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Direct Equity Financing: A Resolution of a Paradox

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ABSTRACT

When raising new equity capital managers have historically rejected the direct offer method favoring instead the seemingly more expensive underwritten public issue. This paper provides a resolution for this equity financing paradox by demonstrating empirically that firms which engage in direct offers enjoy a comparative cost advantage that is more than sufficient to account for the absolute reported cost differences between the two methods of equity financing.

ONE OF THE UNRESOLVED issues confronting financial economists is the following equity financing paradox. Historically, U.S. firms have overwhelmingly elected to employ investment bankers to underwrite and publicly distribute their new equity offerings. Yet the reported flotation costs as a percent of issue size have been substantially less for nonunderwritten privileged subscription (direct) offerings. The fact is evident in periodic Securities and Exchange Commission studies which generally report that less than 5 percent of all new common stock is offered nonunderwritten to current owners, and that reported costs as a percent of issue size for these offerings generally run 4–10 percent less than corresponding costs for fully underwritten public offerings.¹

The purpose of this paper is to provide a resolution of this equity financing paradox. In Section I, we review the paradox. In Section II, we advance the hypothesis that the direct offer only occurs under special conditions that give it a comparative cost advantage over competing methods of issuing new common stock. In Section III, we undertake a rigorous examination of the comparative cost hypothesis, and we present evidence that supports the comparative cost hypothesis and partially rejects a competing monitoring cost hypothesis. Further implications of our findings for the resolution of the equity financing paradox,

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¹ Fully underwritten public offerings are often referred to as firm underwritten offerings. Nonunderwritten equity issues offered directly to existing stockholders are also known as direct offers, nonunderwritten rights offerings, and nonunderwritten privileged subscriptions. Several historical flotation cost studies of U.S. firms include SEC [11], [12], [13], and [14].

and for firms which elect to employ the direct offer in the absence of a comparative cost advantage, are taken up in Section IV. Summary remarks are contained in Section V.

I. The Equity Financing Paradox

Table I contains summary data from two frequently cited studies of common stock flotation costs: the 1974 SEC [12] report on registered issues occurring in 1971 and 1972, and the extensive study by Clifford Smith [6] for the period 1971 through 1975. The behavior of the reported total costs as a percent of issue size is similar in both studies.² First, the cost figures in both studies indicate that it costs roughly 14¢ to raise \$1 of equity if the underwritten offering is smaller than \$1 million, but that it costs 4¢ per dollar raised in a \$100 million underwritten issue. Second, the per dollar reported costs for the nonunderwritten privileged subscription are significantly less than the reported flotation costs for similarly sized firm underwritten equity financings. Looking again at Smith's cost figures, it appears that it costs roughly \$3,800,000 more to raise \$100 million by a firm underwritten contract than by a nonunderwritten rights offering. This persistent significant cost difference between the underwritten and nonunderwritten financing methods combined with the preponderance of underwritten offerings is the equity financing paradox.

Smith initially attempted to resolve the paradox by supposing that there were large systematic unreported costs associated with the direct offer; he could not, however, identify any significant unreported expenses. Smith also offered a monitoring cost hypothesis that managers employ the services of investment bankers to enjoy access to bribes and to special deals which hired investment bankers may currently have in their merchandising portfolios. Thus, Smith argues that the cheaper nonunderwritten method of raising equity capital is ignored by managers at the expense of current stockholders, who must otherwise incur even greater monitoring costs to limit management's behavior.

The equity financing paradox, which is equally apparent in the flotation costs compilations of both the SEC and Smith, is now widely acknowledged in leading corporate finance textbooks (see, for example, Brealey-Myers [2], Van Horne [16], and Weston-Brigham [17]). Brealey and Myers, for example, rely heavily upon Smith's flotation cost compilations when they conclude that there is no rational wealth maximizing behavioral explanation for the equity financing paradox and list this paradox among their ten most important unsolved problems in finance. It is our contention that *ceteris paribus* comparisons of the reported flotation costs of Table I are misleading because the issuers using the underwritten public offering contract are systematically different from those firms which adopt the nonunderwritten rights contract.

² The total expense figure for the underwritten public offerings is the sum of two reported cost figures; the compensation expense paid to underwriters plus other expenses incurred directly by the firm and not related to underwriter compensation. For the nonunderwritten rights offering, the total expense figure consists entirely of the expenses incurred directly by the firm. See SEC [9], [10], [11], and [12].

Table I
Flotation Costs As Reported by the SEC and by Smith

Nominal Issue Size (\$mil- lions)	Underwritten Public Offerings			Nonunderwritten Rights Offerings				
	SEC		Smith	SEC		Smith		
	1971 through 1972	1971 through 1975	1971 through 1975	1971 through 1972	1971 through 1975	1971 through 1975		
	Total Expense	N = 1599	Total Expense	N = 484	Total Expense	N = 22	Total Expense	N = 39
0.0 to 0.49	23.59	43	—		11.82	2	8.99	3
0.5 to 0.99	20.74	227	13.74	6	1.65	1	4.59	2
1.0 to 1.99	16.47	271	15.29	18	7.30	4	4.90	5
2.0 to 4.99	11.90	450	9.47	61	3.02	6	2.85	7
5.0 to 9.99	8.73	287	7.03	66	1.74	3	1.39	6
10.0 to 19.99	6.63	170	5.55	91	0.38	1	0.72	3
20.0 to 49.99	5.03	109	4.67	156	—		0.52	1
50.0 to 99.99	4.25	30	4.18	70	0.23	1	0.21	2
100.0 to 499.99	3.19	12	3.95	16	0.12	4	0.13	9

Notes: (i) flotation costs are measured as a percent of issue size; (ii) the cost figures are obtained from Table A-7, in SEC[12], and from Smith [6], Table 1; (iii) the firm underwritten cost figures are the sum of reported compensation expense to underwriters and all other reported expenses incurred by the issuer; and (iv) major differences between the Smith data and the SEC data may be accounted for in part by the exclusion by Smith of secondary offerings, initial offerings, offerings by unlisted issuers, and offerings containing more than one kind of security.

II. The Comparative Cost Hypothesis

The survivor principle which asserts that efficient contractual forms will persist over time and that inefficient contractual forms will be driven from the market when competing with relatively more efficient contractual methods, suggests that despite appearances the underwritten public offering may be an efficient contract.³ In the case of equity financing campaigns, a variety of contractual forms have persisted, popular among which are the underwritten public and privileged subscription offers. Other well known enduring contracts include investment bankers assisted contracts such as the best efforts contract, as well as the nonunderwritten rights or direct common stock offering.⁴ According to the survivor principle, the persistent coexistence of these several contractual forms is evidence that each is efficient. This suggests the hypothesis that there must exist particular conditions under which each method of contracting has a comparative cost advantage over other forms.

To reconcile the equity financing paradox with this comparative flotation cost hypothesis, we focus here upon the direct offering contract, the distinguishing features of which are the absence of the underwriting and distribution functions of an investment banker, and the marketing of the common stock to current stockholders rather than through potential external equity channels. To the extent that underwritten contracts are indeed efficient, and that it is frequently efficient to raise new equity capital through external channels, then the comparative cost hypothesis suggests that firms adopting the direct offer method must generally exhibit characteristics that make inferior these otherwise common equity financing practices. To determine the presence of such distinguishing characteristics, we identified all direct offerings occurring from January 1971 through December 1979 for which we could obtain reported flotation costs.⁵ A preliminary examination of the issuing firms revealed that they are distinguished by the presence of a large block of existing common stock controlled by either a single outside stockholder, or by their officers and directors (hereafter the board). For the 54 direct offerings for which common stock ownership data were verifiable, the average level of control exceeded 61% of the outstanding common stock of the issuing firm. Thus, the typical sample firm offered more than half of its newly issued common stock to either a single outside owner or to its own board.

Table II presents the reported flotation costs for these direct offerings, by real issue size and by the percent of outstanding common stock centrally controlled.⁶

³ For a classic statement and application of the survivor principle, see George Stigler [7].

⁴ For a theoretical discussion that focuses upon the method of equity financing decision, emphasizing the role played by the benefits from insuring the contracts, see Mandelker and Raviv [5], and emphasizing the role played by informational asymmetries which can arise between issuer and syndicate in an underwritten financing campaign, see Baron and Holmstrom [1].

⁵ Flotation cost and issue size data were obtained from the SEC Registered Offering Statistics tapes [15] covering the 1971 to 1978 era. For 1979, the cost and issue size data were obtained from information available in the prospectus of the issuer. Note also that our cost analysis focuses upon reported flotation costs. For an examination of other possible unreported costs which may occur, but are not explicitly examined here, the reader is referred to Smith.

⁶ The ownership control data were obtained from copies of annual "10-K" and supporting reports submitted by the respective issuing firms, SEC [13], from *Moody's Manuals*, and *Value Line*.

Table II
Direct Offering Flotation Costs By Issue Size and Ownership Control of The Issuer

Real Issue Size (\$ mil- lions)	Percent of Centrally Controlled Common Stock Holdings							
	0% to 33.3%		33.4% to 66.7%		66.8% to 100%		All	
	Total Expense	N = 11	Total Expense	N = 17	Total Expense	N = 26	Total Expense	N = 54
0.0 to 0.49	8.28	3	7.45	2	3.87	1	7.27	6
0.5 to 0.99	4.54	1	6.47	2	3.90	2	5.06	5
1.0 to 1.99	8.94	2	3.27	1	0.99	1	3.31	4
2.0 to 4.99	4.40	5	2.32	4	1.05	4	2.73	13
5.0 to 9.99	—		1.63	5	1.41	1	1.59	6
10.0 to 19.99	—		1.90	1	0.92	3	1.16	4
20.0 to 49.99	—		0.84	2	0.14	1	0.61	3
50.0 to 99.99	—		—		0.19	3	0.19	3
100.0 to 199.99	—		—		0.13	8	0.13	8
200.0 or more	—		—		0.13	2	0.13	2

Note: Real Issue Size is the value of effectively registered equity expressed in January 1971 dollars.

Almost one-half of all direct offers are initiated by firms for which at least 66.7% of outstanding common stock is centrally located with a single owner or with the board of the issuing firm. It is also apparent from Table II that one in five direct offers is initiated by "low control" firms—those characterized by less than one-third of the outstanding common stock centrally located. The issue size categories in Table II are defined in terms of January 1971 dollars, but aside from this difference, the per dollar flotation cost figures presented for the entire sample are comparable to those displayed in Table I.⁷

One notable feature of Table II is that it contains several direct offerings which are very large, some of which exceed \$250 million. Many of these same large offerings are also reported in the SEC data and the Smith data of Table I. For these particular issues, the average flotation cost is less than one-fifth of one penny per dollar of equity issued. When this cost figure is compared to the cost of a similarly sized firm underwritten contract, which Smith and the SEC both report to be about 4¢, the perplexing nature of the equity financing paradox is most evident. A cursory examination of these particular costs figures appears to indicate that some firms are paying twenty times the expenses incurred by others when they employ investment bankers to raise an otherwise similarly sized offering. For the thirteen largest direct offers, however, this paradox is quickly resolved: these thirteen direct offerings of common stock are the equity issues of American Telephone and Telegraph (ATT) subsidiaries, which over the nine year period of this study issued \$1,990,000,000 of equity through the direct offering method, at a total cost of approximately \$2,600,000.⁸ Thus, for the large direct offers the seeming paradox, introduced when comparing the noted 4¢ per dollar issued with the 1/5¢ per dollar issued, is resolved by the realization that the favorable cost figure is enjoyed only by firms that are at least 85% controlled by ATT. Apparently, at levels of extremely high control, the direct offer approaches the trivial process of passing a check from a dominant stockholder to the issuing firm, a process recognized in the following quote from the *Wall Street Journal* (9/24/71) describing the direct offering by Illinois Bell Telephone:

American Telephone & Telegraph Co. owns 99.32% of Illinois Bell's stock, and it is expected to accept its allocated amount of additional shares. The proposed subscription offer therefore amounts essentially to an internal financing by the AT&T organization. (p. 23, c 2)

This particular offering was for the nominal sum of \$154.1 million, and it was transferred from ATT at a flotation cost of less than \$200,000.⁹ We see little reasonable basis for inferring that another firm lacking a parent such as ATT could expect to raise the same \$154 million at such a bargain price.

A second notable feature of Table II is that flotation cost economies appear to

⁷ Both the SEC and Smith issue size categories are in nominal dollars, while our size categories are reported in real (January 1971) dollars. Thus our figures are most directly comparable to the SEC figures and less so to Smith's cost figures which contain a slight upward inflationary bias.

⁸ Three offerings each of Pacific Northwest Bell T&T, and New England T&T, two offers of Pacific T&T, four offers of Mountain States T&T, and one offer of Illinois Bell Tel.

⁹ It is revealed in the SEC registration statements that 92% (\$182,000) of Illinois Bell's flotation expenses went to various government agencies: \$74,017 to the Illinois Commerce Commission, \$77,046 for the Illinois License and Filing Fee, and \$30,818 for the SEC registration fee.

exist with respect to both issue size and to the level of central control. Flotation cost economies to scale will occur when, in the presence of fixed costs, variable expenses which are directly related to issue size remain essentially constant on a per dollar issued basis. Three components of reported total flotation cost may be regarded as directly related to issue size. First, issuing firms incur exchange listing fees for the newly issued shares and these fees are levied at a constant per share rate. Thus, while strictly speaking these fees are not constant per dollar issued, in the absence of any systematic relation between offer price and issue size the averaged per dollar listing fee is independent of issue size. A second variable expense is the payment of a registration filing fee to the SEC; but since this fee is the maximum of either \$100 or one-fiftieth of one percent of the aggregate offer price, it is essentially independent of issue size. Issuing firms will also incur state taxes and fees which are levied on a per dollar issued basis and are, therefore, independent of issue size. The primary fixed cost appears to be the legal and accounting fees which result from the registration statement filing process. Additional sources of fixed expenses may include the payment of registrar's fees as well as overhead portions of printing and engraving expenses. The apparently constant average variable expenses, combined with the fixed expenses, will cause the average total expenses to fall with increases in the size of the issue. Flotation cost economies to scale may, therefore, be explained by this relatively dominant presence of essentially fixed expenses embedded in the total flotation cost figure.

The existence of flotation cost economies to central ownership can be rationalized by the presence of reduced merchandising expenses as ownership concentration increases. Three principal elements of reported expenses enter into the general category of merchandising expenses, and it is through these particular expenses that the degree of ownership control should have its greatest impact upon total reported flotation costs. First, printing and engraving expenses decline as the number of buyers of the issue decline. Second, as ownership density increases, the process of physically transferring ownership title to the new stock is simplified and transfer agent fees decline. A third expense that may be characterized as a merchandising cost is the payment of fees to a subscription agent to promote the sale of the common stock; the need for and magnitude of these expenses are apparently inversely related to the degree of ownership control. Taken together, these three elements of total flotation cost should decline, for any issue size, as the degree of ownership control expands.¹⁰

The realization of flotation cost economies to ownership concentration appears

¹⁰ The exact verification of these particular stated cost relations cannot be tested because (i) the cost reporting practices of registering firms is not homogeneous, and (ii) the SEC flotation cost data only contain an aggregate total cost figure for the direct offer method. Some appreciation for the role of these cost components can, however, be obtained from the 1970 SEC [11] flotation cost study. Adjusting their items of expense, as a percent of other expenses incurred for equity offerings, for the now defunct practice of paying Federal Revenue Stamps, printing and engraving expenses make up 20% to 35% of reported costs depending upon issue size, while the category of Trustee, Transfer, Registrar, and Subscription Agent fees make up 10% to 40% of reported costs, again depending upon issue size.

A further appreciation for the importance of some of these fee components is available from the 1974 direct equity offering of \$4 million by Interstate Power. This firm incurred total expenses of \$156,400.00 (3.5%), with 82% of these expenses spent on three components: subscription agent fees (\$92,500), printing and engraving expenses (\$35,000), and transfer agent fees (\$7,500).

to distinguish the direct offering, and it is precisely this kind of flotation cost advantage that is anticipated by the comparative cost hypothesis. Before examining more thoroughly whether or not this flotation cost advantage is sufficient to account for the absolute cost differences of Table I, we shall first estimate the relationship between flotation costs and concentration and test the comparative cost and an alternative explanation for the economies to central control.

III. Comparative Cost versus Monitoring Cost

Smith's monitoring cost hypothesis asserts that managers employ the services of investment bankers so that they may realize direct benefits; we cannot directly test this hypothesis here.¹¹ But there is no reason to suppose, within the monitoring cost framework, that monitoring costs are necessarily zero for firms which use the direct offer. The fact that management does not employ investment bankers to underwrite and distribute their equity issue does not mean that they cannot benefit from the consumption of perquisites financed through increasing the direct offer flotation cost bill. Indeed, the monitoring cost hypothesis predicts that the degree of this "padding" of reported cost should increase, *ceteris paribus*, with the degree of difficulty in stockholder monitoring of managers that adopt the direct offer financing method. The monitoring cost theory yields the following two hypotheses for the costs of direct equity financing campaigns.

M1: Board Control

When central control is located in the board of the issuing firm, then the flotation costs for a given level of issue size should decline as board control expands.

M2: Parent Control

When central control is located in a parent corporation, then relative to board control firms, the flotation costs for a given level of issue size should be nondecreasing as parent control increases over majority levels of central control.

Hypothesis M1 follows from the recognition that as the level of board control expands, the proportion of padding expenses that must be directly borne by members of the board will expand, and this increase in direct costs to the board will be met by a reduction in padding expenses. In the case of full (100%) board control, monitoring is complete and inexpensive and the padding expense problem should be virtually nonexistent.

Unlike the board control case, an increase in control at the parent firm level is not associated with increased concentration of ownership by the ultimate, but once removed, stockholders of the parent controlled firm. In the case of full (100%) central control by a parent corporation, Hypothesis M2 asserts that the padding expense problem should persist, where the possibility for aberrant

¹¹ Smith's suggested monitoring cost hypothesis is, in fact, an application of the Jensen and Meckling [4] agency theory of the firm applied to the equity financing decision. For a discussion of the latter see Jensen and Meckling.

managerial behavior is now limited by the degree of difficulty in stockholder monitoring and limiting of *parent* managerial behavior. As majority control falls below this 100% level, the cost of monitoring parent managerial behavior is expected to remain essentially constant. Thus, regardless of whether the relative expansion of the padding problem is attributable to indirect but deliberate padding by parent managers, or it is due to the direct padding by managers in the controlled subsidiary, Hypothesis M2 predicts a continuation of the fee padding problem as parent control reaches beyond majority control levels.

From the earlier discussion, we also have the competing comparative flotation cost advantage hypothesis.

CC Comparative Cost

Flotation costs fall, for a given level of issue size, as central control expands regardless of the location of that central control.

To test these hypotheses, we identified the location of central control for each direct offering; 18 direct offers have central control located in the board of the issuer, while 32 offerings have central control located in a corporate parent—thirteen of these being ATT subsidiaries.¹² We then estimated the following semilog form flotation cost equation:

$$\text{Cost}_i = \alpha + \alpha_a D_a + \beta \text{LnSize}_i + [\gamma + \gamma_p D_p] \text{LnControl}_i + \varepsilon_i \quad (1)$$

where

Cost_i = the real per dollar reported cost of issue i ;

LnSize_i = the natural logarithm of real reported value (in thousands of January 1971 dollars) of registration i ;

LnControl_i = the natural logarithm of the percentage of common stock held by either a single parent or the board of directors of the issuing firm;

D_a = a dummy variable taking a value of one for ATT parent controlled offers, and zero for non-ATT parent controlled offers; and

D_p = a dummy variable taking a value of one for parent majority control firms (parent control exceeds 50%).

Hypotheses M1 and CC have identical predictions for board controlled firms—an increase in central control will result in cost reductions for a given issue size. The predictions of both hypotheses are, therefore, that $\gamma < 0$. Neither hypothesis provides any prediction for the sign of γ_p . The predictions of Hypotheses M2 and CC conflict for parent controlled firms. As majority control expands, Hypothesis

¹² From the annual 10-K and related reports we could classify firms into the parent control category, or the board control category. In four cases, however, we found no evidence of parent or board control for the issuing firm. Thus, we do not have enough observations to examine yet another extension of the monitoring cost hypothesis, which would assert that as not parent (not board) central control expands, the benefits from monitoring should eventually exhibit an increase so that padding expenses and flotation cost should also eventually fall. These four cases were excluded from our regressions.

Table III
Direct Offering Flotation Costs Ordinary Least
Squares Estimates

	Location of Control		
	Board or Non- ATT Parent (<i>N</i> = 37)	Board or Any Parent (<i>N</i> = 50)	
	(1)	(2)	(3)
Intercept	19.63 (7.55)	17.01 (7.04)	19.44 (8.68)
ATT Intercept Dummy	—	—	2.27 (2.85)
<i>Ln</i> Size	-1.02 (-4.87)	-0.63 (-4.69)	-0.99 (-5.57)
<i>Ln</i> Control	-2.09 (-3.31)	-2.16 (-3.68)	-2.10 (-3.84)
Parent Majority Control Dummy	-0.08 (-0.45)	-0.07 (-0.39)	-0.09 (-0.56)
$\bar{R}^2$	.70	.72	.76
<i>F</i>	25.23	39.47	36.20
Standard Error	1.69	1.57	1.46

Note: *t*-ratios are reported in parentheses.

M2 asserts that the flotation costs for parent controlled issues will either decline less rapidly than the flotation costs for board controlled firms, or increase as majority control expands. Hypothesis CC, on the other hand, predicts continued falling costs as control expands and this hypothesis gives no a priori basis for supposing that the source of central control has any particular impact upon the rate of decline in flotation costs. In short, the sign of γ_p is positive by M2, and zero by CC.

In Table III, we present the ordinary least squares estimates for three specifications of Equation (1): one regression for board or non-ATT parent controlled offerings; a similarly specified regression for board or any parent controlled offerings; and a second variety of the latter regression that also contains an intercept dummy to distinguish the ATT subsidiaries. From a preliminary examination of the first two regressions, it is evident that no statistical basis exists for concluding that the ATT offerings should not be pooled with the remaining issues.¹³ In the third regression, however, it is apparent that the ATT intercept dummy is significant. All three regressions confirm the anticipated economies to scale and economies to central ownership effects.

¹³ This follows from the Chow test which determines whether or not the pooling of an added set of data increases the sum of squared errors for the specified regression in a significant way. To obtain the sum of squared errors for the reported regressions, square the standard error, then multiply that product by the number of observations adjusted for the degrees of freedom.

Consider now Hypotheses M1 and CC. Hypothesis M1 asserts that increased concentration of ownership by the board will result in more intensive monitoring, hence reduced padding expenses and, therefore, decreasing flotation costs. Hypothesis CC, on the other hand, asserts that flotation costs will decline as board control expands because of reduced merchandising expenses owing to the existence of a large blockholder of stock. Thus, Hypotheses M1 and CC assert, albeit for different reasons, that flotation costs should fall as board control expands. From the regressions, it is apparent that Hypotheses M1 and CC cannot be rejected, and these results lend support to both the monitoring cost and comparative cost hypotheses.

Consider next Hypotheses M2 and CC. Once again, the comparative cost hypothesis predicts falling flotation costs as central control expands, and this effect is, *a priori*, neutral with respect to the location of the blockholder. Hypothesis M2, however, asserts that stockholder costs of monitoring management will not be significantly affected as the level of parent control expands over majority levels. Hypothesis M2 therefore predicts that γ_p must be of sufficient and opposite magnitude from γ to register the essentially neutral effect. In all three regressions, Hypothesis M2 is rejected and Hypothesis CC cannot be rejected. These results indicate that flotation costs incurred by majority controlled firms are independent of the source of that control, and this finding does not support the extended version of Smith's monitoring cost hypothesis.

IV. Implications to the Firm

Our findings thus far indicate that firms which adopt the direct offer method of equity financing enjoy a substantial flotation cost advantage due to the presence of a large block of centrally controlled common stock.¹⁴ Thus, one should not conclude from the reported flotation cost data of Table I that firms electing to underwrite their financings should adopt the direct offer since, for these reported costs, *ceteris is not paribus*. To examine this issue more thoroughly, we collected a sample of underwritten public offerings by NYSE firms, occurring over the 1971 to 1976 era, forecasted each firm's expected direct offer flotation costs with Equation (1), and then compared these estimates with the actual flotation costs incurred by each firm. Specifically, we compared the actually incurred firm underwritten flotation costs with the range of direct offering flotation costs

¹⁴ This behavior of flotation costs could be characterized in the following way. If it is assumed (i) that each small owner of common stock owns s^* in equity value – so that all but the central owner have identical equity holdings, (ii) that it costs d dollars per owner and F dollars per offering to issue the new common stock and, (iii) that the issuer seeks s dollars in new equity, then per dollar flotation costs are

$$\text{cost} = [1 + (1 - C)n^*] \frac{d}{s} + \frac{F}{s}$$

where $n^* = (s/s^*) - 1$ is the maximum number of small disbursed owners, and C is the percent control held by the central owner. Here the distribution economies to control are present, *i.e.*, it costs less to raise a given sum of equity from fewer, than from more, current stockholders.

formed by the 95% confidence interval around the predicted direct costs obtained from the estimated regression parameters of Table III.¹⁵

Table IV presents, by real issue size, the actual costs incurred by companies employing the firm offer, their average control and two sets of direct offering predicted costs for the same issue: one set of forecasted expenses using Regression (1) parameters, and a second set of forecasted costs using the parameter estimates from Regression (2). Also presented in the table by issue size and predicting equation is the average estimated standard error of forecast for each prediction, the frequency of occurrence of issuers whose actual cost was above, N_a , or below, N_b , the predicted value, and the number of issuers whose actual cost was above or below the 95% forecast interval, N_a^* and N_b^* respectively.

For example, the twenty-five firm underwritten offerings in the 5 to 9.99 million dollar range incurred an actual flotation cost of 5½¢ per equity dollar issued and they are characterized by an average level of central control equal to 4.41%. Had these firms elected to employ the direct offer method, the predictions of Regression (1) indicate that their flotation costs would have increased to an average level of 10.79¢ per dollar raised. Looking at the number of firms whose actual firm offer cost was lower (greater) than this predicted direct offer cost, $N_b(N_a)$, Table IV indicates that twenty (five) issuers would have realized an increase (decrease) in flotation costs had they adopted the direct offer method and forgone their actual choice of the firm underwritten financing method. Of the five firms which incurred actual firm underwritten costs above their predicted direct cost ($N_a = 5$), none had actual costs exceeding the upper 95% confidence limit ($N_a^* = 0$). Of the remaining twenty firms whose actual firm offer cost was below their predicted direct cost ($N_b = 20$), fifteen firms had actual cost below their respective lower 95% confidence limits ($N_b^* = 15$). Thus, of these twenty-five firms, fifteen had actual firm underwritten costs which were outside and below the 95% confidence interval of their respective predicted direct offer flotation costs, and the remaining ten firms incurred actual firm underwritten costs which were not significantly distinguishable from their predicted direct offer flotation costs at the 95% level of confidence. The remaining and corresponding entries for both Regression (1) and Regression (2) forecasts are interpreted in a similar manner.

The results presented in Table IV provide support for the comparative cost resolution of the equity financing paradox. One-half to two-thirds of all firms examined which adopted the firm offer incurred actual firm underwritten expenses which were significantly less than the expected costs for the forgone direct offer financing alternative. Only a single company from a sample of 182 firm underwritten offerings incurred flotation costs which were significantly more than those expected by the direct offer method. While we are not reluctant to conclude from these results that most firms should not employ the direct offer, we are reluctant to conclude from these results that those firms whose predicted direct offer cost is lower, should adopt the direct offer method. This is because we

¹⁵ The procedure for calculating the standard error of the forecast is well described in most econometric texts and, therefore, need not be delineated here. Also, from a methodological standpoint, it is not possible to ascertain, a priori, what the true structural form is for estimating the flotation costs. Consequently, the conclusions reached from our forecasts are subject to this ever present econometric problem.

Table IV
Forecasted Direct Offer Flotation Costs For Firms That Contracted Firm Underwritten
(Ordinary Least Squares Forecasts)

Real Issue Size (\$ millions)	Actual Cost Incurred in Firm Offer	Board or Non-AJT Parent Control Forecasts of Regression (1)			Board or Any Parent Control Forecasts of Regression (2)		
		Control %	$N^* = 92$ $N_0 = 153$	Predicted Cost (Std. Error)	$N^* = 1$ $N_0 = 29$	Predicted Cost (Std. Error)	$N^* = 1$ $N_0 = 22$
1 to 1.99 (N = 8)	9.37	3.41	$\frac{1}{5}$	11.50 (2.23)	$\frac{1}{3}$	11.69 (2.00)	$\frac{1}{2}$
2 to 4.99 (N = 9)	7.71	2.40	$\frac{3}{6}$	11.47 (2.40)	0	12.03 (2.17)	0
5 to 9.99 (N = 25)	5.48	4.41	$\frac{15}{20}$	10.79 (2.50)	0	11.68 (2.28)	0
10 to 19.99 (N = 44)	5.06	5.37	$\frac{24}{36}$	10.67 (2.63)	0	11.79 (2.39)	0
20 to 49.99 (N = 54)	4.30	4.96	$\frac{30}{45}$	10.51 (2.78)	0	11.93 (2.53)	0
50 to 99.99 (N = 33)	3.85	2.23	$\frac{15}{32}$	10.02 (2.86)	0	11.78 (2.62)	0
100 to 499.99 (N = 9)	3.96	0.52	$\frac{4}{9}$	11.37 (3.23)	0	13.40 (2.96)	0

Note: The sample of 182 firms contains firm underwritten offerings from 1971 to 1976 of firms listed on a major exchange for at least six months prior to the offer for which ownership control data were obtainable. Secondary and initial offerings are excluded and offerings containing more than one kind of security are excluded. The range of regressors is: issue size, \$1.074 to \$146.3 million; central control, .02% to 46.0%.

expect that firms adopting the direct offer not only have the large blockholder effect operating, but these firms also probably expect this blockholder to fully subscribe, perhaps oversubscribe, to his pro rata share. But when tightly held firms seek to go public, indiscriminant application of our forecasts might reveal a low expected cost because of the blockholder effect when, in fact, management knows that the blockholder does not wish to exercise his rights; hence our reluctance to conclude that any firm should have gone with a direct offer when that firm actually went with a firm underwritten offer.

V. Summary

Financial economists have been perplexed by the absence of a rational explanation for the persistent existence of a significant absolute cost advantage enjoyed by the direct offering (over the underwritten cash offering), yet the vast majority of U.S. firms purposely avoid this method of equity financing. In this paper we offer a resolution to this paradox. Application of the survivor principle to methods of equity financing permits us to conclude that each of the several forms of equity financing are efficient, and that their persistent mutual coexistence can be rationalized on the basis of a comparative flotation cost hypothesis.

The principal results of this study are fourfold. First, direct offer flotation costs are significantly elastic with respect to increased central location of the issuing firm's outstanding common stock. Second, the evidence obtained indicates that flotation costs fall because of advantages inherent in the presence of an outstanding central block of common stock by the issuing firm. Third, for board controlled firms, we cannot refute the claim that reported flotation costs decrease as board control expands because of falling benefits to management from padding, but these findings are equally consistent with the conclusion that the fall in costs is due to cost economies to central control. Finally, for parent controlled firms, the predictions of the monitoring cost hypothesis are completely rejected, and the predictions of the comparative flotation costs hypothesis cannot be rejected.¹⁶

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¹⁶ Underlying the comparative flotation cost hypothesis is the assumption that no major technical changes in the method of financing contracts have occurred and, as well, it assumes that sufficient competition exists over time to bear upon the equity financing decision. One potential source of such competition emanates from the investment banking industry, and recent literature appears to indicate that there is no basis for supposing that sufficient competition is lacking in this industry; see Tinic and Hart [8], and SEC [14]. A second way in which competition bears upon the financing decision is suggested by Fama's [3] argument that the agency cost problem is partially, if not completely mitigated in the presence of an efficient market for corporate management, a possibility not overlooked by Smith. To the extent that managerial labor markets are efficient, then the ability of inefficient corporate managers to remain impacted and immune from an ultimate ex post settling up of their wage contracts is retarded. Finally, a general competition between the various firms issuing the common stock will, over time, work to the realization of the predictions of the survivor principle, since inefficient firms cannot, in general, persist in competitive environments.

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