to earlier studies, proxies for expected takeup are insignificant in this analysis, regardless of the manner in which they are calculated. Because ownership concentration has been found to influence other financial variables in a nonlinear fashion in some studies of

corporate governance (e.g., Morck, Shleifer and Vishny, 1988), I also try adding a squared value of this term to the regression equation. The quadratic term is not significant, nor does it alter the significance of other variables. The insignificance of the expected takeover variable suggests that rights-issuing firms proceed with rights issues without regard for expected levels of takeover. This could be indicative of the seriousness of their financial situations and the corresponding limited firm value to be lost if low takeover levels send an adverse signal to the financial markets.

These ownership concentration results differ from the findings of earlier studies, implying time variation in the factors influencing rights usage. Because my sample period is quite long, there are concerns about the stability of findings over the sample period. The results for the beneficial ownership sample provide an informal test of the stability of my findings over the sample period. Because beneficial ownership observations are all from the 1990s, a comparison of the findings for this sample with the findings of a sample covering my entire sample period (1983-99) will provide an indication of the stability of my results over the period. Comparing the beneficial ownership findings with the findings for the base model and/or the paid in capital model confirm that the major determinants of rights offerings are financial distress and underwriter access, throughout the entire sample period.

Because these findings regarding ownership concentration differ from those in the existing body of research on rights offerings, they merit additional scrutiny. To the extent that I use proxies for the true underlying variable (expected takeover) there is an errors in variable problem which introduces bias (Kennedy, 1997). Such problems are, unfortunately, endemic to economic research (Morgenstern, 1963) and little can be done to escape them (Griliches, 1985). I have attempted to address this problem by employing four different proxies (in separate regressions) over two different time periods. The results of the four regressions with four different proxies consistently show no significance. It is possible that the variable appeared to be significant in previous research due to the omission of a significant regressor such as the financial condition variable used in this study, or that the significance of this variable has changed from the period of the earlier studies.

#### **IV. Post Offer Characteristics**

Table VI presents information on sample rights firms post-issue. Though a sizeable percentage of these firms declare bankruptcy within three years of issue (20% versus approximately 3% in the general population), most of the surviving rights firms exhibit significant turn-arounds from their distressed pre-issue states. These statistics demonstrate that it is reasonable for investors to provide capital to distressed rights-issuing firms, and thus reasonable for many distressed firms to undertake rights issues.

Surviving firms make significant reductions in book debt and show evidence of substantial investment, as indicated by a 25% increase in assets after 3 years. These improvements are reflected in higher share prices and Z statistics, indicating recovery from bankruptcy. These results are consistent with the testable implications of my explanation of rights usage.

A search of the ABI Trade and Industry database yields several articles that reveal the companies' coping strategies. Most firms (e.g., Revco, Hanover Direct, and Texfi) appear to benefit from operational strategies of eliminating unprofitable product lines and concentrating on niches where they can succeed (Wruck, 1990; Oberndarf, 1997; Lappan, 1989). At least one bank lender also agreed to more flexible loan conditions (Oberndarf). As Leibs (1999) suggests, with reference to the Samsonite case, sample rights firms may benefit from advice

**Table VI. Post Offer Characteristics**

<i>Panel A. All Rights Issues</i>			
	<b>+1 year</b>	<b>+2 years</b>	<b>+3 years</b>
Median % change in book debt	-11.72	-30.95	-11.82
Median % change in assets	-2.77	8.24	13.90
Median % change in share price	-15.00	-7.31	9.69
Median % change in shares outstanding	42.34	64.81	62.66
Median Z score	2.82	4.91	3.91
<i>Panel B. Rights Companies Solvent for <math>\geq 3</math> Years (80% of Rights Companies)</i>			
Median % change in book debt	-20.95	-30.95	-11.82
Median % change in assets	5.50	19.21	25.97
Median % change in share price	11.99	15.39	9.69
Median % change in shares outstanding	42.34	64.81	62.66
Median Z score	3.46	4.91	3.91
<i>Panel C. Rights Firms that Declare Bankruptcy within 3 Years of Issue (20% of Rights Companies)</i>			
Median % change in book debt	-6.06	N.A.	N.A.
Median % change in assets	-24.64	-88.57	-87.92
Median % change in share price	-56.02	-98.08	N.A.
Median % change in shares outstanding	9.79	N.A.	N.A.
Median Z score	-2.11	N.A.	N.A.

from knowledgeable and experienced creditors such as banks. This is consistent with Wruck's (1990) view that there are benefits to financial distress, and that workouts in which debtors and creditors agree to terms can be to the benefit of both parties by saving the firm from bankruptcy. In these ways, debt overhang problems can be reduced.

Though 20% of rights firms declare bankruptcy within three years of issue (as compared to 3-4% of seasoned issuers that do not use rights), I cannot say if lawsuit avoidance is responsible for the lack of underwriting, since no firms with underwritten rights issues went bankrupt during my sample period.

## V. Concluding Remarks

US industrial rights offerings have not disappeared, but certain aspects of these offerings have changed over time. The vast majority of such offerings now have no standby underwriting provision. Lack of underwriter certification would suggest high costs of adverse selection. The explanation of this article is that the group of industrial firms using rights offerings is relatively unconcerned with wealth transfer due to adverse selection because its firms are financially distressed and have little wealth to transfer. I also predict that these firms will have difficulty accessing underwriting services, due to their poor financial condition and underwriters' desires to maintain prestige.

My empirical results are consistent with these explanations and suggest that the typical US industrial firm employing a rights offering is in very poor financial condition with a high level of debt. On the verge of bankruptcy and, given limited shareholder liability, these firms proceed with rights issues without regard for their impact on antidilution clauses in outstanding convertible securities, or the likely takeup level of the rights by existing shareholders. Further, I demonstrate that firms using rights do not have access to as high quality underwriters as non-rights firms.

My findings also show that some distressed firms do raise equity capital and invest, contrary to the view expressed in much of the finance literature that distressed firms shun equity issues (e.g., Myers, 1977, Gertner and Scharfstein, 1991). Furthermore, post-issue most rights firms show significant improvement in operating and financial performance, demonstrating that such offerings are a rational vehicle for both investors and issuing firms.

Finally, I show how issue methods change over time with changing financial conditions. After accounting for financial condition and underwriter access, I show that variables, which have in the past been associated with rights usage (e.g., ownership concentration), are no longer relevant. ■

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