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Acquisition premiums when investment banks invest their own money in the deals they advise and when they do not: Evidence from acquisitions of assets in the UK

Aris Stouraitis *

Department of Economics and Finance, City University of Hong Kong, 83 Tat Chee Avenue, Kowloon Tong, Hong Kong, People's Republic of China

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Abstract

This paper shows that investment banks that advise acquirers of assets negotiate favourable terms when they invest their own money in the deal, but lead their clients to overpay when they do not have financial incentives. Acquirers pay the smallest premiums in divisional MBOs when advised by the investment bank that finances the deal, and the largest premiums in interfirm asset sales when advised by an investment bank remunerated contingent on deal completion. Premiums are in between the two extremes when acquirers do not use advisors. These results are attributed to investment bank incentives, which exacerbate the information asymmetry between buyers and sellers of assets.

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Keywords: Investment banks; Sell-offs; MBOs; Acquisition premium

1. Introduction

Recent research has questioned whether the incentives implicit in the compensation of investment banks advising acquirers in mergers and acquisitions lead to

* Tel.: +852-2788-8450; fax: +852-2788-8806.
E-mail address: efstoura@cityu.edu.hk (A. Stouraitis).

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better deals for their clients. For example, McLaughlin (1990) documents that financial advisors whose compensation consists, at least partly, of contingent fee payments (paid only if the deal is completed), have incentives to complete deals at any price, even if their advice leads clients to overpay. The literature has examined investment banks only when they are remunerated with contingent fee compensation and their incentives are not aligned with the acquirer's interests (McLaughlin, 1990, 1992; Rau, 2000). In contrast, this paper examines investment bank behaviour when their incentives are very closely aligned with the acquirer's interests. More specifically, it compares the premiums paid for acquisitions of assets under three different scenarios: when the acquirers are advised by investment banks that also finance the deal; when they are advised by investment banks that do not provide financing; and when the acquirers do not use financial advisors. The paper uses the provision of financing by the advising investment bank as the criterion for evaluating its incentives during the acquisition negotiations. Investment banks that invest in the deal have strong incentives to negotiate favourable terms in order to safeguard their investment.

Unit management buyouts (divisional MBOs) and interfirm asset sales are appropriate transactions for this direct comparison. Investment banks that advise MBO acquirers often participate in financing the deal. The combination of a management team with inside information about the acquired division working with an investment bank that invests its own money in the deal increases the likelihood that the assets can be acquired at a low price. In contrast, in interfirm asset sales, the combination of an investment bank with incentives to complete the deal at any price (subject to contingency fee compensation) working with an acquirer who has an information disadvantage vis-à-vis the seller, can lead to the acquirer paying higher premiums for the acquisition of the assets.

The paper uses a sample of 600 sell-offs (91 unit management buyouts and 509 interfirm asset sales) undertaken by UK selling firms during the period 1984–1994. The findings show that in divisional MBOs, acquirers who use financial advisors pay lower acquisition premiums compared to acquirers who do not use advisors. [1] However, these low premiums are observed only in transactions in which the advisors participate in financing the deal. In contrast, in interfirm asset sales acquirers who use advisors pay higher premiums compared to acquirers who do not use advisors. When all acquirers use advisors, the average premium in divisional MBOs is significantly smaller compared to interfirm asset sales. Any differences in the sample are driven exclusively by deals whose acquirers use advisors. There are no significant differences between deals whose acquirers are not advised by investment banks. The results are robust in cross-sectional regressions of premiums and seller abnormal returns using a

[1] The acquisition premium is defined as the difference between the selling price and the intrinsic value of the divested assets. Since these assets are not publicly traded and have no observable market value, their intrinsic value is estimated based on accounting fundamentals, using insights from the literature on the relevance of balance sheet and income statement information for firm valuation (Copeland et al., 2000; Ohlson, 1995; Collins et al., 1997; Hayn, 1995; Berger et al., 1996; Burgstahler and Dichev, 1997; Barth et al., 1998; Collins et al., 1999).

number of controls and two different proxies for the premium. The results also hold if we keep the identity of the advisor constant and compare premiums when the latter advises on MBOs and interfirm asset sales.

The main insight that emerges from this analysis is that in contrast to what has been suggested by earlier work, the use of financial advisors can help acquirers negotiate favourable terms in acquisitions. However, this appears to be the case only when the investment banks invest their own money in the deals they advise. Otherwise, acquirers are likely to overpay when using advisors.

The paper is organised as follows. The next section outlines the research hypotheses. Section 3 discusses the research methodology and Section 4 describes the data. Section 5 presents the empirical analysis of selling firm abnormal returns. Section 6 analyses the selling premiums. Section 7 concludes.

2. Research hypotheses

The incentives of investment banks who advise the acquirers of assets exacerbate the impact of the information asymmetries between buyer and seller on the selling premium (information asymmetries exist because divested assets are divisions of larger firms, they have no observable market value, and the parent company discloses limited information about them). In MBOs, the acquirer's advisor usually invests in the deal and has incentives to negotiate a low price. In contrast, when an investment bank is advising acquirers in interfirm asset sales, the bank's incentives may lead to higher acquisition premiums, because the bank is compensated contingent on the completion of the deal (in tender offers at least two-thirds of the investment bank's compensation is contingency fee; the proportions that have been reported are 66% (Rau, 2000), 76% (McLaughlin, 1990), and 78% (McLaughlin, 1992); in mergers this percentage is 39% (Rau, 2000)). This paper tests four hypotheses on the premiums received by selling firms in divestitures:

H_1: Divisional MBOs whose acquirers are advised by an investment bank are associated with lower premiums compared to MBOs not advised by an investment bank.

H_2: Interfirm asset sales whose acquirers are advised by an investment bank are associated with higher premiums compared to interfirm asset sales not advised by an investment bank.

H_3: When the acquirer uses an investment bank as its advisor, MBOs are associated with lower premiums compared to interfirm asset sales (the corollary is that premiums paid by acquirers who do not use the services of an investment bank should lie in between the two extremes, with unit MBOs likely to be associated with lower premiums compared to interfirm asset sales).

H_4: Among divisional MBOs whose acquirers are advised by an investment bank, deals whose advisors participate in financing the deal are associated with lower premiums compared to deals whose advisors choose not to participate in the financing.

An alternative hypothesis concerning divisional MBO sell-offs is the following. Investment banks may choose to participate in financing MBOs only when they think that it is profitable to do so. Hence, they advise offering higher premiums in these cases. If they do not think it is profitable, they do not advise offering high premiums and also do not participate in financing. In contrast to Hypotheses H_1 and H_4, this alternative hypothesis posits that divisional MBOs whose acquirers are advised by an investment bank that participates in financing the deal are associated with higher premiums paid by the acquirer.

3. Research methodology

This paper tests the hypotheses by examining (i) selling firm abnormal returns at the announcement of the deal, and (ii) the premium over the assets' value received by the seller.

3.1. Seller market reaction

An indirect way of testing the proposed hypotheses is by using the seller's abnormal returns during the sell-off announcement as a proxy for evaluating the price received. This is the approach followed, for example, by Hite and Vetsuypens (1989), who find lower abnormal returns for sellers during the announcement of divisional MBOs compared to interfirm asset sales, which they attribute to the acquiring management team being able to acquire the assets at a lower price. Since MBO acquirers are not publicly traded companies, focusing on the market reaction experienced by the seller (rather than the acquirer) allows a direct comparison between MBOs and interfirm asset sales. Assuming that selling firm abnormal returns are reasonable proxies for the magnitude of the premium received by the seller, the following relationship is tested:

$$\text{Seller abnormal returns} = f(\text{acquirer's advisor},\ \text{control variables}). \tag{1}$$

In the estimated cross-sectional regression specifications of Eq. (1), seller abnormal returns are for days $[-1, 0]$ relative to the announcement of the sell-off. Abnormal returns were calculated using a market model residuals approach (Brown and Warner, 1985), with an estimation period for the parameters of the market model trading days $[-300, -61]$ relative to the event day. An acquirer's advisor dummy variable indicates whether the acquirer was advised by an investment bank. The control variables are the ratio of selling price divided by the market capitalisation of the selling firm 30 trading days before the sell-off announcement, the natural logarithm of the market capitalisation of the selling firm, dummy variables for divisions with negative or zero operating earnings, dummy variables for the sign of the selling premium, and the presence of financial advisors advising the *seller*. The regressions also control for the percentage of the consideration received in the form of equity participation by the seller in the buyout firm. According to Hite and Vetsuypens (1989), the market may receive MBO sell-offs more favourably if the seller retains equity in the buyout firm.

3.2. Selling premium

Seller abnormal returns can be influenced by a number of strategic considerations in addition to the magnitude of the premium received. Therefore, a more direct way of testing the hypotheses is by using two alternative proxies for the selling premium.

3.2.1. Selling price-to-book ratio

This is defined as the ratio of the selling price of the divested assets over the book value of these assets. The relationship tested is

$$\text{Selling price-to-book ratio} = f(\text{acquirer's advisor, valuation variables, division ROA}). \quad (2)$$

In the estimated cross-sectional regression specifications of Eq. (2), the selling price is the total consideration received by the selling firm for the operating assets of the divested division, including the assumption of liabilities. The book value of the divested division's operating assets is measured at the date of the completion of the sell-off. [2] A dummy variable indicates whether the acquirer used a financial advisor. The valuation dummy variables indicate divested divisions with positive operating earnings, intangible intensive assets, financial division, or real estate assets, and the control variable is the divested division's return on assets ROA (operating earnings divided by the book value of assets).

The valuation dummy variables control for factors that affect the cross-sectional variation of the price-to-book ratio. Hayn (1995), Berger et al. (1996) and Burgstahler and Dichev (1997) suggest that the market value of firms with negative earnings can best be approximated by their book value. Negative earnings are not informative about firm value because, if they are expected to persist, the owners can exercise their abandonment option and liquidate the firm, recovering approximately the book value of the assets. On the other hand, the presence of intangible assets that are not recorded in the financial statements but which do affect the market value of the division may render the book value less informative. Following Collins et al. (1997), divested subsidiaries were grouped as being (unrecorded) intangible intensive when they belonged to the following industries: electronic components and accessories, business services, engineering, accounting, R&D and management-related services, plastics, synthetic materials, drugs, computers, and office equipment. Finally, Barth et al. (1998) suggest a book value approach for valuing financial and real estate firms. Divested assets with predominantly real estate value are defined in this paper as property portfolios, shopping centres, pubs, and hotels (excluding hotel chains).

[2] During the period under study, UK firms were allowed to write off goodwill paid during acquisitions against reserves. If these acquisitions were subsequently divested, the book value of the divested assets was reported in the financial statements after adding back any goodwill previously written off (Davies et al., 1994, pp. 338–342). The book value including goodwill incorporates information related to the value of the assets at the time they were acquired, but is not the best proxy for their value at the time of the sell-off. For this reason, the book value measure used in this paper excludes goodwill written back.

3.2.2. Selling price

The excess proceeds over the value of the divested assets received by the seller can also be estimated as a residual from a cross-sectional regression of selling price on book value and operating earnings of the divested assets across the sample. This approach is based on research that derives the value of the firm as a weighted average of the firm's book value and earnings (Ohlson, 1995; Copeland et al., 2000). It assumes that the portion of the selling price of the assets that is not explained in a cross-sectional regression of selling price on past book value and operating earnings is an estimate of the excess proceeds received during the sale of the assets. The paper examines whether the type of acquirer and the presence of financial advisors have any incremental explanatory power for the selling price of the assets beyond their past operating earnings and book value. The relationship tested is

$$\text{Selling price} = f(\text{acquirer's advisor},\ \text{book value},\ \text{operating earnings},\ \text{valuation variables}). \tag{3}$$

In the estimated cross-sectional regression specifications of Eq. (3), the acquirer's advisor dummy variable indicates whether the acquirer used a financial advisor; selling price and book value of the assets are as defined previously; the operating earnings of the divested division pertain to the last full fiscal year it operated as a division of the selling firm; the selling price, book value, and operating earnings are scaled by the market capitalisation of the selling firm 30 trading days before the sell-off announcement; and the valuation dummy variables indicate the sign of operating earnings, intangible intensive assets, financial firms and real estate assets. The valuation variables appear as interaction terms with the division's book value and operating earnings.

4. Data

The sample of unit MBOs and interfirm asset sales by UK parents was obtained by searching the Thomson Financial Securities Data database for sell-offs announced during the period between 1984 and 1994 with a selling price higher than £5 million. Out of an initial sample of 7505 sell-offs, transactions were deleted if there was no reference in the *Annual Index to the Financial Times*, if there was confounding news for the seller within 10 calendar days around the sell-off announcement, and if sellers did not have stock returns data for 300 trading days preceding the event or their stock traded only infrequently during the estimation and event period. The day the article announcing the sell-off appeared in the *Financial Times* was designated as event day $t = 0$. Stock returns were obtained from Datastream. Abnormal returns were calculated using the value-weighted FT-All Share Index for the London stock-market. Seller abnormal returns could be estimated for 600 sell-offs (91 unit MBOs and 509 interfirm asset sales).

Data on the type of asset sale, financial advisors, selling prices and stock participation by the seller in the buyout were obtained from Thomson Financial Securities

Table 1
Descriptive statistics for sample of sell-offs by UK parent companies 1984–1994

	CAAR $[-1,0]$ (%)	Selling firm market value (£m)	Divested assets selling price (£m)	Divested assets book value (£m)	Divested assets operating earnings (£m)	Selling price over selling firm market value
(A) All deals ($N = 600$)						
Mean	1.2	1716	56	50	5	0.18
Median	0.3	622	18	17	2	0.05
(B) Unit MBOs ($N = 91$)						
Mean	0.7	1764	37	38	7	0.18
Median	0.2	471	12	22	3	0.04
(C) Interfirm asset sales ($N = 509$)						
Mean	1.3	2229	59	52	5	0.22
Median	0.4	904	19	16	2	0.05

The event day ($t = 0$) is designated as the day the sell-off announcement appeared in the Financial Times. CAAR were calculated using market model residuals, with parameters of the market model estimated using returns for days $[-300, -61]$ and the FT-All Share Index for the London stock market. Selling firm market value is the market capitalisation of the selling firm 30 trading days preceding the sell-off announcement. Divested assets selling price includes the assumption of liabilities. Divested assets book value and divested assets operating earnings are for the last full accounting year the subsidiary operated as part of the selling firm. Book value of assets data are available in the annual reports for 268 deals and operating earnings for 187 deals.

Data transaction reports. The book values of the divested divisions' operating earnings and assets were obtained from annual reports or from the Financial Times articles. The book value of the divested division's assets was available for 268 sell-offs (43 unit MBOs and 225 interfirm asset sales). Operating earnings of divested divisions were available for 187 sell-offs (27 unit MBOs and 160 interfirm asset sales).

All deals were checked in the advisors fee section of Thomson Financial Securities Data. Whether a bank participated in financing an MBO is disclosed but there is no information on the exact amount of the financing provided by the advisors. The same is true with respect to the financial advisor's fee structure in interfirm asset sales. The only deal in the sample for which data exist is the interfirm asset sale by British Petroleum of its US subsidiary Standard Oil in 1986. The acquirer's advisors received fees totalling US$9.6 million, of which US$7.4 million (77% of the total fee) was contingent upon completion of the deal. This percentage is in line with the proportions reported by McLaughlin (1990, 1992) and Rau (2000) for advisors in tender offers and mergers.

Table 1 reports seller cumulative average abnormal returns (CAAR) for trading days $[-1,0]$ relative to the sell-off announcement and other descriptive statistics for the sample. Sellers experience CAAR of 1.2%. The mean selling firm market capitalisation is £1.7 billion, the mean selling price of the assets is £56 million, the mean ratio of selling price over the market capitalisation of the seller is 18%, and the mean operating earnings of the divested divisions during the year preceding the sell-off is

Table 2
Top 15 investment banks that advised acquirers in the sample, by number of deals

Unit management buyouts		Interfirm asset sales	
Financial advisor	Deals	Financial advisor	Deals
Price Waterhouse	5	SG Warburg	9
3i Group	3	Lazard	8
KPMG Peat Marwick	3	NM Rothschild & Sons	8
Bankers Trust	2	Kleinwort Benson	7
Chase Manhattan	2	Barclays de Zoete Wedd	7
Royal Bank of Scotland	2	Samuel Montagu	6
Hill Samuel	1	Salomon Brothers	5
Citicorp Venture Capital	1	Credit Suisse First Boston	4
NatWest Markets Group	1	Wertheim Schroder	4
Kleinwort Benson	1	Baring Brothers	3
SG Warburg	1	Hill Samuel	3
Prudential Venture Managers	1	KPMG Peat Marwick	3
Robert Fleming	1	Merrill Lynch	3
Samuel Montagu	1	Robert Fleming	3
Charterhouse Development Capital	1	Morgan Grenfell	3

In case of multiple advisors, credit is given to all advisors advising a deal.

£5 million. Table 2 provides a list of the top 15 investment banks advising acquirers in acquisitions of divested assets, by number of deals in the sample.

5. Analysis of selling firm abnormal returns

The preliminary results reported in Table 3 support the first three hypotheses. Panel A shows that in unit MBOs, sellers experience negative abnormal returns when the acquirers are advised by investment banks (averaging from −0.7% to −1.7%), and positive returns when acquirers do not use financial advisors (from 1.2% to 1.3%). In row (4), differences in the means range from 2.1% to 3.1% (statistically significant at the 5% and 10% level; differences in the medians are marginally not significant at the 10% level in two-tailed Mann–Whitney tests). In these MBOs, since the advisors participate in financing the deal, both the advisors and the acquiring management teams have incentives to pay low prices and to structure deals in a way that creates value for the acquirer. The negative market reaction experienced by the seller when an investment bank advises the acquirer may indicate that the assets were divested at a low price.

The differences are in the opposite direction in interfirm asset sales. Panel B, row (8), shows that deals in which the acquirers are advised by investment banks are associated with positive abnormal returns of between 2% and 2.1% for the seller. This is between 1% and 1.2% higher than deals in which the acquirers are not advised by investment banks (the differences are statistically significant at the 10% level in two-tailed tests). The advisors in these interfirm asset sales are compensated contingent on deal completion and have incentives to complete the deals even if the buyers over-

Table 3
Mean seller abnormal returns at the announcement of unit management buyouts and interfirm asset sales (total sample, $N = 600$)

	CAAR $[-1, 0]$ (%)	CAAR $[-3, +1]$ (%)
(A) Unit MBOs		
1. All deals ($N = 91$)	0.7	0.4
	(0.89)/[0.17]	(0.95)/[0.40]
2. Acquirer advised ($N = 29$)	−0.7	−1.7
	(0.87)/[0.67]	(0.80)/[0.52]
3. Acquirer not advised ($N = 62$)	1.3	1.4
	(0.80)/[0.06]*	(0.81)/[0.13]
4. Difference: Acquirer not advised compared to acquirer advised (3)–(2)	2.1	3.1
	(0.06)*/{0.18}	(0.03)**/{0.15}
(B) Interfirm asset sales		
5. All deals ($N = 509$)	1.3	1.2
	(0.78)/[0.00]***	(0.85)/[0.00]***
6. Acquirer advised ($N = 121$)	2.0	2.1
	(0.73)/[0.00]***	(0.76)/[0.00]***
7. Acquirer not advised ($N = 388$)	1.0	0.9
	(0.80)/[0.00]***	(0.88)/[0.00]***
8. Difference: Acquirer not advised compared to acquirer advised (7)–(6)	−1.0	−1.2
	(0.06)*/{0.50}	(0.07)*/{0.31}
(C) Comparison of interfirm asset sales and unit MBOs		
9. Difference: All interfirm asset sales compared to all unit MBOs (5)–(1)	0.6	0.8
	(0.27)/{0.27}	(0.25)/{0.36}
10. Difference: Advised interfirm asset sales compared to advised unit MBOs (6)–(2)	2.7	3.8
	(0.02)**/{0.05}*	(0.01)***/{0.04}**
11. Difference: Not advised interfirm asset sales compared to not advised unit MBOs (7)–(3)	−0.3	−0.5
	(0.65)/{0.95}	(0.55)/{0.82}

The table presents the CAAR for 600 sell-off announcements by UK firms that divest assets during 1984–1994. Day $t = 0$ is the day the announcement appeared in the Financial Times. Abnormal returns were calculated using market model residuals, stock returns for days $[-300, -61]$, and the FT-All Share Index. Acquirer advised indicates that the acquirer of the assets used an investment bank as advisor. Acquirer not advised indicates that the acquirer did not use a financial advisor. Values in parentheses/square brackets/curly brackets are p-values for two-tailed t-/Wilcoxon/Mann–Whitney tests, respectively. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

pay. In this case, the positive market reaction for the seller when an investment bank advises the acquirer may be an indication that the assets were divested at a high price. [3]

Panel C, row (10), shows that when all acquirers use advisors, the differences in mean seller abnormal returns between interfirm asset sales and unit MBOs range from 2.7% to 3.8% (statistically significant at the 2% and 1% level; differences in medians are significant at the 5% level). In rows (9) through (11), any differences in seller abnormal returns between unit MBOs and interfirm asset sales can be attributed

[3] Servaes and Zenner (1996) also report seller CAARs 2.31% points larger when acquirers use advisors.

to deals in which the acquirers use advisors. There are no significant differences between deals when acquirers do not use advisors.

Assuming that selling firm abnormal returns are reasonable proxies for the magnitude of the premium paid by the seller, and that they are positively related to this premium, these preliminary results (particularly rows (4), (8) and (10) in Table 3) offer support to Hypotheses H_1, H_2, and H_3.

These results are robust in cross-sectional regressions of seller abnormal returns for trading days $[-1,0]$ around the sell-off announcement reported in Table 4 (all regressions have also been estimated using $[-3,0]$ and $[-3,+1]$ day CAAR as dependent variables but the results were qualitatively similar and are not reported). All reported significance levels are based on White (1980) heteroskedasticity-consistent standard errors.

Column (1) of Table 4 reports that for unit MBOs, the coefficient of the dummy variable indicating that the acquiring management team uses an advisor is −0.027 (p-value 0.024). Columns (2) through (5) control for the presence of a seller's advisor, who can contribute negotiating skills and widen the search for buyers, potentially cancelling the information advantage of the MBO team. But even after controlling for seller's advisor presence, the coefficients of the acquirer's advisor variable still range from −0.016 to −0.018 (statistically significant at the 10% and 5% level respectively). In contrast to MBOs, in column (6), the coefficient of the acquirer's advisor dummy variable in the subsample of 509 interfirm asset sales is now positive, taking the value 0.008 (statistically significant at the 10% level). [4]

Interfirm asset sales in which the acquirers use advisors are also more likely to result in negative returns for the acquirer and positive returns for the seller (these results are not reported in the tables). [5] In 42% of the deals in which acquirers use advisors, returns are negative for the acquirer and positive for the seller. This percentage is only 25% for deals when acquirers do not use advisors. Advised deals are also less likely to result in win–win situations, i.e., positive returns for both parties. Only 25% of the deals in which acquirers use advisors are win–win, compared to 47% of the deals when acquirers do not use advisors. A χ^2 test marginally fails to reject the hypothesis that the proportions are equal at the 10% level. Overall, acquirers who use advisors have mean $[-1,0]$ ($[-3,+1]$) abnormal returns of 0.3% (−0.6%)

[4] Acquisition targets experience a more positive reaction when the consideration is paid in cash (Travlos, 1987). Servaes and Zenner (1996) argue that cash transactions are simpler and less likely to involve advisors, although their results are not significant for acquisitions of assets. In this paper, the consideration for 25% of the advised MBOs is cash, compared to 33% for non-advised MBOs. The respective percentages for interfirm sales are 45% and 44%. A χ^2 test cannot reject the hypothesis that the observed proportions are equal at the 10% level. The regressions control for stock participation by the seller in the MBO firm. In results not reported, the proportion of acquirer stock in the consideration was not significant in explaining seller abnormal returns in interfirm asset sales.

[5] Acquirer data are for a subsample of 48 interfirm asset sales whose acquirers are publicly traded UK and US companies (many acquirers in the sample are not publicly traded and others are located in a large number of countries, rendering cross-country comparisons difficult). Of those, 12 acquirers use an investment bank as advisor and 36 do not.

Table 4
Regressions of selling firm abnormal returns

	Unit MBOs ($N = 91$)	Unit MBOs ($N = 91$)	Unit MBOs ($N = 91$)	Unit MBOs ($N = 91$)	Unit MBOs ($N = 91$)	Interfirm asset sales ($N = 509$)
Dependent Variable	AR $[-1,0]$	AR $[-1,0]$	AR $[-1,0]$	AR $[-1,0]$	AR $[-1,0]$	AR $[-1,0]$
Adjusted R^2	0.16	0.16	0.17	0.18	0.16	0.13
Intercept	0.007	0.007	0.007	0.008	0.002	0.026
	(0.164)	(0.739)	(0.178)	(0.111)	(0.628)	(0.044)**
Acquirer's advisor	−0.027	−0.027	−0.016	−0.018		0.008
	(0.024)**	(0.027)**	(0.064)*	(0.050)**		(0.095)*
Seller's advisor		−0.008			0.007	0.004
		(0.372)			(0.474)	(0.409)
(Seller's advisor) × (Divested division underperforming dummy)				−0.024	−0.027	
				(0.186)	(0.219)	
(Acquirer's advisor) × (Seller's advisor)			−0.025	−0.023	−0.041	
			(0.245)	(0.286)	(0.074)*	
Selling price divided by seller market value	0.035	0.039	0.038	0.037	0.037	0.020
	(0.139)	(0.111)	(0.087)*	(0.093)*	(0.102)	(0.133)
Divested division underperforming dummy	0.006		0.006			
	(0.733)		(0.726)			
Negative selling premium dummy	−0.022	−0.019	−0.021	−0.013	−0.009	−0.020
	(0.125)	(0.020)**	(0.124)	(0.122)	(0.312)	(0.014)**
Positive selling premium dummy	0.060	0.062	0.061	0.070	0.069	0.029
	(0.193)	(0.158)	(0.197)	(0.155)	(0.209)	(0.024)**
Percent stock participation	−0.001	−0.002	−0.001	0.002	0.007	
	(0.970)	(0.881)	(0.948)	(0.901)	(0.697)	
Ln (seller market value)		0.001				−0.003
		(0.832)				(0.070)*

The table reports the results of ordinary least squares regressions of abnormal returns for days $[-1,0]$, for a sample of 600 sell-off announcements by UK parent firms that divest assets during 1984–1994. The event day $t = 0$ is the day the newspaper article announcing the sell-off appeared in the Financial Times. Abnormal returns were calculated using a market model residuals approach, with parameters estimated using stock returns for days $[-300,-61]$ and the FT-All Share Index for the London stock market. Acquirer's (Seller's) advisor are dummy variables indicating that an investment bank advised the parties. Divested division underperforming is a dummy variable for divisions with negative or zero operating earnings when divested. Percent stock participation is the fraction of the new buyout firm's equity retained by the seller. Positive (negative) selling premium is measured with respect to the book value of operating assets. Values in parentheses are p-values for two-tailed tests based on White (1980) heteroskedasticity adjusted standard errors. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

at the announcement of the deals, compared to −0.4% (−0.3%) for acquirers that do not use advisors. These differences are not statistically significant.

The results on seller abnormal returns support the hypotheses of this paper for MBOs. The results for interfirm asset sales are less conclusive. However, abnormal returns might be influenced by many considerations related to the acquisition and are probably imperfect proxies for the magnitude of the premium.

6. Analysis of selling premiums

6.1. Preliminary results

Table 5 reports the premiums over book value of assets received by sellers in MBOs of divisions and interfirm asset sales. In row (3), in unit MBOs when the management team is advised by an investment bank that finances the deal the mean premium is negative −7.6% and the sellers' mean abnormal returns range from −3.2% to −4.8%. On the other hand, the mean premium when the MBO team does not use an advisor, as shown in row (6), is 45.9% and sellers experience positive mean abnormal returns ranging from 1.2% to 2.5%. In six divisional MBOs in the sample the banks providing the financing are different from those advising on the deal, indicating that the advisor chose not to provide financing. These deals are associated with higher premiums and seller abnormal returns compared to MBOs advised by investment banks that finance the deal (these premiums are in line with deals whose acquirers do not use advisors). In row (5), the difference in premiums is 52.2% points and the difference in seller abnormal returns is between 3.6% and 5.6%. However, the differences are not statistically significant at conventional levels.

The results are in the opposite direction for interfirm asset sales. In Panel B, rows (11) and (12), the mean premium when the acquirer uses an investment bank is 72.5% (median 48.8%). The mean premium when the acquirer is not advised is 101% (median 33.2%). Mean seller abnormal returns for interfirm asset sales are positive, ranging from 0.9% to 1.7%. These premiums are similar to the premiums (over market value) for mergers reported by Rau (2000). For deals advised by first-, second-, and third-tier investment banks respectively, he reports mean (median) premiums of 49.2% (36.6%), 50.3% (35.7%), and 136.7% (41.8%).

In Panel C, row (16), the mean premium in interfirm asset sales when the acquirer is advised is 80.1% points larger compared to MBOs in which the acquirers use advisors who provide financing (difference statistically significant at the 5% level; difference in medians significant at the 10% level). The differences in selling firm abnormal returns range from 4.7% to 6.4% (highly statistically significant). In rows (14) through (18), only the differences between divisional MBOs and interfirm asset sales whose acquirers use investment banks are statistically significant. There are no significant differences between deals in which acquirers are not advised by investment banks.

In results not reported in the table, similar insights are obtained when keeping the identity of the investment bank constant and examining whether premiums differ according to whether the banks advise acquirers in unit MBOs or interfirm asset sales. In this subsample, the mean premium in the five unit MBOs when the buyer is advised by an investment bank is 53.7% (median 42.9%). In the 14 cases in which the same investment banks advise acquirers in interfirm asset sales, the mean premium is 107.8% (median 74.6%). Due to the small sample size, the difference is marginally not statistically significant at the 10% level in two-tailed tests.

Table 5
Mean selling firm abnormal returns and selling premium at the initial sell-off announcement of unit management buyouts and interfirm asset sales ($N = 268$)

	CAAR $[-1, 0]$ (%)	CAAR $[-3, +1]$ (%)	Selling premium (%)
(A) Unit MBOs			
1. All deals ($N = 43$)	0.4 (0.94)/[0.59]	1.0 (0.88)/[0.12]	35.7 (0.82)/[0.09]*
2. Acquirer advised ($N = 16$)	−0.9 (0.87)/[0.84]	−1.5 (0.86)/[0.80]	18.4 (0.80)/[0.12]
3. Acquirer advised and advisor finances the deal ($N = 7$)	−3.2 (0.69)/[0.24]	−4.8 (0.70)/[0.50]	−7.6 (0.93)/[0.99]
4. Acquirer advised and advisor does not finance the deal ($N = 6$)	0.5 (0.66)/[0.21]	0.9 (0.64)/[0.31]	44.6 (0.47)/[0.12]
5. Difference: Acquirer advised by investment bank who does not finance the deal compared to acquirer advised by investment bank who finances the deal (4)–(3)	3.6 (0.28)/{0.47}	5.6 (0.28)/{0.47}	52.2 (0.24)/{0.57}
6. Acquirer not advised ($N = 27$)	1.2 (0.85)/[0.56]	2.5 (0.68)/[0.07]*	45.9 (0.81)/[0.27]
7. Difference: Acquirer not advised compared to acquirer advised (6)–(2)	2.1 (0.27)/{0.96}	4.0 (0.07)*/{0.31}	27.5 (0.58)/{0.63}
8. Difference: Acquirer not advised compared to acquirer advised by investment bank who finances the deal (6)–(3)	4.4 (0.12)/{0.34}	7.2 (0.03)**/{0.14}	53.5 (0.47)/{0.65}
9. Difference: Acquirer not advised compared to acquirer advised by investment bank who does not finance the deal (6)–(4)	0.7 (0.77)/{0.78}	1.6 (0.52)/{0.74}	1.4 (0.99)/{0.40}
(B) Interfirm asset sales			
10. All deals ($N = 225$)	1.3 (0.76)/[0.00]***	1.1 (0.85)/[0.00]***	93.6 (0.76)/[0.00]***
11. Acquirer advised ($N = 58$)	1.6 (0.74)/[0.02]**	1.7 (0.77)/[0.07]*	72.5 (0.47)/[0.00]***
12. Acquirer not advised ($N = 167$)	1.3 (0.77)/[0.00]***	0.9 (0.88)/[0.16]	101.0 (0.77)/[0.00]***
13. Difference: Acquirer not advised compared to acquirer advised (12)–(11)	−0.3 (0.63)/{0.94}	−0.8 (0.36)/{0.31}	28.5 (0.54)/{0.18}
(C) Comparison of interfirm asset sales and unit MBOs			
14. Difference: All interfirm asset sales compared to all unit MBOs (10)–(1)	0.9 (0.24)/{0.20}	0.1 (0.95)/{0.46}	57.9 (0.22)/{0.04}**
15. Difference: Advised interfirm asset sales compared to advised unit MBOs (11)–(2)	2.5 (0.07)*/{0.27}	3.2 (0.08)*/{0.43}	54.1 (0.05)**/{0.07}*
16. Difference: Advised interfirm asset sales compared to advised unit MBOs whose advisors finance the deal (11)–(3)	4.7 (0.02)**/{0.05}*	6.4 (0.02)**/{0.20}	80.1 (0.05)**/{0.05}*
17. Difference: Advised interfirm asset sales compared to advised unit MBOs whose advisors do not finance the deal (11)–(4)	1.1 (0.57)/{0.68}	0.8 (0.74)/{0.91}	27.9 (0.51)/{0.61}

(*continued on next page*)

Table 5 (*continued*)

	CAAR $[-1,0]$ (%)	CAAR $[-3,+1]$ (%)	Selling premium (%)
18. Difference: Not advised interfirm asset sales compared to not advised unit MBO (12)–(6)	0.1 (0.96)/{0.44}	−1.6 (0.18)/{0.17}	55.1 (0.42)/{0.15}

The table shows the CAAR and selling premiums for 268 sell-off announcements by UK firms that divest assets during 1984–1994. Day $t = 0$ is the day the announcement appeared in the Financial Times. Abnormal returns were calculated using market model residuals, stock returns for days $[-300, -61]$, and the FT-All Share Index. Selling premium is measured with respect to the book value of assets. Acquirer advised indicates that the acquirer of the assets used an investment bank as advisor. Acquirer not advised indicates that the acquirer did not use a financial advisor. Values in parentheses/square brackets/curly brackets are *p*-values for two-tailed *t*-/Wilcoxon/Mann–Whitney tests, respectively. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

6.2. Cross-sectional variation in selling premiums in divisional MBOs

Table 6 reports results of cross-sectional regressions of the premiums in unit MBOs. Column (1) shows a negative relation between the divested division's selling price-to-book ratio and a dummy variable indicating that the acquiring management team uses an advisor who participates in financing the MBO. The coefficient is −0.670, which is statistically significant at the 5% level. The adjusted R^2 of the regression is 0.47. The result provides direct support for Hypothesis H_1, that MBO acquirers advised by investment banks pay lower premiums compared to MBO acquirers who are not advised by investment banks.

Column (2) shows that this result is unique to MBOs in which the acquirer's advisor finances the deal. When the advisor does not participate in the financing, the coefficient of the acquirer's advisor dummy variable is positive and not statistically significant (0.086, *p*-value 0.814). This result supports Hypothesis H_4. The provision of financing by the acquirer's advisor appears to drive the results on the lower premiums in MBOs in which acquirers use advisors.

Columns (3) to (6) report results for the specification involving the selling price of the assets controlling for divisional book value and operating earnings. The coefficients of the variables that indicate that the acquirer uses an advisor who provides financing are negative, −0.019 and −0.230 (the dummy variable on its own is not statistically significant at conventional levels, but it is significant at the 5% level when multiplied by the divested division's book value). The adjusted R^2 of these regressions are 0.93 and 0.94 respectively, since book value and earnings information explain a very large portion of the divested divisions' value. [6] In contrast, the coefficients of the acquirer's advisor dummy are positive when the advisor does not provide financing for the MBO (0.004 and 0.227, *p*-values 0.847 and 0.650).

[6] The valuation multiples of book value and earnings have reasonable magnitudes. The regressions indicate that the market value of divisions with negative operating earnings in the MBO sample would be approximately 60–65% of their book value of assets (coefficients 0.616 and 0.651). In contrast, the value of divisions with positive operating earnings would be approximately 7–8 times operating earnings (coefficients 6.936 and 7.681).

Table 6
Regressions of selling premiums of unit management buyouts

Dependent Variable	Divested assets price-to-book ratio		Selling price over seller market value		Selling price over seller market value	
Adjusted R^2	0.47	0.45	0.93	0.93	0.94	0.93
Intercept	0.695 (0.000)***	0.674 (0.000)***	0.010 (0.540)	0.008 (0.678)	0.002 (0.879)	0.007 (0.691)
Acquirer advisor who finances the deal	−0.670 (0.050)**		−0.019 (0.756)			
(Acquirer advisor who finances the deal) × (Division book value of assets divided by seller market value)					−0.230 (0.049)**	
Acquirer advisor who does not finance the deal		0.086 (0.814)		0.004 (0.847)		
(Acquirer advisor who does not finance the deal) × (Division book value of assets divided by seller market value)						0.227 (0.650)
Positive divested division operating earnings divided by seller market value			6.936 (0.000)***	6.893 (0.000)***	7.681 (0.000)***	6.900 (0.000)***
Loss-making divested division book value of assets divided by seller market value			0.616 (0.000)***	0.623 (0.000)***	0.651 (0.000)***	0.624 (0.000)***
Positive divested division operating earnings dummy	0.969 (0.011)**	0.879 (0.006)***				
Divested division ROA	0.523 (0.000)***	0.535 (0.000)***				

The table reports the results of ordinary least squares regressions of selling premiums for a sample of 27 unit management buyouts by UK firms that divest assets during 1984–1994. Selling price of the assets includes the assumption of liabilities. Book value is the book value of the divested operating assets. Operating earnings are the operating earnings of the divested subsidiaries during the last full accounting year in which the subsidiary operated as part of the selling firm. All three variables are scaled by the market capitalisation of the selling firm 30 trading days preceding the sell-off announcement. ROA is operating earnings divided by book value of assets. Acquirer advisor dummy variable indicates that the acquirer of the assets used an investment bank as advisor. Values in parentheses are p-values for two-tailed tests based on White (1980) heteroskedasticity adjusted standard errors. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

6.3. Cross-sectional variation in selling premiums in interfirm asset sales

Table 7 reports results of the same regressions performed in the subsample of interfirm asset sales. The coefficients of the variables indicating that the acquirer uses an advisor are now positive. Although the coefficient is not statistically significant in the regression of the selling price-to-book ratio, it is highly significant in the regression of the selling price (the coefficient 0.029 is statistically significant at the 1% level and the coefficient 0.414 at the 5% level). These results support Hypothesis H_2, that in contrast to divisional MBOs, in interfirm asset sales the presence of financial

Table 7
Regressions of selling premiums of interfirm asset sales

Dependent Variable	Divested assets price-to-book ratio	Selling price over seller market value	Selling price over seller market value
Adjusted R^2	0.11	0.95	0.96
Intercept	1.598	−0.002	0.003
	(0.000)***	(0.758)	(0.460)
Acquirer advisor	0.030	0.029	
	(0.898)	(0.017)**	
(Acquirer advisor) × (Division book value of assets divided by seller market value)			0.414
			(0.000)***
Divested division operating earnings divided by seller market value		−1.248	−1.158
		(0.005)***	(0.006)***
Positive divested division operating earnings divided by seller market value		5.628	6.824
		(0.000)***	(0.000)***
Positive intangible-intensive division operating earnings divided by seller market value		−3.181	−3.938
		(0.000)***	(0.000)***
Divested division book value of assets divided by seller market value		0.894	0.641
		(0.000)***	(0.000)***
Divested real estate division book value of assets divided by seller market value		0.041	0.163
		(0.677)	(0.061)*
Divested financial division book value of assets divided by seller market value		0.171	0.091
		(0.226)	(0.447)
Loss-making divested division book value of assets divided by seller market value		−0.327	−0.120
		(0.106)	(0.441)
Positive divested division operating earnings dummy	0.076		
	(0.874)		
Divested division intangible-intensive dummy	0.374		
	(0.624)		
Divested division real estate dummy	−0.561		
	(0.017)**		
Divested division financial company dummy	−0.525		
	(0.108)		
Divested division ROA	1.638		
	(0.194)		

The table reports the results of ordinary least squares regressions of selling premiums for a sample of 160 interfirm asset sales by UK firms that divest assets during the period 1984–1994. Selling price of the assets includes the assumption of liabilities. Book value is the book value of the divested operating assets. Operating earnings are the operating earnings of the subsidiaries divested during the last full accounting year in which the subsidiary operated as part of the selling firm. All three variables are scaled by the market capitalisation of the selling firm 30 trading days preceding the sell-off announcement. Acquirer advisor dummy variable indicates that the acquirer of the assets used an investment bank as advisor. Values in parentheses are *p*-values for two-tailed tests based on White (1980) heteroskedasticity adjusted standard errors. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

advisors on the acquirer's side is associated with higher acquisition premiums. The adjusted R^2 are 0.11 for the price-to-book ratio regression and 0.95–0.96 for the selling price regressions.

In results not reported in the table, there is also direct support for Hypothesis H_3, which states that when all acquirers are advised by investment banks, divisional MBOs are associated with lower premiums compared to interfirm asset sales. In cross-sectional regressions on the two subsamples combined, the coefficients of the acquirer's advisor variables in unit MBOs and interfirm asset sales retain both their magnitudes and their statistical significance.

7. Conclusions

This paper examines the premiums paid by acquirers, and the role of investment banks in the acquisitions of assets in cases in which the financial advisors face conflicts of interest and in cases where they do not. It uses data on 91 unit management buyouts and 509 interfirm asset sales by UK selling firms for the period 1984–1994. Unlike previous studies, which focus on contingent fee compensation, the current paper uses the provision of financing by the advising investment bank as the criterion for evaluating its incentives during the acquisition negotiations. It compares directly the premiums paid by acquirers under three different scenarios: when they do not use the services of an investment bank; when they use advisors who invest their own money in the deal; and when they use advisors who are compensated based on the completion of the deal.

The empirical results indicate that in unit MBOs, the acquiring management teams pay the lowest premiums when they use investment banks who finance the transaction. These transactions bring together an acquirer with inside information about the division to be acquired and an investment bank that invests its own money in the deal. On the other hand, in interfirm asset sales, acquirers who employ financial advisors pay the largest premiums. These deals combine an acquirer without inside knowledge of the target division with an investment bank whose contingency fee compensation provides an incentive to complete the deal at any price, even if the buyer overpays. These empirical results are robust in cross-sectional regressions that control for several factors that have been shown to affect the selling premium.

This evidence adds to a growing body of literature that questions the incentives of investment banks to negotiate favourable deals for their clients in acquisitions. The main insight from this analysis is that financial advisors help acquirers negotiate favourable terms when they invest their own money in the deal. Otherwise, acquirers are likely to overpay when using investment banks as advisors in acquisitions of assets.

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