

repurchases are prohibited—is contradicted by the finding that the proportion of all-cash bids was greater in the United States than in the United Kingdom. But in large part cash acquisitions in the United States began only in the 1970s. Their marked growth may reflect more widespread election of stepped-up basis. Rising inflation in the 1970s increased the benefits of raising the basis for determining depreciation allowances from historic to current prices. Since the stepped-up basis was not available in the United Kingdom, an equivalent trend did not occur there.

The U.K. financing proportions reported here are most informative about the trapped equity hypotheses. Since the trapped equity model is a description of the incentives to make cash distributions through acquisitions, it is worth recalling that a high proportion of acquisitions use “all equity”—in fact, the proportion is as large as that of “all cash”. The theory cannot explain the all-equity class of acquisitions. More strikingly, the cycles of merger activity that have been widely observed, and which are an important component of the empirical relationship that King (1986) estimated between the value of acquisitions and stock market prices, do not appear to coincide with peaks in cash-financed acquisitions. According to figure 8.1 the particularly pronounced U.K. merger booms of 1968 and 1972 did not coincide with large upswings in the proportion of cash-financed acquisitions.

Still more troublesome for the trapped equity hypothesis is the poor association between the tax disincentive for dividend distributions and the level of acquisitions using cash. Recall from hypothesis 3 that the incentive for cash acquisitions is increasing in the tax wedge. Over the period under study a number of important tax changes in the United Kingdom should have affected this wedge. Most obviously, the introduction of the corporation tax in 1965 was associated with an increase in the tax price of retaining assets in the corporate sector. The incentive to distribute cash thus rose appreciably in 1965. But figure 8.1 shows that this coincided with a period during which the proportion of cash-financed acquisitions declined. Moreover, the introduction of the imputation tax in the United Kingdom in 1973 should have, in theory, lessened the tax price of retaining assets in the corporate sector. Imputation is a tax credit attributed to shareholders for the payment of corporation tax on the profits underlying a distribution. In 1973, 35 percent of the 52 percent corporation tax was imputed to investors' personal income tax. The corporate tax wedge was therefore only 17 percent, 23 percentage points lower than it was before 1973. Figure 8.1 records, however, that the introduction of imputation was associated with a period in which the proportion of cash acquisitions sharply increased, peaking in 1976.⁶

To summarize, the financing proportions provide little support for the trapped equity model but offer some tentative support for an influence from capital gains tax. The appreciable rise in cash-financed acquisitions in the United States over the period studied can be attributed, at least in part, to tax benefits from stepped-up basis.

8.7 Wealth Effects for Bidder and Target around the Announcement Date

In this section we examine bid premia associated with different means of payment. We discuss, in turn, bid premia around the announcement date in all-cash and all-equity offers; share price changes before the announcement; results for "mixed bids"; the effects of other characteristics of takeover, namely, whether the bids are revised or contested and whether they are tender offers; and finally a cross-sectional regression controlling for these bid characteristics.

8.7.1 Bid Premia in All-Cash and All-Equity Offers

Table 8.4 presents data on bid premia for all-cash and all-equity offers in both countries. Since the results are essentially the same using all three models of control returns, we report only those for the market model. Panel B shows that U.S. acquirers were more than seven times larger than targets in all-cash offers and almost nine times larger in all-equity offers. U.K. acquirers were more than twelve times larger than targets in all-cash offers and more than six times larger in all-equity offers.

Target Shareholders

Panel A in table 8.4 shows that in both countries the bid premia for target shareholders were markedly higher in all-cash offers than in all-equity offers. The month 0 results for the United Kingdom, for example, indicate targets with all-cash offers earned a 30.2 percent bid premium, which was significantly higher than the 15.1 percent premium in all-equity offers. The *t*-statistic⁷ comparing the two figures is 9.49. The differences in the United States are even more dramatic, with the month 0 premium of 11.1 percent in all-equity offers being less than half the all-cash figure of 25.4 percent. We thus find strong evidence that target shareholders receive larger wealth gains in all-cash takeovers than those involving all equity. This observation is consistent with hypothesis 1, the capital gain tax thesis that higher bid premia are required in cash offers to compensate for the capital gains tax liability; with hypothesis 4, the Myers and Majluf argument that there are negative

Table 8.4 Bid Premia and Market Capitalization in All-Cash and All-Equity Offers

	A. Bid Premia ^a			
	Month 0		Months -4 to +1	
	U.K.	U.S.	U.K.	U.S.
Acquirees				
All cash	.302 (28.07)	.254 (42.29)	.305 (11.56)	.363 (24.67)
All equity	.151 (12.88)	.111 (25.90)	.182 (6.34)	.156 (14.86)
Acquirers				
All cash	.007 (.75)	.020 (3.56)	.043 (1.98)	.026 (1.89)
All equity	-.011 (-.95)	-.009 ^b (-2.23)	.018 (.63)	.006 (.61)
	B. Market Value (in millions) ^c			
	U.K.		U.S.	
	All Cash	All Equity	All Cash	All Equity
Acquirees	£ 11.1	£10.6	\$ 144.4	\$ 134.8
Acquirer	136.1	64.3	1,019.0	1,177.0

Note: Entries are bid premia; *t*-statistics in parentheses.

Cross-sectional *t*-values for bidder wealth gains are:

	Month 0		Months -4 to +1	
	U.K.	U.S.	U.K.	U.S.
All cash	.95	2.99	3.05	2.05
All equity	-1.27	-2.14	.97	.67

where the *t*-value is calculated as BP/SE and where $SE = SD/\sqrt{N}$ and SD is the cross-sectional standard deviation.

^aBid premia are calculated using the market model. In the United Kingdom month 0 is the earliest available of the first approach, first bid, unconditional, or LSPD date. In the United States month 0 is the announcement date as defined in the text.

^bFor U.S. acquirers with all-equity offers, where the bid premia are -0.009 for month 0, only 45.7 percent of the 443 acquisitions were positive. The results using a model with $\alpha = 0$ and $\beta = 1$ were virtually identical.

^cThe market value of equity prior to takeover.

signals associated with equity offers; and with the Fishman argument that cash offers coincide with high-value acquisitions.

A comparison of the results for the two countries over the six-month period suggests all-cash bids coincided with slightly higher bid premia in the United States than in the United Kingdom (.363 versus .305), and the differences were statistically significant at better than the .10 level ($t = 1.92$). Comparing the month 0 and month -4 to $+1$ results, we find a greater proportion of the U.S. bid premia in all-cash offers appear to have come prior to month 0. Turning to the all-equity bids, we find the U.K. bid premia were somewhat higher than the U.S. premia (.182 versus .156), though not statistically so when measured over the six-month period ($t = 0.85$).

Bidder Shareholders

Shareholders in the U.K. acquirers earned negligible returns in the bid month for both all-cash and all-equity offers. Over the six-month period, however, small (statistically significant) gains accrued for the all-cash offers. Whether this gain was a result of the bid or of the bidder's timing the offer to correspond to favorable developments in its stock price is uncertain. There is no evidence, however, of significant losses to bidders in U.K. takeovers around the merger announcement date. The results for all-equity offers are similar to those found by Marsh (1979) for the month following the rights issue announcement (results showing small abnormal losses at the time of the announcement).

The difference between the performance of all-cash and all-equity acquisitions in the United States is striking. In all-cash offers the bidders earned significantly positive gains of 2 percent in month 0. In contrast, in all-equity offers they experienced a significant loss of 0.9 percent. These wealth effects were also significantly different from each another ($t = 4.19$).⁸

Taken together, our U.S. results suggest that equity in acquisitions conveys bad news, while cash conveys good news. This role for the medium of exchange is consistent with theoretical predictions (see, for example, Miller and Rock 1985) and with empirical evidence on new equity issue announcements. Smith (1986), surveying an extensive literature on new equity issues, reported a weighted average loss of 1.6 percent. Our results also strongly support Myers and Majluf's predictions described in hypothesis 4.

Our U.K. results indicate the returns to all-equity bidders in the bid month were negative but not statistically different from zero. It is interesting to consider the institutional differences between the two countries. U.K. underwriters play a much more important role in equity issues than do their U.S. counterparts. For example, virtually all new U.K. equity issues have taken the form of rights issues, and virtually all have been underwritten (see Marsh 1979). According to Heinkel and

Schwartz (1985), the underwriter may be able to avoid some of the information problems that would otherwise be associated with equity issues.

Table 8.5 compares U.K. bid premia around the announcement date of acquisitions for the periods 1955–64 and 1965–85. The significance of 1965 is that it was in that year that the government instituted a full capital gains tax. According to hypothesis 1, bid premia in all-cash acquisitions should have differed from those in all-equity acquisitions only in the years after the tax was introduced. The table indicates that although the difference was larger in the later period, bid premia were significantly higher in all-cash offers than in all-equity offers ($t = 2.26$ in the announcement month) in the earlier period as well. Between 1962 and 1965 there was a short-term capital gains tax on holdings of less than one year. The difference between cash and equity bid premia persists prior to 1962, though the sample is too small to provide meaningful tests of significance. The hypothesis that capital gains taxes can entirely explain differences in the premia of the two kind of offers is therefore rejected.

8.7.2 A Comparison of the Premerger Performance of Bidders Using All Cash and Those Using All Equity

Anecdotal evidence from investment bankers in both the United Kingdom and the United States strongly suggests that they believe the choice of equity or cash is influenced by perceptions of overvaluation of the bidder's shares. We can look to the premerger share price performance of bidders for evidence that the premerger valuation of the acquirer may influence the choice of financing. If overvalued acquirers

Table 8.5 A Comparison of U.K. Bid Premia Before and After 1965

	Month 0		Month -4 to +1	
	1955-64	1965-85	1955-64	1965-85
Acquirees				
All Cash	.185 (6.28)	.327 (29.26)	.260 (3.60)	.317 (11.60)
All Equity	.108 (6.39)	.166 (11.17)	.194 (4.67)	.177 (4.86)
Acquirers				
All Cash	.032 (1.80)	.001 (0.09)	.072 (1.66)	.037 (1.59)
All Equity	.005 (0.30)	-.017 (1.22)	.058 (1.32)	.002 (0.07)

Note: Entries are bid premia; t -statistics in parentheses. Bid premia are calculated using the market model. Month 0 is the earliest available of the first approach, first bid, unconditional, or LSPD date.

choose equity, their premerger performance might be expected to be superior to that of acquirers offering cash.

The table below reports abnormal returns to acquirers for the period beginning six months before the bid and ending one month before the bid. The table shows U.S. bidders offering equity had slightly better performance over the prebid period than did those offering cash. The prebid performance of the two types of bidders was the reverse in the United Kingdom. Only very limited support is thereby provided for the hypothesis that overvaluation can be established from premerger data.

	Bid Premia	N
<i>U.K. Bidders</i>		
All cash	.050 (<i>t</i> = 2.31)	198
All equity	.034 (<i>t</i> = 1.28)	150
<i>U.S. Bidders</i>		
All cash	-.006 (<i>t</i> = -.45)	201
All equity	.024 (<i>t</i> = 2.50)	442

8.7.3 Other Types of Offers

In preceding sections the focus was on all-cash and all-equity bids since they are the primary types of bids made in both countries (see table 8.1). Table 8.6 presents additional estimates of the wealth effects of other types of bids.

"Cash or Equity" Offers

Combination offers provide the seller with the opportunity to accept either cash or stock. This option should reduce any detrimental personal tax effects associated with an all-cash offer. As shown in table 8.1, these offers have been made frequently in the United Kingdom but less often in the United States. In the United Kingdom target bid premia in combination offers were quite similar to those found in all-cash offers (table 8.4). For example, the 28.4 percent target bid premium (-4 to +1) in cash-or-equity offers shown in table 8.6 is very close to the 30.5 percent premium shown in table 8.4 for all-cash bids. The small sample size for the U.S. results ($N = 20$) prevents us from making any definitive statements, although target bid premia appear to be between those for all-cash and all-equity offers (Table 8.4). In neither country did these cash-or-equity offers coincide with significant bidder share price performance.

Table 8.6 The Wealth Effects of Other Types of Offers

Type of Offer	Acquirees		Acquirers	
	0	-4 to +1	0	-4 to +1
1. Cash or equity				
U.K. (N = 95)	.276 (14.79)	.284 (6.21)	.007 (.49)	.075 (2.26)
U.S. (N = 20)	.180 (8.41)	.266 (5.07)	-.002 (-.09)	-0.010 (-.18)
2. Cash and equity				
U.K. (N = 100)	.238 (18.70)	.271 (8.71)	.003 (.23)	.054 (1.63)
U.S. (N = 15)	.099 (3.24)	.212 (2.83)	.057 (1.88)	.015 (.20)
3. Convertibles only				
U.S. only (N = 184)	.117 (21.34)	.176 (13.11)	.018 (2.80)	.031 (1.97)
4. Convertibles and equity				
U.S. only (N = 115)	.101 (12.50)	.143 (7.23)	-.004 (-.42)	.009 (.39)

Note: Entries are bid premia; *t*-statistics in parentheses. Bid premia are calculated using the market model. The months are defined as in table 8.4.

These results are further evidence that personal tax considerations do not satisfactorily explain the higher target bid premia in cash offers since the equity-or-cash option, though tax efficient, led to bid premia comparable to those in all-cash offers. Thus, the evidence contradicts hypothesis 1.

"Cash and Equity" Offers

"Cash and equity" bids provide the seller with a combination of cash and equity and have been used frequently in the United Kingdom. They appear to offer targets smaller bid premia than do cash-or-equity or all-cash bids, but higher premia than all-equity bids. Furthermore, there are no significant wealth effects to bidders in acquisitions involving cash and equity. The pattern in these bids thus appears to be an average of the results for the all-cash and all-equity offers discussed earlier.

Convertibles

Convertibles were extensively used in the United States in the 1960s (see table 8.2). As shown in table 8.5, target premia for bids involving convertibles (either alone or along with equity) coincided very closely with target premia for all-equity bids. For example, in the United States the month 0 target bid premium was 11.1 percent in all-equity bids

(table 8.4), 11.7 percent in all-convertible bids, and 10.1 percent in bids involving both convertibles and equity. A major difference, however, has to do with the bidders. Whereas, as noted earlier, all-equity bids in the United States are associated with a negative wealth effect for acquirers in month 0, all-convertible bids were associated with a significant positive gain (1.8 percent) for acquirers in month 0.

8.7.4 Bid Premia: Further Analysis

Variations over Time

The differences in bid premia between all-cash and all-equity offers shown in table 8.4 may be attributable to variations over calendar years in the performance of acquisitions. This issue is less important in the U.K. data because all-cash and all-equity offers took place over the entire 30-year period in that country.

Table 8.7 Wealth Effects in U.S. Acquisitions, Partitioned by Time and by Tender Versus Nontender

		A. Time					
Time Period	Offer	Target			Bidder		
		N	BP Month 0	(t-stat)	N	BP Month 0	(t-stat)
1970-74	All cash	34	.252	(12.35)	21	.066	(3.41)
	All equity	107	.127	(10.88)	80	.006	(.57)
1975-79	All cash	185	.304	(27.84)	85	.012	(1.31)
	All equity	92	.169	(12.45)	75	-.014	(-1.46)
1980-84	All cash	249	.220	(32.39)	90	.018	(1.73)
	All equity	97	.145	(13.79)	64	-.039	(-3.99)

		B. Tender vs. Nontender					
Offer	N	Target			Bidder		
		Month			Month		
		0	-4 to +1		0	-4 to +1	
Tenders all cash	135	.283 (35.20)	.411 (20.87)		78	.014 (1.84)	.025 (1.34)
Tenders all equity	29	.201 (12.50)	.243 (6.17)		23	-.019 (-1.13)	-.060 (-1.46)
Nontender all cash	340	.243 (31.66)	.343 (18.24)		123	.024 (3.00)	.026 (1.33)
Nontender all equity	548	.106 (22.75)	.151 (13.23)		419	-.008 (-2.02)	.009 (.93)

Note: Bid premia (BP) are calculated using the market model. Month 0 is the announcement date as defined in the text.

In panel A of table 8.7 we break our U.S. data into three five-year periods beginning with 1970, the onset of significant use of all-cash offers. As the figures show, the month 0 bid premium estimates for the targets was higher in all-cash offers than in all-equity offers in each of the five-year periods. The same patterns hold for the six-month bid premia (not shown here). In addition, in all-equity offers the wealth effects for bidders were consistently lower than in all-cash offers, and they were negative in both the 1975-79 and the 1980-84 period, though significantly so only in the latter. Panel A shows that differences between the wealth effects of all-equity and all-cash bids in the United States cannot be attributed to a particular time period.

Tender and Nontender Offers

Earlier research on acquisitions in the United States has indicated that shareholder wealth effects may be different in tender offers and mergers. For example, surveying a number of studies, Jensen and Ruback (1983) reported acquiree bid premiums of 30 percent in tenders but only 20 percent in mergers; for acquirers the figures are 4 percent and zero percent, respectively. Panel B of table 8.7 shows the data we used to investigate whether the disparity between wealth effects in all-cash and all-equity can be attributed to a greater use of cash in tenders. The data indicate that all-cash bids resulted in higher acquiree bid premia, whether the takeover was a tender or not. Furthermore, panel B suggests that after having controlled for the medium of exchange, a difference in bid premia remains between mergers and tenders. For example, the 28.3 percent premia in all-cash tenders (in month 0) is significantly higher than the 24.3 percent figure in all-cash offers that are not tenders ($t = 3.60$). Panel B also shows that a high proportion of tenders used cash as the form of financing.

Turning to the results for acquirers in Panel B, we find the announcement month wealth effect to acquirers making all-equity bids was negative in both tenders and nontenders, although the sample size is small for all-equity tenders. In contrast, the announcement month wealth effects were positive in all-cash offers whether the bid was a tender or not. Panel B therefore suggests that the medium of exchange and the response of acquirers' share prices are related.⁹

Revised and Unrevised Bids

In table 8.8 we use the U.S. data to test whether the differences in all-cash and all-equity bid premiums (partitioned by tender and merger) are due to the contested nature of the bids. We have evidence from Franks and Harris (1986a) that bid revisions, even when unaccompanied by contestants, show similar wealth effects to contested bids. As a result we partition offers into those that are unrevised and uncontested and those that are revised or contested.

Panel A shows, for unrevised bids, the target bid premia in all-cash tenders were slightly higher than those in all-cash mergers (with six-month bid premia of .384 and .345, respectively). The target bid premia were significantly higher in all-equity tenders (.258) than in all-equity mergers (.154). For bids that were revised or contested a similar pattern emerges, although the difference between tenders and mergers is larger. We can conclude that all-cash bids still provide much larger premia

Table 8.8 Bid Premia for Multiple Bids (Revised or Contested) versus Single Bids (Unrevised and Uncontested), Partitioned by Tender and Merger, U.S. Data

	Month 0		Months -4 to +1	
	Unrevised and Uncontested	Revised or Contested	Unrevised and Uncontested	Revised or Contested
A. Targets				
Mergers				
All cash	.247 (29.80) N = 297	.240 (19.77) N = 85	.345 (21.62) N = 297	.328 (11.95) N = 85
All equity	.106 (19.49) N = 505	.116 (10.62) N = 89	.154 (11.93) N = 505	.136 (4.02) N = 89
Tenders				
All cash	.267 (31.43) N = 103	.265 (23.88) N = 74	.384 (13.97) N = 103	.466 (14.52) N = 74
All equity	.242 (11.22) N = 18	.192 (9.52) N = 14	.258 (3.85) N = 18	.293 (.71) N = 14
B. Bidders				
Mergers				
All cash	.026 (3.13) N = 111	.016 (.93) N = 32	.029 (1.57) N = 111	.023 (.61) N = 32
All equity	-.005 (-1.12) N = 389	-.023 (-2.07) N = 68	.012 (1.20) N = 389	-.024 (.95) N = 68
Tenders				
All cash	.016 (1.96) N = 67	.011 (.97) N = 38	.026 (1.48) N = 67	.045 (1.73) N = 38
All equity	-.031 (-1.19) N = 14	-.021 (-1.04) N = 12	-.076 (-1.26) N = 14	-.092 (-1.18) N = 12

Note: Entries are bid premia; *t*-statistics in parentheses. Bid premia are calculated using the market model. Month 0 is the announcement date as defined in the text.

than all-equity bids even after controlling for the form and contested nature of the merger and that tenders still provide larger bid premia than mergers.

Table 8.8 also shows that a larger proportion of all-cash than all-equity bids are revised. If we look at the medium of exchange in the final bid, 28.4 percent of the all-cash bids were contested or revised, whereas only 16.5 percent of the all-equity bids were. From Fishman's model we might have expected the converse: His model predicts that contested bids will occur more frequently in low-value equity bids than in high-value cash bids. In the latter case, the bidder has placed a high value on the target and uses a cash offer to preempt competing bids. In fact, competition appears to be more closely associated with cash than with equity offers. It should be noted, however, that a final cash bid may have evolved from an initial equity bid, although Callison's (1987) data show that of 54 all-cash tenders, only one was preceded by an equity offer.

Panel B of table 8.8 shows the wealth gains for bidders. Gains to bidders appear small, and if anything they were larger in all-cash takeovers than in all-equity bids.

8.7.5 Cross-Sectional Analysis

To investigate further the patterns in acquiree bid premia, we estimate the following cross-sectional regression:

$$BP = a_0 + a_1D_1 + a_2D_2 + a_3D_3 + a_4D_4 + \epsilon,$$

where BP is the estimated bid premium

$D_1 = 1$ if all-cash offer, 0 otherwise

$D_2 = 1$ if tender offer, 0 otherwise

$D_3 = 1$ if contested bid, 0 otherwise

$D_4 = 1$ if revised bid, 0 otherwise

$\epsilon =$ a random error term with zero mean.

Only all-cash and all-equity offers in the United States are included in the regression. Furthermore, since the regression results are qualitatively similar for all three models of forming control returns, we report results for the market model only and bid premiums only for the six-month period around the announcement date. The results are (t -values in parentheses):

$$BP = .163 + .148D_1 + .081D_2 + .038D_3 + .025D_4$$

(14.94) (6.43) (3.15) (1.66) (.98)

$$R^2 = .08, F = 20.8$$

Although the regression has a low R^2 , in part due to the measurement error for individual company bid premia, the F value of 20.8 is statistically significant at better than the .001 level. The results show that acquiree bid premia were larger in contested or revised bids and were significantly larger in tender offers (coefficient of .081). Even having controlled for these effects, however, the all-cash offers appear to coincide with larger acquiree bid premia. The coefficient of .148 (14.8 percent) is significantly different from zero at better than the .001 level. In fact, the medium of exchange has a larger impact than any of the other three effects. The regression results thus suggest that in the United States the medium of exchange is significantly related to bid premia and that this result is not an artifact of other commonly studied characteristics of the data.

We found qualitatively similar regression results for the U.K. data after controlling for schemes of arrangement, contested or revised bids, and time period (a series of dummy variables). The coefficient on D_1 was .104 with a t -statistic of 2.74.

8.8 Postmerger Performance

In their review of studies on U.S. acquisitions, Jensen and Ruback (1983) suggested several possible reasons for the common finding of negative returns following merger. They concluded (p.22) that "explanation of the post-event negative abnormal returns is currently an unsettled issue." Table 8.9 reports estimates of postmerger performance in all-cash and all-equity bids. The results are calculated as the average cumulative return— BP from equation (8)—over the two-year period covering months +1 to +24. For the purposes of measuring postmerger performance in the United Kingdom, month 0 is the date when the merger was unconditionally accepted; and for the United States, it is the date of the final bid. Four methods of forming control returns are used to test the robustness of the results.

8.8.1 Results for the United States

Panel A of table 8.9 shows that in the United States there is a marked difference between the postmerger performance of all-cash and all-equity bids. Acquirers using all cash did better after merger than did all-equity bidders, no matter what control return is used. The control returns (benchmarks) do, however, give rise to quite different figures for whether postmerger performance is positive, zero, or negative. These results highlight the importance of forming an efficient benchmark (see Grinblatt and Titman 1986).

Table 8.9 Postmerger Performance in All Cash and All Equity Acquisitions

		A. United States			
		Premerger α, β Market Model ^a	$\alpha = 0$ $\beta = 1.0$	CAPM ^b	Postmerger α, β Market Model ^c
All cash		.028 (.70, 55)	-.036 (-1.03, 52)	-.034 (-.95, 51)	.094 (1.59, 53)
All equity		-.184 (-7.73, 36)	-.179 (-9.31, 34)	-.178 (-8.97, 34)	-.018 (-.69, 46)
		α	β	N	
All cash					
	Premerger	-.003	.99	201	
	Postmerger	-.007	1.04	127	
All equity					
	Premerger	.000	.99	442	
	Postmerger	-.006	.99	392	

		B. United Kingdom	
		Premerger α, β Market Model ^a	CAPM ^b
All cash: N = 221		.017 (.50, 53)	.175 (6.09, 65)
$\alpha = .008, \beta = 1.07$			
All equity: N = 207		-0.094 (-2.31, 51)	.042 (1.23, 64)
$\alpha = .011, \beta = 1.07$			

Note: Entries are bid premia for months +1 to +24. For the U.K., results month 0 is the unconditional date of the merger. For the U.S., results month 0 is the date of the final bid. The figures in parentheses are *t*-statistics and percent positive. For this table, the *t*-statistic is calculated as BP/SE , where SE is the standard error of the mean.

^aA market value-weighted average of α and β values for the acquiree and acquirer were also used as parameters in the market model to determine control returns. They showed very similar results as the unweighted parameters.

^bWhen β was estimated as the market value-weighted average of betas for the acquiree and acquirer, the results were similar. CAPM is the capital asset pricing model.

^cThe α and β values here are calculated over period $t = +25$ months to +60 months (with a minimum of 24 months of data).

Using either a market model with "premerger" estimated parameters (calculated from six years to one year prior to the bid) or a simple $\alpha = 0, \beta = 1.0$ model, we find postmerger abnormal returns were essentially zero in all-cash offers but significantly negative in all-equity offers. It can be argued, however, that these results reflect the use of an inappropriate benchmark, since there may be shifts in a firm's expected returns and risks associated with acquisitions.¹⁰ We therefore estimated α and β values in the market model from a postmerger period

producing essentially zero postmerger returns for all-equity offers and positive (though not statistically significant) postmerger returns in all-cash offers. These changes stem from the noticeable reductions in the estimated α values when going from the premerger (six through one years before the bid) to the postmerger (three through five years after the bid) period. The average postmerger α values are negative for both all-cash and all-equity offers.

In summary, acquirers that made all-cash bids on average did not suffer postmerger losses and did better than the bidders that made all-equity offers. Whether all-equity bidders have postmerger losses depends on the benchmark employed. Compared with premerger performance, postmerger returns are negative. But using a benchmark based on postmerger parameters, we find all-equity acquirers did not experience abnormal losses in the two years after an acquisition, but they did have negative α values three to five years after the acquisition.

Given the heavy use of equity in the 1960s, a possible explanation for these different results for cash and equity offers is that they are due to the date of the takeover rather than the medium of exchange.¹¹ Nonetheless, we found qualitatively similar results (using premerger parameters) when we divided the post-1970 subsample into five-year subperiods (post 1970). The results suggest that the medium of exchange plays an important role in the postmerger performance of acquiring firms in the United States. We can speculate that this role may be related to information asymmetries that may motivate equity rather than cash bids in situations in which the acquirer's equity is overvalued by the market.

8.8.2 Results for the United Kingdom

Panel B of table 8.9 shows that postmerger performance results in the United Kingdom are highly dependent on the formation of control returns. As in the United States, all-equity offers had significantly worse postmerger performance than did all-cash offers. The difference appears to be in the 11 percent to 15 percent range. For example, using the market model, we find postmerger performance in all-equity offers was -9.4 percent, which is 11.1 percentage points lower than the 1.7 percent return in all-cash offers.

The issue that remains unresolved is whether postmerger performance in all-equity takeovers was less than zero. The significant negative figures resulting from use of the market model were essentially the result of the very high premerger α values for the acquirers in all-equity deals ($\alpha = 0.011$ per month, or over 12 percent per year). If one applies the capital asset pricing model, the all-equity takeovers appear to have had small positive bidder returns after merger, and in all-cash offers the bidders had large positive returns of 17.5 percent.

As was the case in the United States, further exploration of these results will be necessary.¹²

8.9 Conclusion

In this paper we have examined the means of payment used in a large set of acquisitions in the United Kingdom and the United States over the years 1955–85. Using data on financing proportions, bid premia, and postmerger performance we tested the validity of several tax and information hypotheses in the literature. Our findings show that it is difficult to explain many of the results in terms of tax effects. The capital gains tax did not appear to be a primary determinant of financing patterns in the United Kingdom during a period in which there were substantial variations in the tax rate. Our data also show that the “trapped equity” model is inconsistent with financing patterns. We could not reject stepped-up basis as an explanation for the substantial increase in cash-financing proportions in the United States, but our data were insufficient to provide a convincing test.

The second set of empirical results we presented concerned wealth gains around the announcement of mergers. In both countries we observed that the bid premia associated with cash bids were much larger than those associated with equity bids. This finding is consistent with Fishman’s model that high-valuing bidders make cash offers, and low-valuing bidders make securities offers. After controlling for the form of finance, we found that much of the difference in bid premia between tenders and mergers disappeared. We also examined whether the effects of revised or contested bids could explain the higher bid premia accruing to targets in cash offers than to those in equity offers. After controlling for the form of takeover (tender versus merger) and the contested nature of the bid, we found that cash offers still provided substantially higher wealth gains to shareholders. Moreover, U.S. bidders that offered all equity suffered significant abnormal losses at the time of the bid announcement, consistent with the findings on the wealth effects of seasoned new equity offerings in the United States. Finally, acquirers that made cash offers had better postmerger performance than did those that made all-equity offers. These results support an overvaluation hypothesis, but they are inconsistent with theories of efficient capital markets.

Our findings suggest at least two directions for future work. First, because our results on postmerger performance were sensitive to the benchmark used, further investigation of this topic is warranted (see Loderer and Mauer, 1986). Second, after focusing on the means of payment in takeovers, we believe further insights into the relationships between financing decisions and acquisition performance could be gained by incorporating detailed information on the capital structures of the merging firms.

Notes

1. King's model contains no feature that distinguishes between acquisitions and new investment.

2. It is crucial to Myers and Majluf's argument that all projects have a zero or positive net present value (see *idem.*, 203-4) If projects could have a negative net present value, giving up a new project and not issuing equity may not be good news.

3. Jensen's (1986) theory of free cash flow could also be used to yield the same prediction, since increasing the debt ratio of the bidder (via a cash offer) enables managers to bond their promise to pay future cash flows. See also Grossman and Hart (1982).

4. For the earliest calendar years of our U.K. analysis, prior data were unavailable to calculate α and β . In these cases companies were assigned $\alpha = 0$, $\beta = 1.0$. Our adjustment for thin trading regresses company returns on the market return and one-month leads and lags on the market. The three coefficients in the multiple regression were summed to obtain β .

5. Data from W. T. Grimm show the same upward trend in the use of cash in U.S. acquisitions (and the same decline in the use of stock) beginning around 1970, although the data also reveal that cash was used in the 1960s (the series begins in 1964). Differences in samples probably account for variations in financing proportions. Grimm's data include acquisitions and divestitures of both public and private companies, whereas our data are limited to acquisitions of exchange-listed companies. The latter are, on average, larger concerns.

6. An examination of Department of Trade and Industry (DTI) data on the financing of acquisitions reveals similar changes in financing proportions around the time of the major tax changes discussed here. These data differ from ours primarily in the population from which their samples are drawn. Our data refer to acquisitions by companies that were quoted on the London Stock Exchange. The DTI data are obtained from reports in the British financial press about mergers and acquisitions. We would argue that there is some merit in using data on quoted companies in a study of the financing of acquisitions, on the grounds that the impediments to the choice of financing are less for quoted than unquoted companies. A comparison of the two samples is outlined below.

Years	Proportion (value-weighted) financed by cash:	
	Our sample	DTI sample
1970-74	0.28	0.32
1975-79	0.38	0.59
1980-84	0.47	0.54†

†Up to the third quarter of 1983 only.

7. Significance tests for the difference between two cell means ($M_1 - M_2$) are based on a t -statistic calculated as $t = (M_1 - M_2)/SD$, where $SD = \sqrt{\sigma_1^2 + \sigma_2^2}$ and σ is the standard deviation used to calculate the bid premia (BP) for the cell mean; in other words, $\sigma_1 = \sigma_{BP}$ for cell 1.

8. As confirming statistical tests, we examined the percentage of companies with positive returns and an alternate method of calculating a t -statistic. For the 200 acquirers making all-cash bids, 59 percent had positive abnormal returns

in month 0, whereas only 46 percent of the 442 acquirers in all-equity bids had positive abnormal returns in that month. We also calculated a t -statistic defined as the mean abnormal return divided by the standard error of the mean. For month 0 this produced $t = 2.99$ in all-cash bids and $t = -2.14$ in all-equity bids.

9. In our U.K. sample over 90 percent of the acquisitions took a form similar to that for the U.S. tenders (see Franks and Harris 1986a), the remaining 10 percent having been schemes of arrangement that required a shareholders' meeting convened under a court's direction. In schemes of arrangement the merger can be consummated if more than 75 percent of the votes cast by those present and voting are in favor of the proposal. Because of the relatively small number of schemes of arrangement, any differences in results for this type of merger are not likely to have a large effect on our U.K. results. Nonetheless, we partitioned our U.K. data into schemes of arrangement that were all-cash bids and those that were all-equity bids. The target bid premia were significantly lower in all-equity bids than in all-cash bids.

10. For example, the merger is combining two firms and hence may change the business mix of the acquirer (but see notes c and d of table 8.9). In addition, a cash offer may be accompanied by an increase in financial leverage, thus increasing risk. Providing some support for this is the fact that in all-cash offers the postmerger β (1.04) exceeded the premerger β (.99).

11. We also examined use of a value-weighted market index in measuring postmerger performance in the United States. Using an $\alpha = 0$, $\beta = 1.0$ model with a value-weighted index, we found all-cash acquirers had positive (.06) abnormal returns over the 24-month period ($t = 1.71$), whereas all-equity acquirers still displayed significant negative postmerger performance (of .111, $t = -5.54$). To further examine the role that firm size may play in postmerger performance in the United States, we subdivided the sample into quintiles and measured the postmerger performance of each portion. The smallest acquirers appeared to outperform the largest acquirers when we used both a market model (with postmerger α and β values) and an $\alpha = 0$ and $\beta = 1$ model. The results were:

Ranking by Market Capitalization	$\alpha = 0$	Postmerger Market Model	
	$\beta = 1$		
	$N = 195$		
1 Smallest	-.078	.009	$N = 153$
2	-.102	.030	$N = 164$
3	-.135	.063	$N = 169$
4	-.194	-.104	$N = 165$
5 Largest	-.174	-.098	$N = 145$

12. One possible explanation for our postmerger performance results may be related to size effects not captured in our formation of control returns (see Dimson and Marsh 1986). We have some evidence suggesting, however, that such size effects cannot fully explain our results. First, as shown in table 8.4, in the United States the average size of all-equity and all-cash acquirers was quite similar both before and after merger. In the United Kingdom all-cash acquirers were larger than all-equity acquirers. As a result, we cannot explain the poorer postmerger performance of the all-equity acquirers on the basis of

their being larger than the all-cash acquirers. Second, our use of postmerger parameters (α and β) should capture, at least in part, changes in a firm's return-generating process due to an increase in size as of the merger date. (See note 11, above.)

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Comment Artur Raviv

Franks, Harris, and Mayer document several very interesting empirical regularities in the means of payment offered in takeovers. The most striking results are:

1. The percentage of all-cash offers in the United States increased over time, from none in 1955–59 to 58 percent in 1980–84. At the same time, all-equity offers declined from 76 percent to 22 percent.
2. The United Kingdom demonstrated the reverse pattern of changes over those years.
3. About one-sixth of the acquisitions in the sample were through a tender offer. Nontender, or “friendly,” acquisitions are those obtained by an approving board of directors. The appreciation to the targets of tender offers was higher than to those in nontender acquisitions.

This paper can be best viewed as a fact-finding mission. Although the authors survey several propositions that might explain the empirical regularities, no simple theory can account for all the facts simultaneously. I would find it much easier to evaluate the results if a coherent model had been constructed and then tested by the empirical results. Obviously, this would not be an easy task since the problem attacked by the authors is at the core of the unsolved problems in corporate finance: capital structure, taxation, and corporate control.

In the remainder of my comments I would like to propose an alternative model, which in my view is capable of explaining many of the results given by the authors. This model has been developed by Michael Fishman in a working paper entitled “Preemptive Bidding and the Role of the Medium of Exchange in Acquisitions.” Here the key economic difference between a cash offer and an offer of securities is that the value of a cash offer is independent of the future profitability of the acquired target, while the value of a securities offer is not. The willingness to offer or accept a given package of securities may indicate something about the information held by the bidder and the target. In particular, if target managers possess private information regarding the profitability of their firm, they will want to use this information in making their decisions whether to accept a securities offer since the value of this offer depends on the future profitability of the target. Thus, securities offers are a means of making an offer contingent on the target’s information. In Fishman’s model a bidder learns about the profitability of the target, and if his valuation is high, makes a high, *preemptive* bid in order to eliminate potential competition. This bid is in the form of cash. If the bidder’s

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valuation is lower, he will make a securities offer, which will induce an efficient accept/reject decision on the part of the target but may also induce competitors to join the bidding for the target.

The results that can be obtained from such a model are:

1. Cash offers are more frequent in tender offers than in nontender offers. In tender offers target managers do not use their information and therefore there is no need for equity payment. Equity is used in the case of nontender offers.
2. Cash offers are higher on average than equity offers. Equity signals lower value and induces competition.
3. The postmerger performance of the bidder, if the initial offer is for cash, is better than if the initial offer is for equity.
4. The postmerger performance for tender offers (which tend to be for cash) is better than that for nontender offers (which tend to be for equity).

These results are consistent with the Franks, Harris, and Mayer evidence. Additional results implied by Fishman's model and which could be tested by the authors are:

1. Competing bidders appear more frequently in equity offers than in cash offers.
2. Target management will more frequently reject an equity offer than a cash offer.
3. Rejecting an equity offer will result in a reduction in the value of the target's shares, since it indicates that the target's managers believe the target is not as valuable now as it was.

It would be interesting to find out whether these results can be supported by the data the authors have analyzed.

Comment Richard S. Ruback

Empirical evidence shows that the benefits of takeovers to the target's shareholders are large in mergers and even larger in tender offers. Although mergers and tender offers are substitutes, there are some general differences in the two types of takeover methods:

	<i>Tender Offers</i>	<i>Mergers</i>
Process	Through shares	Through management
Perception	Hostile	Negotiated
Payment	Cash	Stock

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In Jensen and Ruback (1983) we focused on the process difference to explain the larger measured average returns in tender offers than in mergers. Truncation bias could explain the higher *measured* average premiums in tender offers. Low-value merger bids that are rejected by managers do not become hostile tenders because it is more costly to persuade shareholders in hostile deals than in negotiated deals and because hostile deals are more expensive.

Franks, Harris, and Mayer emphasize the payment differences. In particular, they try to use theories of capital structure choice and theories of takeovers simultaneously.

The good part of this approach is that different takeovers do seem to involve different financing schemes, so that the measured effects of takeovers may include factors that are caused purely by the financial restructurings involved.

The bad part of this approach is that it layers ignorance on confusion. As a corporate finance person who works in both areas, I am afraid this is not a pleasant admission. Unfortunately, we have no accepted theory of the choice of takeover method. In contrast, we have many theories about capital structure choice. But none has survived even simple tests. And the interrelations among the many theories are obscure at best. Saying that the state of the art in capital structure choice is confused would be generous.

It is hard to fault the authors of this paper for the confusion of the theory. My complaint is *not* that the authors fail to develop a new theory of capital structure and merger choice. I am mentioning the lack of theory at the outset because it locates and defines what we learn from the authors. Their paper does not really test any particular theory. Instead, it makes perhaps a bigger contribution by providing numerous interesting facts.

The magnitude of the data collection and integration in this paper is huge and competently done. The sample contains merger and tender offer data for both the United States and the United Kingdom over the years 1955–85, including about 2,000 observations.

The facts that I find most interesting are in table 8.7. There, in panel B, the event month abnormal returns are:

Cash tenders	28%	N = 135
Cash nontenders	24%	N = 340
Equity tenders	20%	N = 29
Equity mergers	11%	N = 548

This ranking suggests that both the type of offer and the medium of exchange are important. The regression tests provide an affirmative statistical test of this proposition.

I cannot resist the temptation to explain the rankings. My hypothesis hinges on asymmetric information. Accept the Jensen and Ruback view

that the market for corporate control involves competition between management teams for the rights to manage corporate resources. You would then expect most takeovers to be proxy fights.¹ But this is not true. Why? Because these contests require very "management smart" investors—investors that can evaluate the plans of competing management teams. Stockholders are unlikely to have the expertise or incentives to evaluate the plans accurately. Indeed, clever stockholders are efficient risk bearers: They hold a well-diversified portfolio and cannot remember the names of the firms in the portfolio, never mind how they should be managed.

What's a poor potential competing manager to do? Get somebody smarter to make the decision or simplify the decision. If target managers are cooperative, then a merger is more likely. And the range of payment types possible expands because the target managers certify to the shareholders that the takeover is a good deal.

But suppose the target management decides to oppose the merger. Also assume the deal is worthwhile to the bidder even if it becomes hostile. Then the offer has to be simplified. Bidders should use securities that are easy to value—like cash.

In short, the same forces that make some takeovers mergers instead of tender offers also make most tender offers cash transactions and most mergers stock transactions. This means that, as with any set of correlated variables, the attribution of results to particular variables is very risky.

The facts that confuse me the most are in table 8.8. It shows that there were significant negative abnormal returns in the two years following the offer. The returns were about -17 percent in the United States. I have been confused about this issue because we included a table of postmerger performance in Jensen and Ruback (1983) that had similar results. At the time I was convinced the results were due to selection bias or some simple statistical malfunction. Franks, Harris, and Mayer use almost all mergers, and so the selection bias argument now seems less plausible. They also use different specifications and get similar results. Reluctantly, I think we have to accept this result—significant negative returns over the two years following a merger—as a fact.

Accepting the fact does not mean I have to accept the explanation given. I do not believe there is an explanation for this phenomenon that is consistent with market prices, including the information in the *Wall Street Journal*. We finance folks call it semistrong market efficiency. Economists use the label rational expectations. Whatever you call it, this finding can be used to make money. I can tell when a merger

1. This conceptual framework is explained in more detail in Ruback (1984).

is completed. I can sell short. That gives me supernormal returns. And that violates market efficiency.

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