

Financing decisions and bidder gains

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Abstract

This paper analyzes the relation between bidder gains and the source of *financing* funds available. We document that after controlling for the form of payment, financing decisions during the year before a takeover play an important role in explaining the cross section of bidder gains. Bidder announcement period abnormal returns are positively and significantly related to the amount of ex ante equity financing. This relation is particularly strong for high q firms. We further report a negative and significant relation between bidder gains and free cash flow. This relation is particularly strong for firms classified as having poor investment opportunities. The amount of debt financing before a takeover announcement is not significantly related to bidder gains. Together, we take these findings as supportive of the pecking-order theory of financing and the free cash flow hypothesis.

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1. Introduction

In a world with agency costs and asymmetric information, among other market imperfections, it is well established that the strict Miller and Modigliani (1958) separation of corporate investment and financing decisions no longer holds. In the vast literature on mergers and acquisitions, a number of studies focus specifically on the interaction between

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financing and investment decisions.¹ In many instances, however, the form of *payment* has been used as a proxy or substitute for the source of *financing*. Yet, even if the takeover is paid for with cash, the actual source of this cash, i.e., the actual financing decision, has largely been ignored as an explanatory variable in valuing managerial takeover decisions and establishing the link between financing and investment decisions.

Unfortunately, there is no way to establish a precise correspondence between a dollar raised in time t and a dollar spent on a takeover in time $t + \tau$.² However, rather than establishing this exact correspondence, we consider the source of the cash that is available at the time the takeover is announced. In other words, can the source of the firm's cash determine whether the cash used to pay for the takeover can be categorized as costly free cash flow or as valuable financial slack? We specifically analyze the relation between the bidder's financing decisions in the period before the takeover and its subsequent acquisition gains. It is shown that, holding the form of payment constant, knowing the firm's financing decisions before the takeover is a significant factor in explaining the cross section of bidder returns.

According to the pecking-order theory, a firm's financing choice is determined by its relative costs of raising funds. Generally, equity financing is the most expensive form, both in direct issuance related and adverse selection costs. When a firm raises external financing in the equity market, investors are uncertain about the motive behind the firm's financing decision. For example, an equity issue could be interpreted by the market as a sign of overvaluation (e.g., Myers and Majluf, 1984) or —alternatively— as a sign of a profitable investment opportunity (e.g., Cooney and Kalay, 1993). Consequently, the investment decision helps in resolving the uncertainty associated with motivation behind the firm's prior financing decision. This potentially links bidder gains and prior financing decisions irrespective of the firm's investment opportunities.

Alternatively, following Stulz (1990), given a poor investment opportunity set, the likelihood for management to invest in negative NPV projects increases in the level of managerial discretion over investment funds. In contrast, firms with a good investment opportunity set are more likely to forego a project for lower levels of managerial discretion. Since the level of managerial discretion depends on the source of financing, a link between financing decisions and bidder gains in cash acquisitions is expected to exist. The qualitative nature of this link depends on the perceived value of the firm's investment opportunities.

The main findings of this study are as follows. We find bidder gains to be positively and significantly related to the amount of cash raised through equity issuance during the fiscal year preceding the takeover announcement. We interpret this as evidence that the takeover announcement serves as a resolution of uncertainty associated with the firm's decision to

¹ For theoretical literature on how the form of payment plays a role in takeovers, see, e.g., Hansen (1987), Fishman (1989), Eckbo et al. (1990), and Berkovitch and Narayanan (1990). For empirical literature, see, e.g., Travlos (1987), Wansley et al. (1983), Franks et al. (1988), Asquith et al. (1987), Amihud et al. (1990), Servaes (1991), and Martin (1996).

² Through SEC filing (and through the SDC database), I collect information on the use of funds. The majority (>85%) of firms report the use as 'general corporate purposes'. Similarly, I collect data on the takeover financing. However, this financing information generally refers to short-term financing arrangements (e.g., bridge financing and issuance of short-term notes) in order to pay for the transaction.

issue equity. Consistent with the free cash flow hypothesis and the findings of [Lang et al. \(1991\)](#) we do find a negative and significant relation between internally generated free cash flows and bidder gains. We do not find a significant relation between the amount of cash raised from debt financing and bidder gains. This is consistent with the notion that debt could serve a monitoring role as well as a restricting role in managerial discretion depending on the firm's investment opportunities.

When we consider the impact of the firm's growth and investment opportunities, we find the following. Using a measure of Tobin's q to measure investment opportunities, we find that the positive relation between equity flows and bidder gains is particularly pronounced for high q firms. To the extent that our measure of growth opportunities could also proxy for performance and valuation, an equity issue for a high q firm is likely to be perceived as a sign of market timing or overvaluation rather than as a sign of profitable future investment opportunities. The takeover announcement in this scenario serves an even larger role as a resolution of uncertainty for firms, which could explain the strong positive relation between equity financing and bidder gains for high q bidders.

The negative relation between internally generated funds and bidder gains is particularly pronounced for firm with below median investment opportunities. This last result is again consistent with the findings in [Lang et al. \(1991\)](#) and supports the free cash flow hypothesis.

We report little or no support for debt financing playing either a monitoring role or reducing managerial discretion. While the link between debt financing and bidder gains is generally more positive for firms with poor investment opportunities, we do not find a significant difference when we compare this relation to that of firms with good investment opportunities.

The remainder of the paper is organized as follows. Section 2 develops the two main hypotheses that are tested and discusses the related literature. Section 3 presents the sample design, selection criteria, and research methodology. Section 4 presents the results for the univariate and multivariate analysis. Section 5 concludes the paper.

2. Theoretical background and hypotheses

2.1. *The pecking order of financing choices and bidder gains*

Following [Myers and Majluf \(1984\)](#), external financing is generally considered to be more costly, in terms of adverse selection costs and transaction costs, than internal financing. Furthermore, issuing equity is assumed to be more costly than issuing debt. [Myers and Majluf \(1984\)](#) focus on asymmetric information between managers and investors to derive a model, which predicts that firms will never finance their investments with equity and would rather reject a positive NPV project in order to maximize existing shareholders' wealth.³ The reason for this is that the dilution effect on the existing shareholders' claim on the assets-in-place outweighs the claim on the NPV of the project.

³ With the possibility of a (risky) debt issue, the decision to issue debt and invest or not to issue and to reject the project will depend on whether the NPV is greater or equal to the capital gain on newly issued debt.

Consequently, equity issues are always a signal of overvaluation and hence considered bad news by the market.

Extending the above framework, Cooney and Kalay (1993) develop a model where they allow for negative NPV projects in the firm's investment opportunity set, while maintaining that managers maximize existing shareholder wealth. If a firm chooses equity to finance a project with a relatively high NPV combined with lower-valued assets-in-place, then an equity issue is no longer necessarily bad news. Rather, an equity issue could signal a particularly profitable project and hence would generate a potentially positive announcement abnormal return. Consistent with this, McConnell and Muscarella (1985) find evidence of a positive stock price reaction when industrial firms announce an increase in their capital expenditures.^{4,5}

Given that firms face positive and negative NPV projects, the stock price reaction associated with a *financing* decision is the net effect of two signals: overvaluation and investment opportunities. Hence, the stock price reaction associated with the *ex post investment* decision reflects both the resolution of the market's uncertainty about the firm's ability to materialize the investment opportunity and whether the financing decision was driven by overvaluation.⁶

To illustrate the argument, consider a scenario where (a) managers maximize existing shareholders' value, (b) management and the market are uncertain about availability and timing of a positive NPV project, and (c) the market is uncertain about the motives for a debt or equity issue. For example, assume that financing costs are a percentage of the amount needed to finance a project. Further, assume that the cost of internal cash flow, debt, and equity financing is 1%, 5%, and 10%, respectively, of the initial investment outlay. If a firm determines the NPV of a project before the financing decision has been made, it should consider the financing costs. Take a firm that considers a project for which it needs to raise \$1 million. Maximizing shareholder value, the firm will only proceed with the project if it has a present value greater than the financing costs. Hence, the present value has to exceed \$10,000, \$50,000, or \$100,000 in case it has to use internal funds, debt, or equity, respectively. Obviously, firms would always prefer to use internal funds if available, but in case no such funds are available, the financing choice predicts the lower bound present value of the project. Given the uncertainty about the realization of the project after the financing decision has been made, one would expect to see—*ceteris*

⁴ In the absence of negative NPV projects, as in the Myers and Majluf (1984) model, the good news from the announcement of a new project will already be reflected in the pre-announcement stock price. Hence, any residual good news from the announcement will be overwhelmed by the bad news of the equity issue.

⁵ The empirical evidence is generally supportive of the hypothesis that an equity issue reveals bad news. A number of studies find significant decreases in the share price upon the announcement of a seasoned equity issue (see, e.g., Smith, 1986). These negative returns can be explained using the asymmetric information theory from Myers and Majluf, or using an agency explanation (see, e.g., Stulz, 1990). However, consistent with the Cooney and Kalay model, studies have also documented increases in the share price for announcements of private equity issues (see, e.g., Wruck, 1989; Hertz and Smith, 1993) and Japanese public issues during the 1980s (see, e.g., Kato and Schallheim, 1993).

⁶ An important observation for the pecking order hypothesis is that, while the expected costs of raising funds are part of the firm's NPV calculation at the time when the financing is selected, these are considered sunk at the time the investment is announced. Hence, the relevant measure to assess the quality of the investment is its incremental value, i.e., the discounted expected cash flows from the project.

paribus—on average a more positive stock price reaction at the takeover announcement when relatively more cash has been raised through equity financing. In case more expensive forms of financing increase the likelihood for realizing a project ex post, the link between financing decisions and stock price reactions at the investment decision might weaken.⁷

2.2. Managerial discretion I: the overinvestment problem

Stulz (1990) theoretically derives the relation between the source of financing and agency costs of managerial discretion over investment funds. Firms with poor investment opportunities benefit from higher leverage because increased capital market discipline and monitoring reduces the overinvestment problem. For firms with good investment opportunities, higher leverage decreases their flexibility and ability to take advantage of value creating investment opportunities. Debt financing pre-commits management to pay out free cash flow rather than to waste it when positive NPV investment opportunities are exhausted. To a lesser extent, equity financing serves a control function as well. At the time of the equity issue, capital markets have the opportunity to assess the value of the firm's assets in place, its investment opportunities, and its incumbent management. However, an equity issue can also be interpreted as an increase in managerial discretion given that it increases the funds under managerial discretion and reduces the relative amount of debt in the firm's capital structure. Given the underlying assumption that managers derive positive perquisites from investing, overinvestment can be reduced by issuing debt.

This leads to the following testable implications regarding the overinvestment hypotheses and the firm's financing mix. Firms are distinguished by their amounts of free cash flow, equity flow, and debt flow relative to their total financing flows. Firms with poor investment opportunities and relatively high levels of free cash flow in their financing mix are more likely to waste these funds on investment projects with negative net present values. Firms with high levels of debt flow in their financing mix, or firms with relatively high levels of debt in their capital structure, are less likely to engage in overinvestment.⁸ Therefore, a larger negative relation is expected between abnormal announcement returns and free cash flow financing, a negative relation for equity financing, and a smaller yet negative relation for debt flows and existing debt in the bidder's capital structure.⁹

⁷ For example, the information contained in a prospectus at the time of an issue of bonds and stock could reveal something about an upcoming takeover. While unreported, in a logistic specification explaining the likelihood of a takeover bid, the effect of the financing decision was similar among debt, equity, and cash. All three forms of financing are positively associated with the likelihood of a takeover occurring in the year following the financing decision. The logistic model follows the model in Harford (1999) with added variables for the financing decisions.

⁸ See Lang et al. (1991) for an extensive discussion on this issue.

⁹ These predictions are also consistent with a signaling argument. Ex post, equity financing in place at the time of the acquisition announcement is less problematic than debt financing in case the acquisition turns out to be unsuccessful. Debt financing, through its ex post commitment to pay out future cash flows, potentially signals a better takeover to investors than equity financing does.

2.3. Managerial discretion II: the underinvestment problem

In testing the underinvestment hypothesis, firms with good investment opportunities and high relative levels of free cash flow are more likely to invest in positive NPV investments than firms with high levels of debt in their capital structure or their financing mix.¹⁰ A problem with testing the underinvestment hypothesis is that we cannot observe firms that refrain from a positive NPV investment because of debt constraints. Under the null hypothesis that high q firms will forego more investments with higher levels of debt, observing a takeover for a high q firm with a high level of debt should be less anticipated than for a firm with a low level of debt. Since the announcement return captures the unexpected part of the investors' anticipated gains, we should expect to see a more positive stock price reaction for high q firms with high relative levels of debt financing or leverage, than for high q firms with low levels of debt financing or leverage.

In summary, in testing the over- and underinvestment hypotheses, the expected relation between financing sources and bidder gains is driven by the differences in monitoring and disciplinary roles across debt, equity, and free cash flow financing, and hence depends on the firm's investment opportunities.

2.4. Related literature

The extant literature on corporate investments and takeovers is divided into papers that assume shareholder wealth maximizing behavior by the firm's management, under some constraint, and papers where management is assumed to pursue their own interests. In the first case, suboptimal investment occurs because of factors outside the control of management, like asymmetric information, transaction costs, or taxes (see, e.g., Myers and Majluf, 1984). Alternatively, when managers maximize their own wealth or utility instead of that of the existing shareholders, an agency conflict results in a deadweight loss and reduces shareholder value (see, e.g., Jensen, 1986; Stulz, 1990). Similarly, when agency problems arise between shareholders and bondholders, suboptimal investment decisions and loss in value can result (see, e.g., Myers, 1977; Stulz, 1990). A third possibility exists where suboptimal investment decisions are not driven by self-interested behavior of management, but by irrational behavior like overoptimism (see, e.g., Roll, 1986).

A number of empirical papers have addressed how debt levels and free cash flow affect bidder returns. However, none of the papers incorporates free cash flow, equity flow, and both debt flow and level in a single framework to specifically address the managerial discretion hypothesis and the pecking order hypothesis.

Lang et al. (1991) test the free cash flow hypothesis by analyzing the bidder abnormal returns around tender offers for low and high q firms with low and high levels of free cash flow. Consistent with the free cash flow hypothesis, they find that the returns for bidders with low investment opportunities and high levels of free cash flow are significantly lower than the returns for high q bidders with high levels of free cash flow. Also, bidders with

¹⁰ This results from the assumption made in Stulz (1990) that the perquisites that management derives from investing are increasing in the NPV of the investment.

low investment opportunities and low levels of free cash flow outperform bidders with low investment opportunities and high levels of free cash flow.

Maloney et al. (1993) reported that higher levels of debt in the firm's capital structure are associated with higher abnormal announcement returns. Debt flows and equity flows are not addressed in their paper, nor do they distinguish between good or poor investment opportunities. Maloney et al. (1993) report a negative association between stock payment and bidder announcement returns, confirming earlier evidence in Travlos (1987).

Bruner (1988) and Smith and Kim (1994) find evidence that bidder target combinations of slack-poor and high free cash flow firms generate higher abnormal announcement returns than combinations that both have high levels of free cash flow or are both slack-poor. Bruner (1988) and Smith and Kim (1994) show some evidence of a monitoring role of debt in the bidder's capital structure. Furthermore, Bruner (1988) concludes that bidders are not building up financial slack prior to a takeover, but do have relatively high levels of slack available.

Harford (1999) and Opler et al. (1999) analyze the takeover behavior of cash-rich firms. These papers document that, consistent with Bruner (1988), cash-rich firms are, on average, more likely to become an acquirer. In Harford (1999), the takeovers by cash-rich firms are best explained by Jensen's (1986) free cash flow hypothesis and are, on average, unfavorably received by the market during their announcement and suffer inferior ex post operating performance. Neither Harford (1999) nor Opler et al. (1999) explicitly explores the source of the firm's cash and whether this affects the extent to which cash-rich firms make good or bad investment decisions.

Finally, Jung et al. (1996) and Baker and Wurgler (2002), among others, find that firms with high market values relative to their book values are more likely to issue equity. An investment or takeover announcement subsequent to the equity issue could help clear up the motivation behind the equity issue and thus be welcomed by the market with a positive stock price reaction.

3. Sample design and methodology

3.1. Sample and data definitions

The sample is constructed from Securities Data Corporation (SDC) International Merger and Acquisition Database (SDC-IMAD) and contains acquiring firms for the period 1984–1998. The acquiring firms in the sample satisfy the following set of conditions. The transaction is completed and categorized by SDC as a majority takeover transaction, i.e., a merger, acquisition of majority interest, or acquisition of all assets. The successful bidder is the bidder making the first bid for the target. The value of the transaction is no smaller than \$10 million, the bidder's assets in the fiscal year prior to the announcement date exceed \$50 million, and the relative size (RELVAL) of the transaction, measured as the transaction value divided by the bidder's market value of assets, exceeds 1%. Bidders have Standard Industrial Classification (SIC) codes outside the ranges 6000–6999 (Financials) and 4900–4999 (Regulated utilities). To control for

the form of payment, only cash transactions are included in the sample. Acquirers must have ordinary shares (CRSP share codes 10 and 11) listed on the AMEX, Nasdaq, or NYSE and exist on both the CRSP and Compustat tapes. Daily security returns and the equally and value-weighted CRSP index are obtained from CRSP.

Table 1 presents the annual distribution of announcement dates of 623 cash takeovers in the final sample grouped by transaction types over the period 1984–1998.

Three sources of cash are considered: internally generated cash flow, the flow of common equity, and flow of total debt. The financing definitions are taken from the Compustat Industrial Annual Expanded file (Primary, Secondary, and Tertiary—Full Coverage and Research files) and the Securities Data Global New Issues database. We apply three methods to define a firm's financing decision.

First, using the cash flow statement, we define internally generated cash flow as operating income before depreciation, minus interest expense on debt, income taxes, and preferred and common dividends (see, e.g., [Lehn and Poulsen, 1989](#)). Common stock financing is defined as the difference between the flows of the sale of common and preferred stock and the purchase of common and preferred stock plus the change in the liquidating value of preferred stock. Total debt financing is defined as the change in the sum of short- and long-term debt financing (see, e.g., [Hovakimian et al., 2001](#)).

Second, using balance sheet items and following [Baker and Wurgler \(2002\)](#), we define net equity issues as the change in book equity minus the change in balance sheet retained earnings. For internally generated cash flow, we use newly retained earnings, which are

Table 1
Annual distribution of announcement dates

Year	<i>n</i>
1984	6
1985	33
1986	34
1987	44
1988	52
1989	64
1990	35
1991	26
1992	39
1993	42
1994	52
1995	48
1996	57
1997	49
1998	42
Total	623

All data is from Securities Data Corporation's (SDC) International Merger and Acquisitions Database. The form of payment is cash exclusively. Acquirers with SIC codes in the 6000–6999 (financials) and 4900–4999 (regulated utilities) range, ADRs, and any other share listings other than common shares (CRSP codes 10 and 11) are excluded from the sample.

defined as the change in retained earnings divided by assets. Net debt issues are defined as the change in assets net of the book value of equity divided by assets.

Third, we compile a sample of equity and debt issues that took place during the fiscal year prior to the takeover announcement from the SDC New Issues Database. We also collect whether sample firms repurchased equity through the open market or executed a self-tender.

Each financing variable is normalized by the firm's book value of assets and measured over the fiscal year prior to the takeover announcement date. Cases where this normalization exceeds one are eliminated. Firms that have not reported a security issue on SDC are assigned zero values for the financing definitions. We calculate the firm's debt-to-equity ratio 2 years prior to the takeover to measure the bidder's capital structure. The results focus on using the Compustat flow numbers, but in some cases, results are reported for the other two measures as well. The results throughout the paper are robust to using either definition.

Finally, following [Stulz \(1990\)](#) and [Lang et al. \(1989, 1991\)](#), bidders are ranked according to their perceived investment opportunity set, as measured by q . Firms are classified as low (high) q based on below (equal or above) sample median values of the firms' average value of q during the 3 years before the takeover announcement.¹¹

3.2. Sample description

[Table 2](#) reports summary statistics for the sample. Panel A provides a description of the target and deal characteristics. About 15% of transactions are classified as a tender offer by SDC. Less than 5% of the transactions are classified as hostile by SDC.¹² The target firms in the sample are mostly either subsidiaries or public firms (50.40% and 37.88%, respectively). Almost 9% of the targets in the sample are private firms. More than 40% of the target firms have a 2-digit SIC code that is different from the acquirer's SIC code. Finally, 23% of the target firms in the sample are non-US.

Panel B provides some bidder characteristics. The acquirers in the sample are generally larger firms with good investment opportunities, as measured by the 3-year average of q . Transaction values range from 1% (by construction) to more than 40% of the acquirer's market value of assets.

Panel C reports event-study abnormal returns. Three-day $[-1, +1]$ and 11-day $[-5, +5]$ event-study returns surrounding the announcement are calculated using market-adjusted and market-and-risk-adjusted returns. Market-adjusted returns are defined as the difference between the raw return and the CRSP equally weighted index. Market-and-risk-adjusted returns are computed using the market model residuals estimated over the

¹¹ The proxy for q (see [Chung and Pruitt, 1994](#)) is calculated as the market value of equity plus the liquidating value of outstanding preferred stock plus current liabilities net of current assets plus the book value of long-term debt divided by the book value of total assets. For robustness, we also use a measure defined as the market value of equity plus total assets minus the book value of equity divided by total assets. All results are qualitatively unchanged when using this q definition.

¹² [Schwert \(2000\)](#) reports that definitions of hostile could differ substantially across databases, and that SDC-identified hostile deals do not result in different bidder announcement period returns than friendly deals.

Table 2
Sample summary statistics

Panel A: target and deal characteristics	%				
Tender offer	15.65				
Target opposes deal (hostile)	4.98				
Target is public	37.88				
Target is subsidiary	50.40				
Target is private	8.99				
Target is government-owned	0.80				
Target is joint-ventures	1.93				
Target is in different 2-digit SIC	41.09				
Target is non-US	23.11				
Panel B: bidder characteristics	Mean	Median	Min	Max	<i>n</i>
Assets (× \$1 million)	3329.82	1187.49	61.54	41,140	620
Sales (× \$1 million)	2924.23	995.63	12.35	51,974	620
Deal value (× \$1 million)	305.43	110	10.00	9561	620
Relative size	0.37	0.09	0.01	43.11	620
Debt-to-equity	1.23	0.62	0.00	115.99	620
Tobin's <i>q</i>	1.58	1.34	0.43	8.49	569
Panel C: event-study returns (%)	Mean	Median	Min	Max	<i>n</i>
Market-and-risk-adjusted (− 1, + 1)	1.56***	0.62***	− 16.23	49.02	619
Market-adjusted (− 1, + 1)	1.55***	0.57***	− 18.34	47.19	620
Market-and-risk-adjusted (− 5, + 5)	1.33***	0.77***	− 35.57	47.35	617
Market-adjusted (− 5, + 5)	1.34***	0.48**	− 41.82	49.27	619

Data on target and deal characteristics is from the SDC database. Return data is from the CRSP database. Accounting data is from Compustat. Deal value is defined as the SDC market value of the deal. Relative size is defined as the deal value relative to the market value of assets of the acquirer. The debt-to-equity and debt-to-assets ratios are measured using book values of equity and debt in year (− 2). Tobin's *q* is calculated as the sum of the market value of equity, the liquidating value of preferred stock, the firm's short-term liabilities net of its short-term assets, and the book value of the firm's long-term debt, divided by the book value of total assets (see Chung and Pruitt, 1994). We report an average value of Tobin's *q* for the 3-year period prior to the takeover announcement. Market-and-risk-adjusted returns are calculated using alpha and beta estimated over the period from 205 to 5 days before the announcement of the takeover. Both market-and-risk-adjusted and market-adjusted returns use the CRSP equally weighted index as the market portfolio. Statistical significance 1%, 5%, and 10% level is indicated with ***, **, and *, respectively.

period beginning 205 days and ending 5 days prior to the announcement. Consistent with cash transactions conveying positive information about its equity value and consistent with prior findings (see, e.g., Travlos, 1987; Schwert, 2000), mean values of the abnormal returns are positive and significant for cash transactions (approximately 1.50%).

Tables 3 and 4 present statistics on the financing definitions. The values in Panel A are based on the financing definitions using the statement of cash flows. The mean and median value for free cash flow is approximately 10%. The average flow of equity is a little more than 2% of assets, but the median value is close to 0. Debt flows are 28% and 24% at the mean and the median, respectively.

Panel B reports the values from the previous panel on an industry-adjusted basis. Yearly 2-digit median values are subtracted from each raw number. On average, bidders

Table 3
Financing variables

	Mean	Median	Min	Max	<i>n</i>
<i>Panel A: income statement (flow)</i>					
Free cash flow	0.103	0.101	− 0.295	0.586	616
Equity flow	0.023	0.001	− 0.191	0.790	620
Debt flow	0.282	0.246	0.000	0.989	608
<i>Panel B: industry-adjusted (flow)</i>					
Industry-adjusted free cash flow	0.001	0.000	− 0.425	0.485	616
Industry-adjusted equity flow	0.018	− 0.001	− 0.380	0.786	620
Industry-adjusted debt flow	0.233	0.200	− 0.148	0.902	608
<i>Panel C: balance sheet</i>					
Newly retained earnings	0.031	0.030	− 0.641	0.786	619
Net equity issues	0.044	0.012	− 0.493	0.798	620
Net debt issues	0.137	0.094	− 0.558	0.931	618
<i>Panel D: SDC new issues</i>					
Equity issues	0.035	0.000	0.000	0.934	620
Repurchases	0.010	0.000	0.000	0.314	620
Net equity (issues-repurchases)	0.025	0.000	− 0.276	0.934	620
Debt issues	0.043	0.000	0.000	0.908	613

Free cash flow is operating income before depreciation minus interest expense on debt, income taxes, and preferred and common dividends (see [Lehn and Poulsen, 1989](#)). The flow of equity financing is the difference between the flows of the sale of common and preferred, the purchase of common and preferred stock, and the change in the liquidating value of preferred stock (see [Hovakimian et al., 2001](#)). Debt financing is the change in the sum of short- and long-term financing, where long-term debt financing is defined as the change in the balance sheet item long-term debt and short-term financing as the change in debt in current liabilities. Industry-adjusted financing flows are calculated as the difference between the unadjusted flow and the yearly 2-digit SIC-matched median value. Newly retained earnings are defined as the change in retained earnings from the balance sheet. Net equity issues are defined as the change in book equity minus the change in balance sheet retained earnings. Net debt issues are defined as the change in assets net of the book value of equity. Equity issues are from the SDC database and include all public and private issues of equity. Repurchases include both open-market repurchases and self-tender offers. Debt issues included all SDC listed issues of debt. All financing flows are measured during the fiscal year prior to the takeover announcement (− 1) and are normalized by the book value of the firm's assets (ASSETS) and measured in year (− 2).

experience above normal levels of debt and equity financing in the year before the takeover announcement.

Panel C reports financing variables using a balance sheet identity. The mean and median value for retained earnings is approximately 3%. The mean and median values of equity financing are 4% and 1%, respectively, of total assets. Net debt issues, defined as the change in equity net of the change in total equity, represent 13% and 9% at the mean and median level, respectively.

Finally, Panel D contains statistics based on data from the SDC database. In the sample of 623 acquisitions, 94 firms have an equity issue reported by SDC, 110 firms report a debt issue, and 81 firms had a share-repurchase or self-tender. The mean and median values of SDC-reported equity issues net of share repurchases are very similar to the values found from the Compustat database. The mean and median values for debt

Table 4
Correlation of financing variables

Panel A: cash	C_{BS}	IAC_{CF}			
C_{CF}	0.511 <i>0.001</i>	0.950 <i>0.001</i>			
C_{BS}		0.516 <i>0.001</i>			
Panel B: equity	E_{BS}	E_{SDC}	NE_{SDC}	R_{SDC}	IAE_{CF}
E_{CF}	0.801 <i>0.001</i>	0.365 <i>0.001</i>	0.358 <i>0.001</i>	− 0.091 <i>0.023</i>	0.985 <i>0.001</i>
E_{BS}		0.320 <i>0.001</i>	0.333 <i>0.001</i>	− 0.013 <i>0.740</i>	0.792 <i>0.001</i>
E_{SDC}			0.962 <i>0.001</i>	− 0.311 <i>0.001</i>	0.361 <i>0.001</i>
NE_{SDC}				− 0.040 <i>0.318</i>	0.354 <i>0.001</i>
R_{SDC}					− 0.089 <i>0.028</i>
Panel C: debt			D_{BS}	D_{SDC}	IAD_{CF}
D_{CF}			0.083 <i>0.040</i>	0.140 <i>0.001</i>	0.988 <i>0.001</i>
D_{BS}				0.046 <i>0.255</i>	0.071 <i>0.080</i>
D_{SDC}					0.131 <i>0.001</i>

The following variable abbreviations are used in the table. E , NE , R , and IAE denote, respectively, equity, equity issues minus share repurchases, repurchases, and industry-adjusted equity. C and IAC denote, respectively, internal cash flow and industry-adjusted internal cash flow. D and IAD denote debt and industry-adjusted debt, respectively. Subscripts CF , BS , and SDC refer the source of the data and denote, respectively, the cash flow statement, the balance sheet, and the SDC database. Cash flow statement and balance sheet numbers are from Compustat. The cells denote Pearson correlation coefficients with p -values in italics.

issues are substantially lower when measured from the SDC database, reflecting the possibility that many types of debt issues are not filed with the SEC or not reported in the SDC database.

Table 4 reports Pearson correlation coefficients for the different financing variables, grouped under internal, cash equity, and debt financing. The correlation between the balance sheet and statement of cash flow definition of internal financing is 0.511 and statistically significant at the 1% level. The correlation between balance sheet and statement of cash flow definitions of equity financing are much higher at 0.801. The correlation between SDC definitions of equity financing and Compustat definitions is more than 30% and significant at the 1% level. While marginally significant, the correlation between balance sheet and statement of cash flow definitions of debt financing is quite low. Similarly, definitions of debt from the Compustat database and the SDC database have relatively low correlation coefficients.

4. Results

4.1. Multivariate regression analysis

We use the abnormal announcement period return to proxy for the net present value of the takeover bid from the acquirer's shareholders perspective. The reported regression specifications use the market-model residuals cumulated over the $[-1, +1]$ as the dependent variable, but the results are robust to using the market-adjusted abnormal returns. The main variables of interest in this study are the various definitions of internal, equity, and debt financing. Each specification includes as number of control variables the debt-to-equity ratio measured 2 years prior to the takeover announcement, the relative transaction size, and dummy variables indicating whether the takeover is, respectively, a tender offer, hostile, involves a private target, or involves a non-US target.¹³ Year dummies are included in the model, yet not reported. Reported *p*-values are based on White's (1980) heteroscedasticity-consistent standard errors if homoscedasticity is rejected.

4.2. Results

Table 5 presents various specifications of the regression model. In model (1), we confirm the results in Lang et al. (1991) and find that free cash flow is negatively and significantly associated with bidder gains. Consistent with the pecking-order hypothesis, we find in model (2) that funds raised through equity issues are positively and significantly associated with bidder gains. Hence, some of the uncertainty about the firm's intention when it first issued the equity (i.e., exploiting overvaluation or funding investment opportunities) is resolved during the announcement of the takeover. Another interpretation is that investors expect a value-creating takeover if the firm has raised funds through a relatively expensive form of an equity issue. Model (3) shows that funds raised from debt issues are positively yet insignificantly associated with bidder gains. Models (4)–(6) confirm the results using industry-adjusted financing variables. Finally, models (7) and (8) show that the results are robust to including all three financing variables in one regression specification.

The only other variable that is consistently significant is the relative transaction size. Larger transactions will have more impact on the acquirer. The coefficients on each of the dummy variables are insignificant, except for the cross-border dummy variable in models (1) and (4). The negative sign on the cross-border dummy is consistent with Moeller and Schlingemann (2001). The coefficient on the private target dummy is negative, but insignificant. This is consistent with the findings in Chang (1998), who shows that bidder returns in stock transactions involving a private target are significantly higher than when a public target is involved, but for cash transactions, no significant effect is reported. Consistent with Schwert (2000), acquirers do not experience different announcement

¹³ While not reported, we have also run specifications adding a dummy variable for whether the target is within the same 2-digit SIC code as the acquirer, the natural logarithm of assets, and a market-to-book value of assets. The coefficient on the related industry dummy is insignificant and does not affect the other coefficients. The coefficient on the size and book-to-market variables are both positive, but insignificant and do not affect the other coefficients.

Table 5

Cross-sectional regression analysis: cash, equity, and debt flows

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	–0.006 0.823	–0.007 0.778	–0.017 0.509	–0.011 0.668	–0.007 0.780	–0.015 0.548	–0.007 0.768	–0.011 0.664
Free cash flow	–0.062** 0.034						–0.047** 0.041	
Equity flow		0.081*** 0.001					0.073*** 0.004	
Debt flow			0.012 0.346				0.002 0.898	
IA free cash flow				–0.061** 0.040				–0.052* 0.099
IA equity flow					0.073*** 0.004			0.065*** 0.009
IA debt flow						0.010 0.452		0.000 0.976
Debt-to-equity	0.000 0.658	0.000 0.445	0.000 0.634	0.000 0.640	0.000 0.452	0.000 0.602	0.000 0.633	0.000 0.626
Tender offer dummy	–0.010 0.186	–0.009 0.248	–0.009 0.246	–0.010 0.195	–0.008 0.264	–0.009 0.242	–0.007 0.310	–0.007 0.326
Relative value	0.009*** 0.001	0.009*** 0.001	0.010*** 0.001	0.009*** 0.001	0.009*** 0.001	0.010*** 0.001	0.009*** 0.001	0.009*** 0.001
Hostile dummy	0.008 0.302	0.004 0.567	0.008 0.280	0.007 0.332	0.004 0.591	0.008 0.289	0.007 0.345	0.007 0.372
Private dummy	–0.001 0.588	–0.002 0.441	–0.001 0.702	–0.001 0.579	–0.002 0.467	–0.001 0.714	–0.002 0.439	–0.002 0.458
CB dummy	–0.010* 0.094	–0.009 0.127	–0.009 0.139	–0.009* 0.098	–0.009 0.128	–0.009 0.132	–0.008 0.169	–0.008 0.173
Adj. R ² (%)	10.76	11.41	10.66	10.72	11.16	10.61	12.36	12.17
n	615	619	607	615	619	607	603	603

The dependent variable in the OLS regression is the 3-day market-adjusted return around the announcement of the takeover. See Tables 2 and 3 for data definitions of the independent variables. Statistical significance based on heteroscedasticity-consistent estimates at the 1%, 5%, and 10% level is indicated with ***, **, and *, respectively.

period returns in hostile transactions compared to friendly transactions. Also, the debt-to-equity ratio measured 2 years prior to the takeover announcement is insignificant in each specification.

Table 6 uses the equity issue data from the SDC database. Model (9) shows again that bidder gains are positively and significantly related to the net amount of equity financing taking place during the year before the takeover. The relation is no longer significant when share repurchases are ignored in the total amount of equity financing taking place [see model (10)]. As expected, share repurchases, including self-tenders, and bidder gains are negatively and significantly associated. One interpretation is that a firm repurchasing its own shares has excess cash and poor investment opportunities, and is therefore expected to make poor takeover decisions.

In summary, these results support the notion of the pecking order of financing. Particularly, the positive association between equity financing prior to a takeover announcement and bidder gains is consistent with the takeover announcement being

Table 6

Cross-sectional regression analysis: equity issues and share repurchases

Model	(9)	(10)	(11)
Intercept	– 0.008 0.751	– 0.008 0.740	– 0.008 0.739
Net equity issues	0.037** 0.032		
Equity issues		0.029 0.171	
Share repurchases			– 0.146** 0.042
Debt-to-equity	0.000 0.499	0.000 0.477	0.000 0.522
Tender offer dummy	– 0.009 0.213	– 0.009 0.216	– 0.011 0.146
Relative value	0.010*** 0.001	0.010*** 0.001	0.009*** 0.001
Hostile dummy	0.005 0.462	0.005 0.462	0.007 0.341
Private dummy	– 0.002 0.514	– 0.002 0.553	– 0.001 0.668
CB dummy	– 0.010 0.103	– 0.010 0.107	– 0.010* 0.077
Adj. R^2 (%)	10.39	10.15	10.49
n	615	619	619

The dependent variable in the OLS regression is the 3-day market-adjusted return around the announcement of the takeover. See Tables 2 and 3 for data definitions of the independent variables. Statistical significance based on heteroscedasticity-consistent estimates at the 1%, 5%, and 10% level is indicated with ***, **, and *, respectively.

interpreted by the market as a signal for a particularly profitable investment opportunity (see, e.g., Cooney and Kalay, 1993). In other words, the uncertainty surrounding a seasoned equity offering, overvaluation, or signal for a valuable investment opportunity is partially resolved at the announcement of the takeover. Using cash, the firm also avoids the same kind of uncertainty associated with using equity directly to pay for the takeover.

4.3. Investment opportunities

To test the free cash flow hypothesis—or overinvestment hypothesis—the issue of investment and growth opportunities needs to be considered. Specifically, we expect the aforementioned negative relation between free cash flow and bidder gains to be particularly pronounced for low q bidders. To the extent that q could be a measure of overvaluation instead of investment opportunities, high q values could also exacerbate the uncertainty about the motivation behind the equity issue. For example, Baker and Wurgler (2002) find that firms time their equity issues and hence are more likely to issue equity if their average q is high.¹⁴ High q bidders experience in that case a higher degree of uncertainty resolution when they announce a takeover succeeding the equity issue. Hence, under the argument that

¹⁴ For other evidence on firms issuing equity when their market values are high relative to their book values, see among others, Asquith and Mullins (1986), Jung et al. (1996), and Hovakimian et al. (2001).

Table 7

Cross-sectional regression analysis: growth opportunities

Model	(12)	(13)	(14)
Intercept	0.001 0.975	– 0.009 0.706	– 0.015 0.552
Free cash flow $\times$ low q	– 0.083** 0.021		
Free cash flow $\times$ high q	– 0.041 0.332		
Equity flow $\times$ low q		0.013 0.811	
Equity flow $\times$ high q		0.100*** 0.001	
Debt flow $\times$ low q			0.021 0.237
Debt flow $\times$ high q			– 0.015 0.786
Debt-to-equity	0.000 0.665	0.000 0.463	0.000 0.606
Tender offer dummy	– 0.009 0.205	– 0.009 0.225	– 0.008 0.274
Relative value	0.001*** 0.001	0.009*** 0.001	0.010*** 0.001
Hostile dummy	0.007 0.329	0.005 0.535	0.007 0.311
Private target dummy	– 0.002 0.556	– 0.002 0.518	– 0.001 0.666
Cross-border dummy	– 0.009 0.113	– 0.009 0.128	– 0.008 0.157
Low q dummy	0.008 0.407	0.002 0.652	– 0.007 0.439
Adj. R^2	10.62	11.43	10.45
n	615	619	607

The dependent variable in the OLS regression is the 3-day market-adjusted return around the announcement of the takeover. See Tables 2 and 3 for data definitions of the independent variables. Statistical significance based on heteroscedasticity-consistent estimates at the 1%, 5%, and 10% level is indicated with ***, **, and *, respectively.

the takeover resolves this uncertainty, the association between bidder gains and equity financing is expected to be particularly strong for high q bidders. Finally, if debt financing plays a monitoring role for firms with poor investment opportunities and reduces valuable managerial discretion for firms with good investment opportunities, one would expect bidder gains and debt financing to be positively related for low q firms and negatively for high q firms.

In Table 7, we interact each of the financing variables with a low q and high q dummy variable. Low and high q dummies are based on whether the bidder's 3-year pre-announcement average of q is above or below the mean sample value.¹⁵

¹⁵ Other cutoffs, like using a 1-year mean, using the median value, or using a value of 1 are used as well, but not reported. The results are robust to these different notions of high versus low q firms. While theoretically, a q of 1 should determine the cutoff, given that we calculate an empirical q here, each cutoff is as arbitrary as picking 1.

In regressions (12)–(14), the financing variables are interacted with, respectively, the low and high q dummy variables. Consistent with the predictions from the free cash flow hypothesis and reports discussed in Lang et al. (1991), we find that the negative association between bidder abnormal returns and free cash flow is particularly pronounced for firm with poor investment opportunities. For firms with good investment opportunities, as measured by above average levels of q , the relation between bidder gains and free cash flow is negative but insignificant.

The strong positive and significant relation between equity flows and bidder gains is primarily found for firm with good investment opportunities. Only for high q firms we find a positive and significant coefficient for the equity flow variable. The magnitude of the coefficient for high q bidder is approximately six times larger than the coefficient for low q firms. This is consistent with an equity issue being an incomplete signal of a potentially valuable investment opportunity. The takeover announcement works as a resolution of the uncertainty after the equity issue. While not reported, when the share repurchase variable is interacted with the low and high q dummy, we find that the association between equity flows from share repurchases and bidder gains is negative and significant for high q firms only as well.

The coefficient on the debt flow variable for, respectively, low and high q bidder is positive and negative, yet both are insignificant. Hence, the results provide only marginal support for a monitoring role of debt for low q bidders. Similarly, debt financing does not result in a decrease in valuable managerial discretion for high q bidders.

5. Conclusion

Prior literature has theorized and documented a relation between the form of *payment* and a bidder's abnormal announcement return. When considering pure cash transactions, however, the actual source of the cash available for an investment—the *financing* decision—has largely been ignored as an explanatory variable in valuing managerial takeover decisions. This paper analyzes the relation between the source of the firm's funds available for the acquisition to bidder gains. It is shown that, holding the form of payment constant, prior financing decisions are a significant factor in explaining the cross section of bidder returns.

The paper addresses two nonmutually exclusive hypotheses that link corporate financing decisions with corporate investment decisions. First, following the pecking-order hypothesis and models by Myers and Majluf (1984) and Cooney and Kalay (1993), firms would issue equity only for particularly profitable investments or not at all given the high adverse selection and other costs associated with equity financing. Market timing theories argue that firms issue equity to take advantage of high current equity values. We argue that the takeover announcement resolves some of the uncertainty on the motivation behind a firm's decision to issue equity. This would predict a positive relation between equity financing and bidder gains. This relation would be especially strong for firms that are expected to have timed the market. Second, the free cash flow or overinvestment hypothesis predicts that managers are more likely to waste cash on unprofitable projects for higher levels of managerial discretion over cash flows. This predicts that particularly

for firm with poor investment opportunities, levels of free cash flow and bidder gains are negatively associated.

The main findings of this study are summarized below. Bidder gains are positively and significantly related to the level of equity financing during the fiscal year preceding the takeover announcement. This relation is particularly pronounced for high q bidders. These results support the idea that a takeover announcement serves as a resolution of uncertainty associated with the firm's decision to issue equity. Consistent with the free cash flow hypothesis and the findings of [Lang et al. \(1991\)](#), we find negative and significant relation between internally generated free cash flows and bidder gains for low q bidders, but an insignificant relation for high q bidders. We do not find a significant relation between the amount of cash raised from debt financing and bidder gains. This is consistent with the notion that debt could serve a monitoring role as well as a restricting role in managerial discretion depending on the firm's investment opportunities.

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References

- Amihud, Y., Lev, B., Travlos, N.G., 1990. Corporate control and the choice of investment financing: the case of corporate acquisitions. *Journal of Finance* 55, 603–616.
- Asquith, P., Mullins, D.W., 1986. Equity issues and offering dilution. *Journal of Financial Economics* 15, 61–89.
- Asquith, P., Bruner, R., Mullins, D.W., 1987. Merger returns and the form of financing. Working Paper Harvard University.
- Baker, M., Wurgler, J., 2002. Market timing and capital structure. *Journal of Finance* 57 (1), 1–32.
- Berkovitch, E., Narayanan, M.P., 1990. Competition and the medium of exchange in takeovers. *Review of Financial Studies* 3, 153–174.
- Brunner, R.F., 1988. The use of excess cash and debt capacity as a motive for merger. *Journal of Financial and Quantitative Analysis* 23, 199–219.
- Chang, S., 1998. Takeovers of privately held targets, methods of payment, and bidder returns. *Journal of Finance* 53 (2), 773–784.
- Chung, K.H., Pruitt, S.W., 1994. A simple approximation of Tobin's q . *Financial Management* 23, 70–74.
- Cooney Jr., J.W., Kalay, A., 1993. Positive information from equity issue announcements. *Journal of Financial Economics* 33, 149–172.
- Eckbo, B.E., Giammarino, R.M., Heinkel, R.L., 1990. Asymmetric information and the medium of exchange in takeovers, theory and test. *Review of Financial Studies* 3, 651–675.
- Fishman, M.J., 1989. Preemptive bidding and the role of the medium of exchange in acquisitions. *Journal of Finance* 44, 41–57.
- Franks, J.R., Harris, R.S., Mayer, C., 1988. Means of payment in takeovers: results for the UK and US. In:

- Wruck, K.H. (Ed.), *Corporate Takeovers: Causes and Consequences*. NBER University of Chicago Press, Chicago, IL, pp. 221–258.
- Hansen, R.G., 1987. A theory for the choice of exchange medium in mergers and acquisitions. *Journal of Business* 60, 75–95.
- Harford, J., 1999. Corporate cash reserves and acquisitions. *Journal of Finance*, 54.
- Hertzel, M.G., Smith, R.L., 1993. Market discounts and shareholder gains for placing equity privately. *Journal of Finance* 48 (2), 459–485.
- Hovakimian, A., Opler, T., Titman, S., 2001. The debt-equity choice. *Journal of Financial and Quantitative Analysis* 36 (1), 1–24.
- Jensen, M.C., 1986. Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review* 76, 323–329.
- Jung, K., Kim, Y., Stulz, R.M., 1996. Timing, investment opportunities, managerial discretion, and the security issue decision. *Journal of Financial Economics* 42, 159–185.
- Kato, K., Schallheim, J., 1993. Private equity financings in Japan and corporate grouping (Keiretsu). *Pacific-Basin Finance Journal* 1 (3), 287–307.
- Lang, L.H.P., Stulz, R.M., Walkling, R.A., 1989. Managerial performance, Tobin's q , and the gains from successful tender offers. *Journal of Financial Economics* 24, 137–154.
- Lang, L.H.P., Stulz, R.M., Walkling, R.A., 1991. A test of the free cash flow hypothesis: the case of bidder returns. *Journal of Financial Economics* 29 (2), 315–336.
- Lehn, K., Poulsen, A., 1989. Free cash flow and stockholder gains in going private transactions. *Journal of Finance* 44, 771–787.
- Maloney, M.T., McCormick, R.E., Mitchell, M.L., 1993. Managerial decision making and capital structure. *Journal of Business* 66, 189–217.
- Martin, K.J., 1996. The method of payment in corporate acquisitions, investment opportunities, and management ownership. *Journal of Finance* 51, 1227–1246.
- McConnell, J.J., Muscarella, C.J., 1985. Corporate capital expenditure decisions and the market value of the firm. *Journal of Financial Economics* 14, 399–422.
- Miller, M.H., Modigliani, F., 1958. The cost of capital, corporation finance, and the theory of investment. *American Economic Review* 48, 261–297.
- Moeller, S.B., Schlingemann, F.P., 2001. External growth of U.S. corporations: a comparison between cross-border and domestic acquisitions. Working Paper University of Pittsburgh.
- Myers, S.C., 1977. Determinants of corporate borrowing. *Journal of Financial Economics* 5, 147–175.
- Myers, S.C., Majluf, N.S., 1984. Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 187–221.
- Opler, T.C., Pinkowitz, L.F., Stulz, R.M., Williamson, R., 1999. The determinants and implications of corporate holdings of liquid assets. *Journal of Financial Economics* 52, 3–46.
- Roll, R., 1986. The hubris hypothesis of corporate takeovers. *Journal of Business* 59, 197–216.
- Schwert, G.W., 2000. Hostility in takeover: in the eyes of the beholder? *Journal of Finance* 55 (6), 2599–2640.
- Servaes, H., 1991. Tobin's q , agency costs and corporate control: an empirical analysis of firm-specific parameters. *Journal of Finance* 46, 409–419.
- Smith Jr., C.W., 1986. Investment banking and the capital acquisition process. *Journal of Financial Economics* 15, 3–29.
- Smith, R.L., Kim, J.H., 1994. The combined effects of free cash flow and financial slack on bidder and target returns. *Journal of Business* 67, 281–310.
- Stulz, R.M., 1990. Managerial discretion and optimal financing policies. *Journal of Financial Economics* 26, 3–27.
- Travlos, N.G., 1987. Corporate takeover bids, method of payment, and bidding firm's stock returns. *Journal of Finance* 52, 943–963.
- Wansley, J.W., Lane, W.R., Yang, H.C., 1983. Abnormal returns to acquired firms by type of acquisition and method of payment. *Financial Management* 12 (3), 16–22.
- White, H., 1980. A heteroscedasticity-consistent covariance matrix estimator and a direct test for heteroscedasticity. *Econometrica* 48, 817–838.
- Wruck, K.H., 1989. Equity ownership concentration and firm value: evidence from private equity financings. *Journal of Financial Economics* 23, 3–28.