

# The choice of payment method in European mergers & acquisitions

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## **Abstract**

We study merger and acquisition (M&A) payment choices of European bidders for publicly and privately held targets in the 1997-2000 period. Europe is an ideal venue for studying the importance of corporate governance in making M&A payment choices, given the large number of closely held firms, and the wide range of capital markets, institutional settings, laws and regulations. The tradeoff between corporate governance concerns and debt financing constraints is found to have a large bearing on the bidder's payment choice. Consistent with earlier evidence, we find that several deal and target characteristics significantly affect the method of payment choice.

## **Introduction**

Global M&A activity has grown dramatically over the last ten years, bringing with it major changes in the organization and control of economic activity around the world. Yet, there is much about the M&A process that we do not fully understand, including the choice of payment method. Given the large size of many M&A transactions, the financing decision can have a significant impact on an acquirer's ownership structure, financial leverage, and subsequent financing decisions. The financing decision can also have serious corporate control, risk bearing, tax and cash flow implications for the buying and selling firms and shareholders. In this study, we examine the choice of payment method and its determinants across a large sample of European M&A transactions.

While most M&A research is based on US transactions, focusing on U.S. data has the disadvantage of holding many institutional factors relatively fixed. By studying merger activity across a broad sample of European bidders, we are better able to evaluate the importance of a wide range of ownership structures, corporate governance rules, corporate laws, securities regulations and market conditions, which is not possible with U.S. data. With respect to ownership concentration, Faccio and Lang (2002) document that 63 percent of their sample of listed firms across 13 Western European countries have a single large shareholder, who directly or indirectly controls at least 20 percent of their votes. This is in sharp contrast to the U.S. where only 28 percent of listed US corporations have a large shareholder who controls 20 percent or more of its votes.<sup>1</sup> Moreover, European stock markets operate under significantly different rules and regulations, have more variable trading activity and exhibit widely varying industry concentration levels compared to the US.

Unlike most earlier studies, our primary focus is on the relative importance of threats to bidder corporate control and to its financial strength when choosing the form of M&A consideration. In making an M&A currency decision, a bidder is faced with a choice between using cash and stock as deal consideration, which have conflicting effects. Given that most bidders have limited cash and liquid assets, cash offers generally require debt financing.<sup>2</sup> As a consequence, a bidder implicitly faces a choice of debt or equity financing, which involves a tradeoff between corporate control concerns of issuing

equity and rising financial distress costs of issuing debt. Thus, a bidder's M&A currency decision can be strongly influenced by its debt capacity and existing leverage. It can also be strongly influenced by management's desire to maintain the existing corporate governance structure. In contrast, a seller can be faced with a tradeoff between the tax benefits of stock and the liquidity and risk minimizing benefits of cash consideration. For example, sellers may be willing to accept stock if they have a low tax basis in the target stock and can defer their tax liabilities by accepting bidder stock as payment. On the other hand, sellers can prefer cash consideration to side step the risk of becoming a minority shareholder in a bidder with concentrated ownership, thereby avoiding the associated moral hazard problems. Unfortunately, due to data limitations, this seller trade off can not be easily measured.

Looking more carefully at a bidder's financing choice, it is clear that its corporate governance structure can be seriously impacted by the choice of merger currency, since stock issuance dilutes a dominant shareholder's voting power. If preserving control is important to bidder management, then they have incentives to select cash financing over stock financing, especially under circumstances where continued corporate control is threatened (for example, see Shleifer and Vishny (2003) for a discussion of control benefits). The corporate control incentives to choose cash are likely to be strongest when a target's share ownership is concentrated and a bidder's largest shareholder has an intermediate level of voting power in the range of 20 to 60 percent; a range where she is most vulnerable to a loss of control under a stock financed acquisition. These incentives diminish if a bidder or target is diffusely owned, since the bidder's controlling block is not threatened. On the other hand, when a shareholder has supermajority voting rights, stock financing is unlikely to threaten her continued control. In this case any reluctance to issue stock in an acquisition is greatly weakened. These predictions are in the spirit of the Harris and Raviv (1988) and Stulz (1988) models, which show that managers with significant ownership positions are reluctant to seriously dilute their voting power and risk loss of control by issuing stock.

Under existing theories of capital structure, debt capacity is a positive function of tangible assets, earnings growth and asset diversification and a negative function of asset volatility (Hovakimian, Opler and Titman, 2001). Firms with greater tangible assets can borrow more privately from banks and publicly

in the bond market. Since larger firms are generally more diversified, we expect them to have a lower probability of bankruptcy at a given leverage ratio and thus, greater debt capacity. These financing constraint and bankruptcy risk considerations can also reduce a lenders willingness to finance a bidder's cash bid, especially in relatively large deals.

In section I we review the theories and evidence concerning M&A financing decisions, while in section II we document data sources and present descriptive statistics on deal, bidder and target characteristics by type of M&A financing decision. After reviewing the methodologies we use, we present and interpret our empirical findings on the determinants of the M&A financing choice and explore the robustness of these results. The last section summarizes our empirical findings and conclusions.

## **I. Hypotheses and Predictions Derived from the Prior Literature**

### **A. Literature Review**

A number of earlier studies have analyzed M&A financing decisions. Hansen (1987), Stulz (1988) and Fishman (1989) develop theories of acquisition payment choice based on asymmetric information and the threat of competitive bidding.<sup>3</sup> Of these theories, only Stulz focuses primarily on corporate control concerns. He posits that M&A financing decisions are affected by management's desire to maintain corporate control and garner continued personal benefits. Managers have incentives to maintain or increase their voting power since the probability of a change in control rises as their fractional voting power falls. Stulz observes that while managers' wealth constrains their shareholdings, growing firms can rely on debt financing to maintain managements' ownership level and voting power. However, risk-averse managers bear greater portfolio risk as increasing debt raises their stock risk. This manager trade-off results in an optimal debt level for a firm and an optimal manager investment in shares, which generally precludes the corner solution of managers of growing firms preserving their majority control through continued debt financing.

Amihud, Lev and Travlos (1990), Martin (1996) and Ghosh and Ruland (1998) empirically study the determinants of M&A payment method and investigate the importance of buyer management

stockholdings on US acquisitions over the 1978-1988 period. All three studies conclude that buyer management shareholdings have a negative effect on stock financing, consistent with a corporate control motive. Amihud, Lev and Travlos report the results of an early test of the Stulz (1988) theory where they estimate a probit regression to explain the choice of stock versus cash financed acquisitions as a function of officer and director share ownership, and target size. They find manager share ownership measures have a significant negative relationship to stock financing. However, there are few statistical controls for differences in deal characteristics across the sample.

Similar to the Amihud, Lev and Travlos study, the Ghosh and Ruland analysis covers large deals involving publicly listed targets.<sup>4</sup> Only the Martin study includes privately held targets. However, his analysis does not differentiate between them and public targets. Using a sample of 846 completed acquisitions of public and private firms by NYSE and AMEX listed buyers, Martin reports that high buyer stock ownership lead to more stock financing, while an intermediate range of shareholdings by buyer managers reduce stock financing.<sup>5</sup>

Most of the early empirical literature on M&A financing decisions concentrates on the market reactions to their announcement, with the determinants of these financing decisions generally given limited attention. For acquisitions of publicly traded targets, Travlos (1987), Wansley, Lane and Yang (1987), Amihud, Lev and Travlos (1990), Servaes (1991), and Brown and Ryngaert (1991) document significant negative average announcement returns to acquirers when the method of payment is stock rather than cash. One dominant explanation for this pattern is that stock financing creates an adverse selection effect similar to a seasoned stock offering. A potential concern with these studies is that none of them controls for endogeneity in the financing decision when measuring announcement effects. In this regard, this study develops a predictive model that enables researchers to better control for endogeneity or market expectations of these financing decisions.

## **B. Hypotheses Explaining M&A Financing Decisions and their Empirical Predictions**

Following Martin (1996) we classify the form of M&A payment into cash and stock where “cash payments” are defined to include cash, non-contingent liabilities and newly issued notes and “stock” is defined as shares with full voting rights or inferior voting rights.<sup>6</sup> We take two approaches to analyzing the method of payment decision. First, we measure the proportion of cash and stock in each deal. The variables PERCENT CASH and PERCENT STOCK measure these proportions. Second, we classify deals into those containing only cash (CASH ONLY), only stocks (STOCK ONLY), or a mixture of cash and stocks (MIXED PYMT).

In assessing potential determinants of an M&A payment method, our focus is on a bidder’s M&A financing choices, recognizing that targets can also influence the final terms of an M&A deal. However, if a target’s financing choice is unacceptable to the bidder, then the proposed M&A transaction is likely to be aborted or else the bidder can make a hostile offer on its own terms. For a deal to succeed, the bidder must be satisfied with the financial structure of the deal. Moreover, a bidder can have strong preferences toward one financial structure over another because of control threats to its dominant shareholders, its unused debt capacity and available liquid assets, which together determine a deal’s financial feasibility and attractiveness to the bidder and target. Several other proxies and control variables are discussed later in the sensitivity analysis section.

### **Bidder and Target Considerations:**

#### *B1. Corporate Control*

Bidders controlled by a major shareholder should be reluctant to use stock financing when this causes the controlling shareholder to risk losing control (Amihud, Lev, and Travlos, 1990, Stulz, 1988, Jung, Kim and Stulz, 1996). Assuming control is valuable,<sup>7</sup> the presence of dominant shareholder positions should be associated with more frequent use of cash, especially when the controlling shareholder’s position is threatened. To capture this effect, we use the ultimate *voting* stake held by the largest controlling shareholder (CONTROL). For example, if a family owns 50% of Firm X that owns

20% of Firm Y, then this family controls 20% of Firm Y (the weakest link in the chain of control). If we create a pyramid where the family also owns 50% of Firm Z that also owns a 40% of Firm Y, then the family owns 60% of Firm Y (the sum of the weakest links in the two chains of control). This variable comes from Faccio and Lang (2002), and captures the effects of complex control structures.

A bidder with diffuse or highly concentrated ownership is less likely to be concerned with corporate control issues. In line with this argument, Martin (1996) documents a significantly negative relationship between the likelihood of stock financing and managerial ownership only over the intermediate ownership range. Similar evidence is reported in Ghosh and Ruland (1998). Therefore, we incorporate the possibility of a non-linear relationship between the method of payment and the voting rights of a bidder's controlling shareholder by estimating both a linear and cubic specification for the ultimate voting control percentage of the bidder's largest shareholder. In our robustness analysis, we also estimate a spline function for this variable.

Corporate control concerns in M&A activity can manifest themselves in more subtle ways. Concentrated ownership of a target means that a stock financed acquisition can create a large blockholder, threatening the corporate governance of the acquirer. If the seller is closely held or is a corporation disposing of a division, then ownership concentration tends to be very concentrated. This implies that financing the M&A deal with stock can create a new blockholder in the bidder. While the risk of creating a new bidder blockholder with stock financing is higher when a target has a concentrated ownership structure, this is especially true when relative size of the deal is large. To capture the risk of creating a large blockholder when buying a target with stock financing, we employ CONTROL LOSS, the product between the target's control block and the deal's relative size. The relative deal size is computed as the ratio of offer size (excluding assumed liabilities) to the sum of a bidder's equity pre-offer capitalization plus the offer size. The target's controlling blockholder is assumed to have 100% ownership for unlisted targets and subsidiary targets. For listed targets, we determine the pre-acquisition control structure of the target using the sources listed in Appendix B.



## *B2. Collateral, Financial Leverage and Debt Capacity*

We use the fraction of tangible assets as our primary measure of a bidder's ability to pay cash, financed from additional borrowing. COLLATERAL is measured by the ratio of property, plant and equipment (PPE) to book value of total assets at the year end prior to the bid. Myers (1977) argues that debtholders in firms with fewer tangible assets and more growth opportunities are subject to greater moral hazard risk, which increases the cost of debt, often making stock more attractive. Hovakimian, Opler and Titman (2001) find that a firm's percentage of tangible assets has a strong positive influence on its debt level.

We also control for a bidder's financial condition with its leverage ratio, FIN'L LEVERAGE. Since cash is primarily obtained by issuing new debt, highly levered bidders are constrained in their ability to issue debt and as a consequence use stock financing more frequently. A bidder's financial leverage is measured by the sum of the bidder's face value of debt prior to the M&A announcement plus the deal value (including assumed liabilities) divided by the sum of the book value of total assets prior to the announcement plus the deal value (including assumed liabilities). This captures the bidder's post-deal leverage if the transaction is debt financed. This measure differs from Martin (1996) who uses a pre-deal bidder leverage measure adjusted for an industry mean and reports an insignificant effect.

Companies may establish connections with banks through cross ownership of stock or through interlocking directorships (which are in fact much less restricted than stock ownership in our countries). As in the case of group affiliation, these interlocking directors may facilitate easier access to debt financing. We therefore build an indicator variable, INTERLOCK, which takes the value of one if a top bidder director (CEO, president, vice-president, or secretary) is a director of a bank, and is zero otherwise.<sup>8</sup>

Bidder size is likely to influence its financing choices. Larger firms are more diversified and thus, have proportionally lower expected bankruptcy costs. They also have lower flotation costs and are likely to have better access to debt markets, making debt financing more readily available. Thus, cash financing should be more feasible in the case of larger firms. Larger firms are also more apt to choose cash

financing in smaller deals due to its ease of use, provided they have sufficient unused debt capacity or liquid assets. Further, the use of cash allows the bidder to avoid the significant costs of obtaining shareholder approval of pre-emptive rights exemptions and stock authorizations and the higher regulatory costs of stock offers. We measure bidder asset size by the log of pre-merger book value of assets in dollars (TOTAL ASSETS). In addition to bidder control and financing considerations, we need to take into account several other bidder characteristics.

### *B3. Relative Deal Size, Bidder Stock Price Runup and Asymmetric Information*

Hansen (1987) predicts that bidders have greater incentives to finance with stock when the asymmetric information about target assets is high.<sup>9</sup> This information asymmetry is likely to rise as target assets rise in value relative to those of a bidder. Yet, when stock is used in relatively larger deals, it produces more serious dilution of a dominant shareholder's control position. Finally, as bidder equity capitalization rises, concern about its financing constraint falls, since there is a relatively smaller impact on its overall financial condition. We proxy for these effects with REL SIZE, which is computed as the ratio of deal offer size (excluding assumed liabilities) divided by the sum of the deal's offer size plus the bidder's pre-offer market capitalization at the year-end prior to the bid.<sup>10</sup>

Both Myers and Majluf (1984) and Hansen (1987) predict that bidders will prefer to finance with stock when they consider their stock overvalued by the market and prefer to finance with cash when they consider their stock undervalued. As uncertainty about bidder asset value rises, this adverse selection effect is exacerbated. Korajczyk, Lucas, and MacDonald (1991) argue that new stock investors bear greater adverse selection risk after stock runups. Finally, if a bidder has recently experienced a sizable stock price gain, then its existing shareholders experience lower dilution of their voting power when stock financing is employed. Martin (1996) finds evidence consistent with this adverse selection prediction. For a sample of publicly traded targets, Travlos (1987) finds that stock financed M&A deals exhibit much larger negative announcement effects than cash financed deals. He concludes this is consistent with the empirical validity of an adverse selection effect. We use as a proxy for bidder overvaluation (or

undervaluation), RUNUP, calculated from a bidder's buy and hold cumulative stock return over the year preceding the M&A announcement month.

In addition to bidder considerations, we need to take into account typical target considerations. These preferences are related to risk, liquidity, asymmetric information and home bias.

#### *T1. Unlisted Targets and Subsidiary Targets*

We use an indicator variable, UNLISTED TARGET, to control for listing status where the variable takes a value of one if the target is a stand-alone company, not listed on any stock exchange and is zero for listed targets and unlisted subsidiaries. When an M&A deal involves an unlisted target, a seller's consumption/liquidity needs are also likely to be important considerations. These sellers are likely to prefer cash given the illiquid and concentrated nature of their portfolio holdings and the often impending retirement of a controlling shareholder-manager. Likewise, corporations selling subsidiaries are often motivated by financial distress concerns or a desire to restructure toward their core competency. In either case, there is a strong preference for cash consideration to realize these financial or asset restructuring goals. A likely consequence is a greater use of cash in such deals, since bidders are frequently motivated to divest subsidiaries to finance new acquisitions or reduce their debt burden. SUBSIDIARY is an indicator that equals one when the (unlisted) target is a subsidiary of another firm, and equals zero otherwise. As noted earlier, these two target ownership structures are also likely to elicit bidder corporate control concerns given their concentrated ownership. Thus, bidders are likely to prefer cash financing of such deals, especially as they become relatively large.

#### *T2. Cross-Industry Deals and Asymmetric Information*

Seller reluctance to accept bidder stock as payment should rise as the asymmetric information problem worsens with greater uncertainty about bidder equity value and future earnings. This problem is also likely to be more serious for conglomerate mergers. In contrast, sellers are more apt to accept a continuing equity position in an intra-industry merger, where they are well acquainted with industry risks and prospects. Therefore, we employ INTRA-INDUSTRY, a dummy that equals one if bidder and target are in the same industry (the primary three digit SIC codes coincide) and is zero otherwise.

### *T3. Cross-Border Deals, Local Exchange Listing and Home Bias*

In cross border deals, selling stock to foreign investors can entail several problems. We are concerned with the possibility that investors have a home country bias in their portfolio decisions as documented in Coval and Moskowitz (1999), French and Poterba (1991) and Grinblatt and Keloharju (2001), among others. This can reflect a foreign stock's greater trading costs, lower liquidity, exposure to exchange risk and less timely, more limited access to firm information. These considerations lower seller demand for bidder stock. We define CROSS BORDER, as an indicator variable that equals one if bidder and target countries differ and is zero otherwise.

### *T4. Bidder Investment Opportunities*

High growth bidders can make an attractive equity investment for selling shareholders. MKT-TO-BOOK, defined as a market value of equity plus book value of debt over the sum of book value of equity plus book value of debt prior to the bid, measures a bidder's investment in growth opportunities. We expect a higher market to book ratio to increase a bidder stock's attractiveness as M&A consideration. High market to book is also correlated with high levels of tax deductible R&D expenditures, along with low current earnings and cash dividends. These firm attributes lower a bidder's need for additional debt tax shield, making cash financing less attractive. These attributes are also attractive to high income bracket sellers due to their tax benefits. Jung, Kim and Stulz (1996) document a higher incidence of stock financing for higher market to book buyers.

## **II. Data and Descriptive Statistics**

The initial sample includes all acquisitions announced over the four years between January 1997 and December 2000 by bidders from 13 European countries: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland, and the UK. Announcements must be reported in *Thomson Financial Securities Data's SDC, "Worldwide Mergers & Acquisitions Database"*. This database covers public and private corporate transactions involving acquisition of at least 5% ownership of a target company.

All mergers and acquisitions must satisfy the following screening criteria. First, bidders need to be incorporated and listed on a stock market in one of the above listed major European countries. No restriction is imposed on a target's country of incorporation, its listing status, or the bid's outcome (i.e. both successful and unsuccessful bids are included). We use *SDC* to collect the two M&A partners' identities, country, industry (3 digit SIC code) and determine whether their stocks are publicly listed, the deal's initial announcement date, dollar value, method of payment, legal form, and whether it is friendly or hostile. After this initial screening, we have complete information for 9,935 M&A announcements. Data on method of payment is hand collected based on descriptive information reported in *SDC*, rather than relying on *SDC*'s method of payment variable because we found frequent inconsistencies between the two data fields.

Second, to be included in the sample a bidder's financial accounting statements for the year-end prior to the offer must be reported in *Worldscope*. Although *SDC* provides data fields for bidder and target accounting information, it is often missing for European bidders. Third, bidder stock price data at the year end prior to the announcement must be available in *Datastream*. This data is used in constructing our measures of market valuation, stock risk, return, and liquidity. Fourth, bidder stock ownership and voting control data must be available. Stock ownership and voting control data are taken from Faccio and Lang (2002).<sup>11</sup> In order to minimize the loss of observations from merging these databases, Lexis–Nexis, Extel Financial and *Worldscope* are used to identify company name changes. There are 4,342 observations where bidder names can be matched across all four datasets.

We also require all M&A deals to be financed with cash, stocks, or a combination of cash and stock. After excluding 478 deals with earnouts,<sup>12</sup> we are left with 3,864 observations. We then exclude deals where the target nation places restrictions on foreign equity investments by domestic investors. This restriction only applies to a small sample of cross border deals in certain nations for some years. After all these exclusion, we are left with 3,667 observations by 1,349 bidders in our final sample. There are 741 firms making multiple bids where the frequency distribution is 274 firms making two bids, 163 making three bids, 102 making four bids, and 202 firms making 5 bids or more.

[Table I goes here]

As seen in Table I, a large majority of deals involve UK bidders (65.3%). We have relatively few (i.e., less than 60) announcements by bidders incorporated in Switzerland, Belgium, Portugal and Austria. Although targets may be from any country, UK targets represent the largest group in our sample (47.0% of all targets). Similarly, targets incorporated in our 13 bidder countries represent 77% of the sample. US firms represent the largest fraction of the non-European targets (12.4%).

[Table II goes here]

Table II presents descriptive statistics when deals are classified by financing method. Panel A shows that most European bids are entirely cash financed. Specifically, our M&A sample contains 2,942 (80%) pure cash deals, 416 (8.4%) mix of cash and stock deals and 309 (11.3%) pure stock deals. Mixed currency payments of cash and stocks on average contain a higher proportion of cash (56.9%) than stock (43.1%). In contrast, Andrade, Mitchell and Stafford (2001) report that 70% of M&A transactions by US firms in the 1990s involve stock financing, with 58% entirely stock financed.

The proportion of “all cash” deals is highest in Austria (100%) and Portugal (90%), and lowest in the Scandinavian nations of Finland (66%) and Norway (69%). Cash financing is predominant across all countries, and more common than is suggested in previous European M&A studies. For example, Eckbo and Langohr (1989) report in a study of 306 tender offers for publicly traded French targets that over the period 1966-1982, 25% were at least partially stock financed. In our sample of French acquisitions, we find that only 21% of deals include at least some stocks. Of course our sample is not limited to publicly traded targets or tender offers, which is a likely source of the difference. Our evidence contrasts sharply with a previous study by Franks, Harris and Mayer (1988) who report that during 1955-85, 66% of UK M&A deals included at least some stock in its method of payment. Zhang (2003) reports that 63% of M&A deals completed over 1990-99 where bidder and target are London Stock Exchange listed include at least some stock payment. In contrast, for our sample of 2,394 UK acquisitions, only 20% of these deals involve some stock payment. However, both of these earlier studies of UK acquisitions are restricted to listed targets, which are more likely to use stock financed deals. When comparing the

frequency of payment types by listed targets, unlisted and subsidiary targets, we find that the frequency of cash deals is much lower for listed targets (60%), while the frequency of stock or mixed deals is much larger (40%). Unlisted and subsidiary targets exhibit substantially lower levels of stock or mixed financing (20% and 10%, respectively).

Table II also shows that on average a bidder's largest blockholder ultimately controls 22% of its voting rights. This figure is substantially lower than that previously documented in Faccio and Lang (2002). One possible explanation for the difference is that bidders tend to be relatively large companies, which have a significantly more widely dispersed ownership. We explore this issue in the last part of our study. We also have a relatively large proportion of UK firms, which happen to have more widespread ownership than continental European companies. The countries with largest average level of dominant shareholder voting control are Austria (43%), Italy (40%), Portugal (36%) and Finland (36%) and the lowest are Ireland (19%) and the UK (18%).

The corporate ownership structure of our bidders is in sharp contrast to previous US studies. Martin (1996) documents an average ownership level of 11% by all bidder officers and directors (including stock options). Ghosh and Ruland (1998) report average share ownership of 10.5% by all acquirer officers, directors and insiders. One reason for the smaller ownership level reported in these studies is that they focus on all directors, while we focus only on the dominant shareholder, who may or may not be a director.

Table II, Panel B indicates that bidder, target, and deal specific attributes are quite different across method of payment categories. Bidders whose largest shareholder has voting power in the 20 to 60% range are more common in stock financed deals (33% of cases), while in mixed deals they are least common (25% of cases). This is surprising, given that stock financing is more likely to threaten the voting control of the dominant shareholder in the 20 to 60% range. However, cash financed deals are substantially smaller in size relative to bidder equity capitalization than either stock or mixed deals, which suggest a financial motive for the currency choice. The CONTROL LOSS variable is highest in mixed

(11.5%), and second highest in stock financed M&As (8.5%). This result also may be due to the larger relative size of stock deals.

Bidders in cash financed deals have the highest percentage of collateral (38%); while bidders in stock financed deals have the lowest percentage of collateral (27%), and mixed deals have an intermediate level (31%). Financially constrained bidders choose stock financed deals more frequently. For 18% of all cash deals, a top director in the bidder is also a director of an affiliated bank; for mixed deals this figure is similar (19%), but for all stock deals it is substantially lower (11%). Bidders making “pure cash” acquisitions have larger total assets than bidders in pure stock financed deals.

Average deal size (DEAL VALUE) for pure stock financed deals is dramatically larger than that for pure cash financed deals (i.e. 17 times larger); with the average mixed deal being of an intermediate size. The average size of a target relative to the bidder (REL SIZE) is highest for pure stock deals (18%) and lowest for pure cash deals (7%). The relative size of mixed deals averages 16%. Bidder stock price runup in the year prior to deal announcement (RUNUP) is highest for all equity deals and lowest for all cash deals. Consistent with our earlier analysis, the likelihood of a bidder and target being in the same industry (INTRA-INDUSTRY) is highest for pure stock deals and lowest for pure cash deals. Cross border transactions (CROSS BORDER) are more common in cash only deals (45%) than in stock only deals (31%) or mixed deals (22%). Mixed deals are more likely to involve free-standing unlisted targets (62% of cases) than all cash deals (47%) or all stock deals (30%). All cash deals are more likely to involve subsidiaries (41% of cases) than all stock deals (19%) or mixed deals (19%). The bidder’s market to book ratio and its stock return’s standard deviation are highest for stock only deals and lowest for cash only transactions.

Table II, Panel B also shows that deals announced by UK and Irish bidders are substantially different from those announced by continental European bidders in terms of their corporate control structures, their potential borrowing capacity, as well as a number of other deal specific and target specific variables. While the above descriptive analysis is supportive of the empirical relevance of our



previously proposed explanatory variables, a proper assessment of their marginal effects on M&A payment form requires more detailed multivariate analysis.

### III. Methodology and Empirical Evidence

#### A. Tobit Regressions

Since our dependent variable is the cash portion of the M&A consideration, which must by definition be in the interval  $[0, 100]$ , we use a two-boundary Tobit estimator.<sup>13</sup> In our estimation, we employ a general model of the form:

$$y_i^* = x_i' \beta + u_i \quad (1)$$

where  $u_i$  is an independently distributed error term assumed to be normal with zero mean and variance  $\sigma^2$ .

The dependent variable has both left and right censoring so that:

$$y_i = \begin{cases} 0 & \text{if } y_i^* \leq 0 \\ y_i^* & \text{if } 0 < y_i^* < 100 \\ 100 & \text{if } 100 \leq y_i^* \end{cases} \quad (2)$$

where 0 and 100 are the censoring points.

The parameters  $\beta$ ,  $\sigma$  are estimated by maximizing the log likelihood function:

$$\ell(\beta, \sigma) = \sum_{i \ni y_i = 0} \log F((-x_i' \beta) / \sigma) + \sum_{i \ni 0 < y_i < 100} \log f((y_i - x_i' \beta) / \sigma) + \sum_{i \ni y_i = 100} \log(1 - F((100 - x_i' \beta) / \sigma)) \quad (3)$$

where  $f$  and  $F$  are the density and cumulative distribution functions respectively. Denoting  $\phi[(-x_i' \beta) / \sigma]$ ,  $\phi[(100 - x_i' \beta) / \sigma]$ ,  $\Phi[(-x_i' \beta) / \sigma]$ , and  $\Phi[(100 - x_i' \beta) / \sigma]$  by the respective symbols  $\phi_0$ ,  $\phi_{100}$ ,  $\Phi_0$ , and  $\Phi_{100}$ , the conditional prediction of  $y_i$  given  $x_i$  is:

$$E(y_i | 0 \leq y_i^* \leq 100) = x_i' \beta + \sigma(\phi_0 - \phi_{100}) / (\Phi_{100} - \Phi_0) \quad (4)$$

and the unconditional prediction of  $y_i$  is:

$$E(y_i) = x_i' \beta \{ \Phi_{100} - \Phi_0 \} + \sigma \{ \phi_0 - \phi_{100} \} + (1 - \Phi_{100}) 100 \quad (5)$$

Finally, quasi-maximum likelihood (QML) White standard errors are used to adjust for heteroscedasticity in this panel data.

Since we expect both bidder and target preferences to affect the offer price and its form of consideration, we would ideally like to simultaneously estimate equations capturing the two parties' preferences. However, identification requires information about a target's stand alone value relative to its purchase price (takeover premium) as well as the form of payment. Access to information about a target's stand alone value is unavailable, given that most of these firms are privately held. This precludes estimating the alternative purchase prices conditional on form of payment. As a consequence, we have chosen to estimate a reduced form equation that includes both parties' preferences as explanatory variables.

[Table III goes here]

By breaking the sample into the UK-Ireland and continental Europe, we can assess whether common law countries exhibit a distinctly different M&A financing relationships to the explanatory variables, especially with respect to bidder corporate control and debt financing constraints. Splitting the sample is further motivated by the high frequency of M&A transactions in the UK and Ireland, where shareholder concentration is much lower and borrowing capacity appears stronger. Tobit regressions of the percentage of cash consideration are presented in Table III for the full sample and the UK – Ireland and Continental European subsamples. In each of these samples, we include measures of bidder corporate control and financial condition as well as a number of control variables. We measure bidder corporate control by the percentage of votes under the control of the largest shareholder and its square and

cubic values and a measure that proxies for the creation of a rival bidder blockholder if the deal is stock financed. We measure bidder financial condition by its portion of tangible assets, financial leverage, interlocking directors, and total assets.

In the first regression in Table III Panel A we estimate the model for the full sample. We find that bidder voting control is significant and positive in the level and cubed value and negative for the squared value, where the transition points are 15.79 and 61.67 percent for the whole sample.<sup>14</sup> These cutoff points are substantially higher than those identified in the US literature, but close to the 20 and 60 percent cutoffs we employ in our spline estimation reported in the robustness section of the analysis. These estimates are consistent with control not being a serious concern at low levels of voting power, then becoming important at higher levels, but at very high levels again becoming less of a concern again. With high levels of control in a bidder, the dominant shareholder is less concerned with losing control due to a stock financed acquisition, probably because their position is only at risk in unusually large deals. The positive coefficient on the intermediate shareholdings level supports the previous findings of Amihud, Lev and Travlos (1990), Martin (1996) and Ghosh and Ruland (1998), though they did not find a negative coefficient for high management stockholdings.

A bidder's payment choice can be constrained by several factors. A bidder with few excess liquid assets, few tangible assets and little unused debt capacity (i.e. high leverage relative to its industry) can be strongly constrained in its use of cash. Examining the effects of bidder financial condition, we find that when they have more tangible assets (collateral), they are more likely to choose cash as their M&A payment form, which is consistent with their debt capacity rising with collateral.<sup>15</sup> Financially constrained bidders with high leverage are more likely to use stock financing, which is consistent with bidder concern about substantially raising their likelihood of bankruptcy. Interlocking directors with a bank result in a significantly higher fraction of cash payment which can reflect greater access to debt. Lastly, we find that bidders with greater total assets are more likely to finance with cash as expected, which is consistent with their greater level of diversification.

A target's listing status is a proxy for its shareholder ownership structure. As expected, bidders of unlisted targets and subsidiary targets use cash significantly more often as their method of payment choice, while bidders of listed targets use stock financing more often. This evidence is consistent with bidder preference for cash financing when the risk of a control loss rises and a greater seller preference for cash when a target is privately held or a subsidiary. We document that a target's listing status has very high statistical and economic significance. This result is consistent with bidders avoiding stock financing to minimize corporate control threats, especially in acquisitions of subsidiaries which could be viewed as a serious threat given the divesting firm's financial wherewithal. Fuller, Netter and Stegemoller (2002) observe that mergers and acquisitions of US subsidiaries are generally financed with cash and these deals tend to be small.

We also take account of the possible creation of a dominant new shareholder with the variable CONTROL LOSS. This variable could capture the impact of bidder management aversion to actions that significantly dilute or threaten the control positions of their dominant shareholders. The control loss variable is insignificant, possibly because the privately held firms have multiple owners, who do not necessarily act in concert. Thus, giving these target shareholders bidder stock may not in practice create as large a rival blockholder for the bidder's dominant shareholder.

Turning to the other explanatory variables, we find relative size of a target is significantly negatively correlated with the proportion of cash used as a method of payment. This supports Hansen's (1987) asymmetric information prediction that stock financing is more likely as the bidder's information asymmetry with regard to the target's market value rises. The indicator for targets in related industries is also negative and significant, consistent with sellers being less risk averse to accepting buyer stock when it is in the same industry. The runup in bidder stock price has a negative and significant effect on the proportion of cash financing, supporting the arguments that bidders are more likely to use stocks when they are overvalued. This is in line with the empirical findings of Martin (1996), and the theoretical models of Hansen (1987) and Myers and Majluf (1984).

Looking at the explanatory variables related to target investment preferences, we expect target shareholders to be more inclined to hold bidder stock when a bidder has promising growth opportunities proxied by a bidder's market to book ratio, MKT-TO-BOOK. This ratio is an attractive growth measure because it is forward looking. The results are supportive of the argument. Higher ratios are associated with lower proportions of cash (thus, a higher proportion of stock) used as the method of payment. The relationship is statistically significant at the one percent level. This result is in line with the earlier findings of Jung et al. (1996) and Martin (1996). Also consistent with target shareholder preferences, stock is more likely in domestic deals and cash is much more likely in cross-border deals; deals where sellers are likely to view bidder stock value as more uncertain. Finally, we use market runup to proxy for the effects of business cycles, but find it is statistically insignificant. The estimated model explains more than 20% of cross sectional variability in the proportion of cash used to finance M&A deals.

In the remaining regressions of Table III Panel A, we examine the extent that UK and Irish bidders exhibit different motives from continental Europeans. Since a majority of our M&A sample involves UK bidders, we estimate our primary findings separately for UK-Irish and continental European bidders. In addition, the UK and Ireland are the only common law countries in the sample, which means that this decomposition allows us to assess the importance of the bidder's legal system when it is common law. Distinguishing UK - Irish bidders from other continental European bidders can be particularly relevant because UK - Irish share ownership tends to be less concentrated and the bidder percentage of tangible assets tends to be larger than continental European bidders. In our sample, the average voting stake controlled by a bidder's largest shareholder is 18% for UK - Irish bidders, and 29% for continental European bidders. Furthermore, the percentage of tangible assets is 41% for UK - Irish bidders and only 27% for continental European bidders.

Separate Tobit estimates for UK-Irish and continental European bidders are shown on Table III, Panel A regressions (2)-(4). We find that the corporate control and financial variables are important in both samples. The proportion of cash consideration increases significantly when a UK bidder has a controlling shareholder with an intermediate level of voting power, and weakens for relatively high or low

ownership levels. For the continental European bidders, the relationship is approximately linear rather than cubic, which may reflect the typically higher dominant shareholder ownership level and a greater bidder concern about losing control. This linear coefficient is positive and statistically significant, which implies that the higher a dominant shareholder's voting control in a bidder, the greater the likelihood of cash consideration. We also find that both UK-Irish and continental European bidders appear to be very reluctant to use stock financing in deals involving unlisted or subsidiary targets.

Examining the variables measuring bidder financial condition, we find bidder collateral, financial leverage and asset value are highly significant, supporting the prediction that bidder financial condition has a strong influence on the method of payment choice, with collateral and asset size increasing cash financing and leverage decreasing it. This strongly supports the conclusion that stock financing becomes more common as measures of a bidder's financial condition deteriorate. Overall, the qualitative results for the two subsamples are virtually identical in terms of signs and significance levels. The only other minor differences are that the indicator for bank interlocking directors is marginally insignificant for the UK and Ireland, while the intra-industry indicator and market runup measure are statistically insignificant for continental Europe. In unreported results, we also interact a UK-Ireland indicator with our shareholder control measures and bidder financial condition measures. Using a linear specification, we find the impact of shareholder voting control is greater in the Continental European sample. We also find that the effect of a bidder having a director on a bank's board is significantly weaker in the UK-Ireland, as we would expect given their less bank dominated capital market.

We next evaluate whether the financing decision is affected by the origin of the legal system (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1998) of the bidder nations. In Table III, Panel B, we further examine the effects of differing legal systems in continental Europe on our prior results by adding indicators for Scandinavian, Germanic and French legal systems and eliminate the intercept term. The coefficients on the bidder nation's legal system indicators measure the probability of cash payment across Scandinavian, French and Germanic legal systems. We find that all three bidder nation legal code indicators are insignificant.<sup>16</sup> In the second regression we augment these indicator variables by adding

interaction terms between these legal code indicators and the dominant shareholder's voting power in the bidder so as to assess whether corporate control concerns are substantially different across legal systems. We find that the indicators continue to be insignificant, but the interaction terms are significant and positive for the French and German legal codes. This suggests that these two legal systems create stronger bidder motivations to maintain high voting control, possibly because laws in these countries discourage diffuse shareholdings by their less aggressive insider trading rules and disclosure requirements. These results are also in line with recent evidence by Nenova (2003), who shows that across a sample of Common law, Germanic law, French law and Scandinavian law countries, control premia are lowest for Scandinavian countries.

To sum up, our Tobit regression estimates are consistent with M&A financing decisions being strongly influenced by a dominant shareholder's corporate control concerns and the financial condition of the bidder. In addition, the method of payment choice is influenced by a wide variety of other factors related to the specific characteristics of the bidder, target and the deal itself. Further, these conclusions hold for both bidders in the UK – Ireland and continental Europe.

## **B. Sensitivity Analysis**

### **B1. Additional control variables**

We assess the robustness of our results by introducing additional deal descriptive variables and by introducing alternative proxies for many of the variables discussed in previous sections. All regressions discussed below are estimated after adding the new variables to the first regression in Table III. Unless otherwise specified, these variables are either added or substituted one at a time.

[Table IV goes here]

We begin by adding the percentage of cash used in a bidder's last M&A transaction (PRIORFIN) in regression (1) of Table IV. We find this variable has a highly significant and positive coefficient. In regression (2), we examine the explanatory power of the percentage of cash used in prior M&A transactions in the target's industry over the year prior to the announcement (including at least 10 deals),

measured by its primary 3 digit SIC (TARG. IND. CASH). We find that this variable is also positive and highly statistically significant. These variables tend to lower the size and statistical significance of the voting control variables, though this isn't surprising given that these two variables are going to be determined by largely the same bidder factors affecting the percentage of cash in the current deal.

In regression (3), we examine the effect of alternative M&A transaction forms using indicator variables for mergers, tender offers and asset acquisitions. Due to the size of the typical merger in our sample, these transactions generally require the use of stock financing. Martin (1996) documents a lower likelihood of stock financing in tender offers. This evidence is also consistent with Fishman's (1989) model of competitive bidding. We also expect asset acquisitions to be largely cash financed.

We find the coefficient on the merger indicator is a negative and highly statistically significant ( $z\text{-stat} < -5$ ). The coefficient on the tender offer indicator is positive and highly significant ( $z\text{-stat} < -3.4$ ), while the asset acquisition indicator is not significant. With all these three variables, there is a serious concern about potential endogeneity of the choice of deal legal structure. Specifically, this decision is likely to be made simultaneously with the M&A financing decision and to be driven by many of the same considerations. Since M&A deal structure is only used as an additional control variable in some of our robustness tests, we do not explicitly address the problem of endogeneity.

In regression (4) we explore the effects of bidder stock risk and liquidity. Since the M&A currency choice determines the allocation of deal risk and expected M&A benefits among buying and selling stockholders, bidder and target expectations concerning the risks and expected rewards of an M&A deal can affect their willingness to accept bidder stock as deal consideration. Firms with a greater proportion of growth option value and stocks with greater price volatility create greater information asymmetry between issuers and stock investors, so bidders on average would prefer to finance with stock to exploit their information advantage, as implied by Myers and Majluf (1984). So a higher bidder stock return variance should on average make stock financing more desirable for bidders, since it increases the opportunities to issue overvalued stock. Higher return variance also makes debt, and thus cash financing, less desirable for a bidder due to the higher expected bankruptcy costs and lower expected tax benefits of



debt.<sup>17</sup> On the other hand, greater stock price volatility is likely to make bidder stock less attractive to target shareholders. We see in regression (4) that the standard deviation is significantly negatively correlated with the frequency of cash financing, suggesting that bidder preferences dominate the financing choice in the M&A deals in our sample.

Illiquid bidder stock is also likely to reduce a seller's willingness to accept stock as deal consideration. We calculate bidder stock liquidity by the ratio of number of shares traded in a particular month over the average number of shares outstanding at the beginning and end of the same month. This liquidity ratio is averaged across the 24 months prior to the acquisition announcement month to obtain a measure of bidder stock liquidity, LIQUIDITY. Examining regression (4), we see that bidder liquidity is not statistically significant.

In regression (5) we control for tax benefits of M&A deals which are a function of the financing choice. Several M&A specific tax features can be relevant for the M&A financing decision. When a target's home nation offers tax benefits to the target firm or its selling shareholder in a stock merger or stock financed acquisition, we would expect to observe a higher proportion of stock financing. Several countries allow a tax exemption in case of mergers (which are generally stock financed). We use the Economist Intelligence Unit's Country Commerce Reports to build an indicator variable, MERGER TAX BEN, which captures this effect. This indicator variable takes a value of two if there is a tax advantage for mergers (vs. acquisitions) in both target and bidder nations, a value one if there is a tax advantage in only one of the nations involved, and zero if there are no tax advantages of this form in either nation.

While controlling for all tax effects of M&A transactions is a nearly impossible task, we do include a control for capital gains tax benefits for stock and mixed financing methods.<sup>18</sup> We use an indicator variable, CAPITAL GAINS, to capture target nations with individual and corporate capital gains treatment. This variable is also based on information taken from the Economist Intelligence Unit's Country Commerce Reports for the year of the M&A transaction. This indicator takes value of one if there is any tax advantage to stock payments in the target country and is zero otherwise.<sup>19</sup> As seen on

Table IV regression (5), only the MERGER TAX BEN is statistically significant and negative as predicted, while CAPITAL GAINS is statistically insignificant.

Since there are other mechanisms for maintaining corporate control, we also investigate the effects of bidders issuing stock with weak voting rights due to a pyramid or a dual class share structure in regression (6), by including an indicator variable, WEAK VOTING RIGHTS, to represent these voting structures. Pyramids occur when bidder Y has an ultimate owner, who controls Y indirectly through another corporation C that she does not wholly own. Dual class shares exist when several classes of stock with unequal voting rights, (including non-voting and limited voting shares) are outstanding. The “weak voting rights” indicator is positive as expected, but not significant.

To further assess the importance of financing constraints, we use several additional variables to measure a firm’s ability to pay in cash for an M&A transaction. In regression (6) of Table V, we also include a cash holdings measure, CASH HOLDINGS, which represents excess liquid assets and is measured as the sum of cash plus securities divided by total assets.<sup>20</sup> In our regression, cash reserves are significantly and negatively correlated with the proportion of cash used as consideration in M&A deals.

Recognizing that exchange rate fluctuations in cross-border deals can be less of a concern for Euro-zone deals relative to other cross-border deals, we examine the impact of using a EURO ZONE indicator variable in regression (7). We find Euro-zone deals significantly reduce cash financing, even when the cross border indicator is included, which suggest that the Euro-zone indicator is primarily capturing the effect of home bias unrelated to exchange rate risk.

In regression (8), we introduce GROUP BANK, which measures a bidder’s close financial affiliation with a bank. Bidders that are members of groups containing banks may have an easier time launching cash bids, since they can more easily obtain cash from affiliated banks. La Porta, Lopez-de-Silanes and Zamarripa (2003) show that related party lending in Mexico represents a substantial fraction of funds borrowed by these firms. Extensive evidence of looting is also found in Russia and Chile, particularly within business groups that include banks (Akerlof and Romer, 1993, Laeven, 2001). Therefore, we control for group affiliations that include banks, with an indicator GROUP BANK. As in

Faccio, Lang and Young (2001), we start by defining a corporation as “group-affiliated” if it meets one of the following criteria: (i) it is controlled by a shareholder via pyramiding; (ii) it controls another listed corporation; (iii) it has the same controlling shareholder as at least one other listed corporation; (iv) its controlling shareholder is a corporation or financial institution with no controlling shareholder at the 10 percent level. We don’t use the 20 percent cutoff as many European countries strictly limit ownership of banks by non-financial companies as well as ownership of non-financial companies by banks.<sup>21,22</sup> While positive as expected, GROUP BANK is not statistically significant.

Lastly, we examine the effects of having the same owner for the bidder and target, which we term an intra-corporate group. In regression (9) we find this indicator to be negative and significant, showing that these deals are more likely to use stock financing. This result is consistent with lower bidder corporate governance concerns and less target resistance to stock consideration. We also find that the coefficient on the bidder voting control measure becomes larger and more statistically significant, suggesting that once we control for the cases of intra-corporate shareholdings, the effect of bidder corporate governance concerns have a greater marginal impact of M&A financing decisions.

In unreported regressions, we examine the effect of introducing several other potentially important factors. Bankrupt targets are likely to be controlled by creditors who have strong motivations to reduce their risk exposure and monetize their investment. Bank creditors are often strongly constrained by bank regulators from holding stock. Thus, these sellers are likely to have a strong preference for cash over stock. We use a dummy variable to represent these financially distressed targets. There are only 38 clear cases in our sample where the target is clearly financially distressed or bankrupt. This variable is highly significant and positive, suggesting that lenders have a strong preference for cash under these circumstances.

An alternative measure of future bidder financial condition is its asset growth rate. It has the advantage that it is not significantly affected by accounting policies, though it is not forward looking. We find that when we replace the bidder market to book ratio with asset growth, it is significantly negatively

related to cash financing. So regardless of which measure of bidder growth we use, we obtain similar conclusions about its negative effect on cash financing.

As an alternative measure of a bidder cash constraint we replace FIN'L LEVERAGE with an estimate of the bidder's unused debt capacity measured by the difference between a bidder's pre-deal leverage ratio and its industry mean where leverage is measured by book value of debt divided by the sum of market value of equity plus book value of debt and the industry is defined as all firms in the same 3 digit SIC code for our 13 bidder countries. We find highly levered bidders are insignificantly less likely to finance M&A transactions with cash. One weakness of this measure is that it does not take account the target's size, so small deals by highly levered firms which have minimal effect on leverage would still be predicted to use stock.

We also examine whether target country regulations which require compulsory cash payments as an optional form of consideration in M&A stock deals has an impact on the M&A financing choice. We have 260 deals coming under these regulations. We measure this effect with a dummy variable that takes a value of one when such a regulation holds and is zero otherwise. Since the cash alternative usually applies only to acquisitions of listed targets, this dummy variable takes a zero value whenever the target is unlisted. The estimates indicate that this law increases the likelihood of stock consideration, which is not surprising since a seller's potential preference for cash financing can now be satisfied with a stock offer.

Cash enables more rapid deal completion, thus lessening the risk of competitive bids and aggressive takeover defenses against unfriendly bids (Fishman, 1989). Gilson (1986) documents that stock payments lead to substantial offer delays in the US, due to security registration and shareholder approval requirements. Speed is particularly important when a bidder has a high valuation of a target. Furthermore, holding the acquisition price constant, using cash lowers the likelihood of bid rejection by target management and of a competitive bid (Fishman, 1989). To control for these hypothesized effects, we use a dummy variable that takes a value of one if a deal is characterized as hostile, and is zero otherwise. This characterization is based on SDC data and extensive keyword searches on Lexis-Nexis for M&A transactions that involve the words: hostile, unfriendly, unsolicited or white knight. The

unfriendly indicator is insignificantly related to the method of payment choice. The results are not formally reported in the table.

We next examine several alternative business cycle and aggregate stock market condition variables to control for possible macroeconomic effects, such as those documented in Choe, Masulis and Nanda (1993) and Lowry and Schwert (2002) which are shown to influence aggregate IPO and SEO issuance decisions. These variables can affect M&A financing decisions since they can alter the relative costs of debt and equity financing by affecting the adverse selection associated with accepting bidder stock as M&A currency. We also examine the explanatory power of the log of the 3 month LIBOR rate, GDP per capita and the stock market index standard deviation in the bidder nation, but find these variables to be statistically insignificant. To conserve space, we do not report these results.

In other unreported results, we examine the effect of replacing the cubic specification for the voting control of the largest shareholder by a spline function as in earlier studies by Martin (1996) and Ghosh and Ruland (1998) to capture the effects of a bidder's voting control structure. The spline function uses cutoffs at the 20% and 60% ownership levels (based on these cutoffs we build the variables CNTRL<20, CNTRL20\_60, and CNTRL60+). The motivation for choosing the 20% and 60% cutoff points is that stock financed acquisitions are much more likely to threaten the effective control of the bidder's largest shareholder when their voting rights are in this range. These cuts offs are similar to the transition points in the estimated cubic on the ultimate voting control variable. We obtain similar conclusions about the significance of the intermediate level of control and the importance of the bidder's corporate control concerns. More specifically, we find that the CNTRL20\_60 is positive and statistically significant, while CNTRL<20 and CNTRL60+ have negative coefficients, though they are not significant. This is consistent with an intermediate level of voting control by the dominant investor having a negative effect on stock financing.

Caves (1982) and Morck and Yeung (1992) argue that R&D expenses play a critical role in cross-border M&A, allowing bidders to leverage more value off R&D related assets by operating in many

markets, rather than just one. To control for this effect, we add the ratio of R&D plus capital expenditures over total assets as control variable, but find it to be insignificant (coeff.=-0.14; p-value=0.52).

## ***B2. Ordered Probit Regressions***

A benefit of probit estimation is that it allows us to focus on the qualitative decision to finance with stock, cash or a mixture of the two. In many mixed deals the bidder does not always determine actual percentage of cash financing since target shareholders are offered a choice of cash or stock financing. As a result, the decision is more accurately characterized as choosing: cash, stock or a mixture. From this perspective, an ordered probit model is very attractive where the dependent variable is zero for pure stock deals, one for mixed stock and cash and two for all cash deals. In the following tables, we report ordered probit results for the full sample, and the UK-Irish and continental European subsamples.

[Table V goes here]

Most of the previous results from Table III hold for the full sample and the UK-Ireland and continental Europe. Most importantly bidder financial condition and corporate control vulnerability measures (except for control loss) are similar in sign and significance to our earlier Tobit estimates. More specifically, we observe in all the regressions that the three measures of bidder financial strength: collateral, leverage (financial constraint), and asset size, are always significant at the 1% level and their coefficients are all of the expected signs. In addition, INTERLOCK, a measure of a bidder's special access to bank financing is positive and significant in all the regressions, except (2). These results differ from Martin (1996) in that his leverage and relative offer size measures are never significant, while his cash flow measure has an unstable sign.

Turning to the corporate control coefficients for the squared term in the cubic function in regressions (1) and (2) or the linear term in regression (4), we find they are positive and significant. In contrast, Martin reports a significant positive effect on cash financing for US acquisitions when bidder management shareholdings are in the 5% to 25% range. The coefficients on the unlisted target and subsidiary indicators are always positive and highly significant, which supports bidder aversion to

creating a new blockholder, while the control loss variable is consistently insignificant. It is also noteworthy that the coefficient for subsidiary targets is larger and statistically more significant across the regressions, suggesting that bidders are more reluctant to issue stock to a corporate seller and corporate sellers are more reluctant to accept bidder stock as consideration.

Bidder stock runup and market to book ratio and relative deal size are negative and significant in all the regressions. This is similar to Martin's finding that the coefficient on bidder stock price runup and Tobin's Q are significantly negative. The cross-border indicator is positive and significant in all the model estimates. As for country specific variables, the prior market runup is almost never significant.

### ***B3. Estimating a Probit Model to Predict Bidders and the Importance of Sample Selection Bias***

To draw reliable conclusions about the determinants of the M&A payment choice, we need to control for a potential censoring problem in our sample. If some potential bidders do not actually bid because of their high level of concern over losing corporate control or facing financial distress, then when we estimate these relationships for the decisions of actual bidders, we can end up underestimating the importance of one or more of our primary determinants of M&A consideration. To control for this potential bias, we first estimate a probit model for the likelihood that a particular firm will make a bid. Then following Heckman's (1976, 1979) two-step procedure, we calculate the inverse Mill's ratio for each observation and include this variable in our second step Heckit analysis where we estimate the percentage of M&A financing that is in cash, when bids are observed. If this variable has an insignificant coefficient, then we can conclude that the censoring problem does not have a significant effect on our second stage estimates of the M&A payment choice.<sup>23</sup>

In estimating the probit model for the likelihood of bidding, we start with a sample of listed companies in our 13 European countries. This data is taken from Faccio and Lang (2002) who analyzed the ultimate owners of 5,547 firms listed in the main segment of the stock exchanges of our European bidder countries. We then use a set of explanatory variables meant to capture the following key determinants of whether a firm will become a bidder: firm corporate control and financial characteristics,

other firm characteristics and industry M&A activity based on prior work by Comment and Schwert (1995) and Hartford (1999). The firm specific explanatory variables we use are: ultimate percentage voting control of its largest shareholder, an indicator for weak voting rights, percentage of tangible assets, net short term assets minus cash, financial leverage and its squared value, an indicator for interlocking directors with a bank, natural log of total assets, the ratio of market to book value of assets, asset growth rate, the ratio of capital expenditures and R&D to total assets, an indicator of listing on either the London Stock Exchange or the New York Stock Exchange, firm's market share of industry sales, an indicator for high tech industries and the prior level of M&A activity in the firm's industry. All the variables are measured as of the start of the sample period, i.e. January 1, 1997 or the earliest available date in our sample period. We report model estimates for three samples; one for the full sample, one for UK and Irish bidders and one for continental European bidders.

[Table VI goes here]

In examining the estimation results in Table VI, we see that the overall explanatory power of the model is high, with McFadden R squared values between 15% and 22%. A large number of the explanatory variables are statistically significant with signs that make economic sense. Specifically, we have a significant negative coefficient on ultimate voting rights, which is consistent with firms valuing corporate control being less apt to become bidders. The negative coefficient on the square of leverage is consistent with highly leveraged firms being unwilling or unable to become bidders. Likewise the positive coefficient on tangible assets, total assets and firms listed on the London or New York Stock Exchanges is consistent with larger firms with more debt capacity and greater stock liquidity having a greater likelihood of bidding. Both higher asset growth and market to book ratios lead to more bidding. In the UK & Ireland, the positive coefficients on the percentage of cash and the percentage of net short term assets minus cash suggests that firms with greater liquidity are more likely to bid. Likewise, in continental Europe, being in a high tech industry or having relatively higher capital expenditures plus R&D lead to greater bidding activity.



In implementing this Heckit analysis, we use the probit estimates from Table VI and calculate the inverse Mill's ratio and include this ratio as an added regressor in our second stage OLS model. After re-estimating the augmented model in Table III, we find the inverse Mills ratio has a t-statistic of -1.43 for the whole sample; a t-statistic of -0.16 for the UK & Irish bidder sample, and a t-statistic of 0.51 for the Continental European bidder sample. Thus, the analysis indicates that the selection bias is not a serious concern for our estimates, which suggests offsetting bidder selection effects from corporate control and financial considerations.

#### **IV. Conclusions**

We explore the determinants of M&A financing decisions using a large sample of European transactions over the period 1997-2000. Our primary focus is on the trade-off between bidder corporate control threats, which discourage stock financing and bidder financing constraints, which encourage stock financing. We find that corporate control incentives to choose cash are particularly strong when a bidder's controlling shareholder has an intermediate level of voting power in the range of 20 to 60 percent. Furthermore, bidders prefer cash financing of M&A transactions when the voting control of their dominant shareholders is threatened. This is particularly the case when target shareholdings are highly concentrated. Our results also strongly support a pattern of European bidders choosing stock financing with greater frequency as measures of their financial condition weaken.

Overall, we find much more concentrated ownership in Europe and stronger effects on the M&A financing choice from bidder corporate governance concerns and financial conditions than Martin (1996) finds for the US. In summary, both bidder financial condition and corporate control concerns have a clear influence on European M&A financing choices. More specifically, we observe that our three measures of bidder financial strength: collateral, leverage (financial constraint), and asset size, are always significant at the 1% level and their coefficients are all of the expected signs. These results differ from Martin (1996) in that his leverage and relative offer size measures are never significant, while his cash flow measure has an unstable sign. We also find that when a bidder has special access to bank borrowing due

to interlocking directors, cash financing of the M&A deal is more likely. When the owner of the bidder and target is the same indicating that when the target is under bidder control, we see that stock financing of the M&A deal is more likely. We observe that stock financing is less likely for unlisted targets and corporate subsidiaries, which supports bidder aversion to creating a new blockholder. Moreover the impact of having a subsidiary target is larger and statistically more significant than having an unlisted target across the regressions, suggesting that bidders are more reluctant to issue stock to a corporate seller and corporate sellers are more reluctant to accept bidder stock as consideration.

Comparing common law countries to continental Europe, we find a different functional form for the relationship between method of payment and bidder corporate control: linear in continental Europe (with more concentrated control resulting in a higher likelihood of cash payments), and cubic in the UK-Irish sample (where bidders only exhibit a reluctance to employ stock financing over intermediate levels of voting control). We also find a significantly larger portion of cash financing when a bidder is on a bank's board of directors in continental Europe, which may reflect the greater importance of bank loans there and imply better access to debt financing.

Our analysis also uncovers several other bidder characteristics that are significant factors in the M&A payment choice, including its prior stock price runup and market-to-book value of bidder assets, deal and target characteristics along with legal and regulatory variables. Statistically significant explanatory variables include deal size divided by bidder equity capitalization, cross border and cross industry deals. Most importantly, we find that our conclusions about the importance of bidder financial conditions and threats to its corporate governance are robust to the inclusion of a wide array of other explanatory variables, several alternative statistical models and adjustment for bidder selectivity bias. Overall, the bidder financial condition, corporate control threat and deal characteristics can explain up to 23% of the cross sectional variability in M&A payment decisions, measured by the portion of the M&A purchase price paid in cash.

## References:

- Akerlof, George A., and Paul M. Romer, 1993, Looting: The economic underworld of bankruptcy for profit, *Brookings Papers on Economic Activity* 2, 1-73.
- Allen & Overy, 2000, *European Public Takeover Bids* (Allen & Overy, London, available at <http://www.allenoverly.com/>).
- Amemiya, Takeshi, 1984, Tobit Models: A Survey, *Journal of Econometric* 24, 3-61.
- Amihud, Yakov, Baruch Lev, and Nickolaos G. Travlos, 1990, Corporate control and the choice of investment financing: The case of corporate acquisitions, *Journal of Finance* 45, 603-616.
- Andrade, Gregor, Mark Mitchell, and Erik Stafford, 2001, New evidence and perspectives on mergers? *Journal of Economic Perspectives* 15, 103-120.
- Brown, David T., and Michael D. Ryngaert, 1991, The mode of acquisition in takeovers: Taxes and asymmetric information, *Journal of Finance* 46, 653-669.
- Button, Maurice and Sarah Bolton, 2000, *A Practitioner's Guide to Takeovers and Mergers in the European Union* (City & Financial Publishing, Old Woking, UK.).
- Caves, Richard E., 1982, *Multinational Enterprise and Economic Analysis* (Cambridge University Press, New York).
- Chaney, Paul K., Linda M. Lovata, and Kirk L. Philipich, 1991, Acquiring firms characteristics and the medium of exchange, *Quarterly Journal of Business and Economics* 30, 55-69.
- Choe, Hyuk, Ronald W. Masulis, and Vikram Nanda, 1993, Common stock offerings across the business cycle, *Journal of Empirical Finance* 1, 3-31.
- Comment, Robert and G. William Schwert, 1995, Poison or placebo? Evidence on the deterrence and wealth effects of modern antitakeover measures, *Journal of Financial Economics* 39, 3-43.

Coval, Joshua, and Tobias Moskowitz, 1999, Home bias at home: Local equity preference in domestic portfolios, *Journal of Finance* 54, 2045-2073.

DeAngelo, Harry, and Ronald W. Masulis, 1980, Optimal capital structure under corporate and personal taxation, *Journal of Financial Economics* 8, 3-29.

Dittmann, Ingolf, and Niels Ulbricht, 2003, When do firms abolish dual-class stocks, working paper, Humboldt-Universität zu Berlin.

Dyck, Alexander, and Luigi Zingales, 2004, Private benefits of control: An international comparison, *Journal of Finance*, forthcoming.

Eckbo, B. Espen, and Herwig Langohr, 1989, Information disclosure, method of payment, and takeover premiums: Public and private tender offers in France, *Journal of Financial Economics* 24, 363-404.

Eckbo, B. Espen, Ronald M. Giammarino, and Robert L. Heinkel, 1990, Asymmetric information and the medium of exchange in takeovers: Theory and tests, *Review of Financial Studies* 3, 651-675.

Faccio, Mara, and Larry H. P. Lang, 2002, The ultimate ownership of western European corporations, *Journal of Financial Economics* 65, 365-395.

Faccio, Mara, Larry H. P. Lang and Leslie Young, 2001, Dividends and expropriation, *American Economic Review* 91, 54-78.

Fishman, Michael J., 1989, Preemptive bidding and the role of the medium of exchange in acquisitions, *Journal of Finance* 44, 41-57.

Franks, Julian R., Robert S. Harris, and Colin Mayer, 1988, Means of payment in takeovers: Results for the United Kingdom and the United States, in Alan J. Auerbach, ed.: *Corporate Takeovers: Causes and Consequences* (University of Chicago Press, Chicago, Ill.).

French, Kenneth, and James Poterba, 1991, Investor diversification and international equity markets, *American Economic Review* 81, 222-226.

Fuller, Kathleen, Jeffrey Netter, and Mike Stegemoller, 2002, What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions, *Journal of Finance* 57, 1763-1793.

Gadhoun, Yoser, Larry H.P. Lang and Leslie Young, 2003, Who controls US?, Chinese University of Hong Kong Working Paper.

Ghosh, Alope, and William Ruland, 1998, Managerial ownership, the method of payment for acquisitions, and executive job retention, *Journal of Finance* 53, 785-798.

Gilson, Ronald J., 1986, *The Law and Finance of Corporate Acquisitions* (The Foundation Press, Inc., Mineola, NY).

Grinblatt, Matt, and Matti Keloharju, 2001, How distance, language and culture influence stockholdings and trades, *Journal of Finance* 56, 1053-1073.

Hansen, Robert G., 1987, A theory for the choice of exchange medium in mergers and acquisitions. *Journal of Business* 60, 75-95.

Harris, Milton, and Arthur Raviv, 1988, Corporate control contests and capital structure, *Journal of Financial Economics* 20, 55-86.

Hartford, Jarrad, 1999, Corporate cash reserves and acquisitions, *Journal of Finance* 54, 1969-1997.

Heckman, James J., 1976, The common structure of statistical models of truncation, sample selection, and limited dependent variables and a simple estimator for such models, *Annals of Economic and Social Measurement* 5, 475-492.

Heckman, James J., 1979, Sample selection bias as a specification error, *Econometrica* 47, 153-161.

Hovakimian, Armen, Tim Opler, and Sheridan Titman, 2001, The debt-equity choice, *Journal of Financial and Quantitative Analysis* 36, 1-25.

Jung, Kooyul, Yong-Cheol Kim, and René M. Stulz, 1996, Timing, investment opportunities, managerial discretion, and the security issue decision, *Journal of Financial Economics* 42, 159-185.

Korajczyk, Robert A., Deborah Lucas and Robert MacDonald, 1991, The effect of information releases on the pricing and timing of equity issues, *Review of Financial Studies* 4, 695-708.

Krozner, Randall S., and Philip E. Strahan, 2001, Throwing good money after bad? Board connections and conflicts in bank lending, NBER working paper 8694.

La Porta, Rafael, Florencio Lopez-de-Silanes and Andrei Shleifer, 1999, Corporate ownership around the world, *Journal of Finance* 54, 471-518.

La Porta, Rafael, Florencio Lopez-de-Silanes, and Guillermo Zamarripa, 2003, Related lending, *Quarterly Journal of Economics* 118, 231-268.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny, 1998, Law and finance, *Journal of Political Economy* 106, 1113-1155.

Laeven, Luc, 2001, Insider lending and bank ownership, *Journal of Comparative Economics* 29, 207-229.

Ljungqvist, Alexander, and William J. Wilhelm Jr., 2003, IPO pricing in the dot-com bubble, *Journal of Finance* 58, 723-752.

Loughran, Tim, and Jay Ritter, 2001, Why has IPO underpricing increased over time?, working paper, University of Notre Dame.

Lowry, Michelle, and G. William Schwert, 2002, IPO market cycles: bubbles or sequential learning?, *Journal of Finance* 57, 1171-1200.

Maddala, G.S., 1984, *Limited-Dependent and Qualitative Variables in Econometrics* (Cambridge University Press, Cambridge UK).

Martin, Kenneth J., 1996, The method of payment in corporate acquisitions, investment opportunities, and management ownership, *Journal of Finance* 51, 1227-1246.

Morck, Randall and Bernard Yeung, 1991, Why investors value multinationality, *Journal of Business* 64, 65-87.

Myers, Stewart C., 1977, Determinants of corporate borrowing, *Journal of Financial Economics* 5, 147-175.

Myers, Stewart C., and Nicholas S. Majluf, 1984, Corporate financing and investment decisions when firms have information that investors do not have, *Journal of Financial Economics* 13, 187-221.

Nenova, Tatiana, 2003, The value of corporate votes and control benefits: A cross-country analysis, *Journal of Financial Economics* 68, 325-351.

Pajuste, Anete, 2003, What drives the unification of multiple class shares?, working paper, Stockholm School of Economics.

Penningtons Solicitors, 1998, Mergers and Acquisitions: Buying a Business in Europe (European Law Group, available at: <http://www.elgroup.com/>).

Prowse, Stephen, 1994, Corporate governance in an international perspective: A survey of corporate control mechanisms among large firms in the United States, the United Kingdom, Japan and Germany, BIS Economic Papers, Basel.

Servaes, Henri, 1991, Tobin's Q and the gains from takeovers, *Journal of Finance* 46, 409-419.

Shleifer, Andrei, and Robert W. Vishny, 2003, Stock market driven acquisitions, *Journal of Financial Economics* 70, 295-311.

Stulz, René M., 1988, Managerial control of voting rights, *Journal of Financial Economics* 20, 25-54.

Travlos, Nickolaos G., 1987, Corporate takeover bids, method of payment, and bidding firms' stock returns, *Journal of Finance* 42, 943-963.

Wansley, James W., William R. Lane and Ho C. Yang, 1987, Gains to bidder firms in cash and securities transactions, *Financial Review* 22, 403-414.

Wooldridge, Jeffrey, 2002, *Econometric Analysis of Cross Section and Panel Data* (MIT Press, Cambridge MA).

Zhang, Pingshun, 2003, What really determines the payment methods in M&A deals, Manchester School of Management Working Paper.



## Appendix A. Variable definitions

Variable	Definition
ASSET ACQ CODE	Indicator equals one when at least some of the assets of a company, subsidiary, division, or branch are acquired, and equals zero otherwise. <u>Source</u> : SDC.
ASSET GROWTH	Bidder's growth rate of total assets in the year prior to the bid. <u>Source</u> : Worldscope.
BANKRUPT TARG.	Indicator equals one when the target company is bankrupt or goes bankrupt during the transaction, and equals zero otherwise. <u>Source</u> : SDC.
(CAPEX+R&D)/(TOTAL ASSETS)	Ratio of capital expenditures (CAPEX) plus research and development expense (R&D) over total assets (%). CAPEX represent the funds used to acquire fixed assets other than those associated with acquisitions. R&D expense represents all direct and indirect costs related to the creation and development of new processes, techniques, applications and products with commercial possibilities. All variables are measured prior to deal announcement. <u>Source</u> : Worldscope.
CAPITAL GAINS	Indicator equals one if a seller's capital gain is not recognized for tax purposes when the method of payment includes stock, and is zero otherwise. For Ireland and the U.K., the variable takes a value of one only for "related" acquisitions (defined based on the 3 digit SIC code), since the tax deferral does not apply to acquisition of unrelated/dissimilar assets. <u>Source</u> : Constructed from information reported in the Economist Intelligence Unit's "Country Commerce" reports (various years).
CASH ALTERN LAW	Indicator equals one if the regulation requires a compulsory cash payment (at least as alternative), and equals zero otherwise. This dummy is available for Austria, Belgium, Denmark, France, Germany, Italy, Spain, Switzerland, Finland, Ireland, Portugal, Sweden, the United Kingdom, and the U.S. The dummy takes value 1 in Finland, Ireland, Portugal, Sweden, and the U.K. In the UK the cash alternative applies only if: (i) an offeror purchases with cash during an offer period and within the 12 months prior to its commencement, 10% or more of the voting rights of a class of shares in a target company or (ii) the offeror acquires offeree company shares for cash during the offer period, or (iii) in the view of the Panel it is necessary to ensure that all target company shareholders are treated similarly. <u>Source</u> : Built based on the information contained in Button and Bolton (2000), Allen & Overy (2000), and Penningtons Solicitors (1998).
CASH HOLDINGS	Percentage of cash plus tradable securities divided by total assets, all measured prior to deal announcement. <u>Source</u> : Worldscope.
CASH ONLY	Indicator equals one if the deal is financed only through "cash," and equals zero otherwise. This includes actual cash, liabilities and newly issued notes. <u>Source</u> : SDC.
CNTRL20_60	Variable that takes the value of 0 if control $\leq 20$ (%); takes the value of "CONTROL - 20" if $20$ (%) $\leq$ control $\leq 60$ (%); and takes the value of 40 if control $> 60$ (%). <u>Source</u> : computed based on Faccio and Lang (2002).
CNTRL60+	Variable that takes the value of 0 if control $\leq 60$ (%); and takes the value of "CONTROL - 60" if control $> 60$ (%). <u>Source</u> : computed based on Faccio and Lang (2002).
COLLATERAL	Ratio of tangible assets to total assets, prior to deal announcement. <u>Source</u> : Worldscope.
COMMON_LAW_B	Indicator takes a value of one if the bidder is from a country with a British legal tradition, and is zero otherwise. <u>Source</u> : <a href="http://www.som.yale.edu/faculty/fl69/default.asp">http://www.som.yale.edu/faculty/fl69/default.asp</a>
CONTROL	Ultimate voting stake held by the bidder's largest shareholder. For example, if a family owns 50% of Firm X that owns 10% of Firm Y, then this family controls 10 (%) of Firm Y (the weakest link along the control chain). This variable captures the effect of dual-class shares, pyramids, and cross-holdings. <u>Source</u> : Faccio and Lang (2002).
CONTROL LOSS	The product of a target's controlling share block and the deal's relative size. The relative deal size is computed as the ratio of offer size (excluding assumed liabilities) to the sum of the price offered for the acquisition plus the bidder's market capitalization (*100). The target's control block is assumed to be 100% for unlisted targets and subsidiary targets. For listed targets, we determine the pre-acquisition ownership of the target using the sources listed in Appendix B. <u>Source</u> : SDC; Worldscope; sources listed in Appendix B.

CONTROL<20	Variable that takes the value of CONTROL if control $\leq$ 20 (%); and 20 (%) if control > 20%. <u>Source:</u> computed based on Faccio and Lang (2002).
CROSS BORDER	Indicator takes a value of one if the bidder's and the target's country differ, and is zero otherwise. <u>Source:</u> SDC.
DEAL VALUE	Value of the deal, excluding assumed liabilities (in million US\$). <u>Source:</u> SDC.
EURO ZONE	Indicator takes a value of one if the bidder's and the target's adopted the Euro, and is zero otherwise. <u>Source:</u> SDC.
FINL LEVERAGE	Bidder financial debt prior to deal announcement plus deal value (including assumed liabilities) all divided by the sum of book value of total assets prior to deal announcement plus deal value (including assumed liabilities). <u>Source:</u> SDC and Worldscope.
FRENCH_LAW_B	Indicator equals one if the bidder is from a country with a French legal tradition, and is zero otherwise. <u>Source:</u> <a href="http://www.som.yale.edu/faculty/fl69/default.asp">http://www.som.yale.edu/faculty/fl69/default.asp</a>
GDP PER CAPITA	GDP per capita based on purchasing power parity (PPP). PPP GDP is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the U.S. dollar has in the United States. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current international dollars. <u>Source:</u> World Bank, <a href="http://sima-ext.worldbank.org/query/">http://sima-ext.worldbank.org/query/</a>
GERMANIC_LAW_B	Indicator equals one if the bidder is from a country with a German legal tradition, and equals zero otherwise. <u>Source:</u> <a href="http://www.som.yale.edu/faculty/fl69/default.asp">http://www.som.yale.edu/faculty/fl69/default.asp</a>
GROUP BANK	Indicator equals one if the bidder is affiliated with a group that includes a bank, and is zero otherwise. A corporation is defined as “group-affiliated” if it meets one of the following criteria: (i) it is controlled by a shareholder via pyramiding; (ii) it controls another listed corporation; (iii) it has the same controlling shareholder as at least one other listed corporation; (iv) its controlling shareholder is a corporation or financial institution with no controlling shareholder at the 10 percent level. The indicator always takes a value of zero for financial companies (SIC 6000-6999). <u>Source:</u> Faccio and Lang (2002) and Faccio, Lang and Young (2001), augmented with additional data from Extel Financial and sources listed in Appendix B.
HIGH TECH	High-tech companies are defined to have their primary SIC codes 3571, 3572, 3575, 3577, 3578 (computer hardware), 3661, 3663, 3669 (communications equipment), 3674 (electronics), 3812 (navigation equipment), 3823, 3825, 3826, 3827, 3829 (measuring and controlling devices), 4899 (communication services), and 7370, 7371, 7372, 7373, 7374, 7375, and 7379 (software). <u>Source:</u> SDC, Loughran and Ritter (2001), and Ljungqvist and Wilhelm (2003).
INDUSTRY M&A ACTIVITY	Total market value of global inter-corporate transactions during a specific time interval in a target's industry divided by the global total equity market value of firms in the industry. More specifically, the numerator is the worldwide aggregate value of corporate “control” transactions that took place in the potential or actual bidder's 3-digit SIC industry over the interval beginning one year prior to and ending the month of the M&A announcement. This calculation excludes the acquisition being considered. Control transactions are defined to include: leveraged buyouts, inter-corporate tender offers, spinoffs, purchases of minority stakes (i.e., toehold acquisitions), acquisitions of remaining interests, going private transactions and equity carve-outs. The denominator is the aggregate worldwide market value of publicly-traded stock in the three-digit SIC industry, measured as of the beginning of the calendar year in which the acquisition is announced. <u>Source:</u> SDC and Worldscope.
INTERLOCK	Indicator equals one if at least one of a bidder's top directors (CEO, president, vice-president, or secretary) is also a director of a bank, and is zero otherwise. The indicator always takes a value of zero for financial companies (SIC 6000-6999). <u>Source:</u> Worldscope.
INTRA-INDUSTRY	Indicator equals one if the bidder's and the target's primary three-digits SIC code coincides, and equals zero otherwise. <u>Source:</u> SDC.
INTRA-CORPORATE GROUP	Indicator equals one if SDC lists the same company as the major shareholder of both the bidder and the target. <u>Source:</u> SDC.

LEVTOT	Ratio of total debt to the sum of book value of equity plus book value of debt, prior to deal announcement. <a href="#">Source</a> : Worldscope.
LIQUIDITY	Ratio of the number of shares traded for a stock on a particular month over the average between the beginning of the month and the end of the month number of outstanding shares. This ratio is averaged over the 2 years prior to the acquisition announcement month. <a href="#">Source</a> : Datastream.
MARKET SHARE	Ratio of the dollar value of total sales for a given firm, over dollar value of sales across all firms in the same 3 digit SIC industry, aggregated across the 13 European bidder countries, prior to deal announcement. <a href="#">Source</a> : Worldscope.
MERGER	Indicator equals one when a combination of business takes place or 100% of the stock of a public or private company is acquired, and equals zero otherwise. <a href="#">Source</a> : SDC.
MERGER TAX BEN	Indicator equals two if there is any tax advantage for mergers (vs. acquisitions) both in the target's and in the bidder's country, equals one if there is such advantage in only one of the two countries, and equals zero if there is no advantage in either country. <a href="#">Source</a> : Economist Intelligence Unit's Country Commerce Reports, various years.
MIXED PYMT	Indicator equals one if the deal was financed both with "cash" and "stocks," and equals zero otherwise. <a href="#">Source</a> : SDC.
MKT RUNUP	Cumulative return of the stock price index in the bidder's country over the year preceding the announcement month. <a href="#">Source</a> : Datastream.
MKT-TO-BOOK	Ratio of the market value of equity (ordinary and preferred) plus book value of debt over the sum of book value of equity plus book value of debt, prior to deal announcement. <a href="#">Source</a> : Worldscope.
NET WORKING CAPITAL/TA	Net working capital (current assets minus current liabilities) minus cash and non-cash equivalents, normalized by total assets. All variables are measured prior to deal announcement. <a href="#">Source</a> : Worldscope.
NYLBN BIDDER	Dummy that takes value of one if the bidder is listed on either a major US market and/or the London Stock Exchange, and zero otherwise. <a href="#">Source</a> : SDC and Worldscope
PERCENT CASH	Cash as percentage of the overall value of the payment. Cash includes actual cash, liabilities and newly issued notes. <a href="#">Source</a> : SDC.
PRIORFIN	Proportion of cash used by the bidder in its last bid (we consider only bids announced since Jan 1, 1995). <a href="#">Source</a> : SDC.
REL SIZE	Ratio of the price offered for the acquisition (excluding assumed liabilities) over the sum of the price offered for the acquisition plus the bidder's market capitalization as of the year end prior to deal announcement. <a href="#">Source</a> : SDC and Worldscope.
RUNUP	Cumulative stock price return of the bidder over the year preceding the announcement month. <a href="#">Source</a> : Datastream.
STNDDEV BIDDER	Standard deviation of the bidder monthly stock return over the 2 years prior to the acquisition announcement month. <a href="#">Source</a> : Datastream.
STOCK ONLY	Indicator equals one if the deal was financed only through stocks, and equals zero otherwise. <a href="#">Source</a> : SDC.
SUBSIDIARY	Indicator equals one when the target is an unlisted subsidiary of another firm and equals zero otherwise. <a href="#">Source</a> : SDC.
TARG. IND. CASH	Average percentage of cash used in the deals announced over the year prior to the announcement (including at least 10 deals) in the same 3 digit SIC industry as the target (measured as of the year end prior to the announcement), excluding other acquisitions made in the same industry by our bidder. <a href="#">Source</a> : SDC.
TENDER OFFER	Indicator equals one if the deal involves a tender offer and is zero otherwise. A tender offer is defined as a formal cash offer of specific duration made to the shareholders of a publicly held target. The offer is often conditioned upon certain requirements such as a minimum number of shares being tendered. <a href="#">Source</a> : SDC.

TOTAL ASSETS	Sum of total current assets, long term receivables, investment in unconsolidated subsidiaries, other investments, net property plant and equipment and other assets, prior to deal announcement. <u>Source:</u> Worldscope.
UNFRIENDLY	Indicator equals one if the bid is hostile, unsolicited or a white knight, and equals zero otherwise. <u>Source:</u> SDC and Lexis-Nexis.
UNLISTED TARGET	Indicator equals one if the target is a stand-alone company, not listed on any stock exchange, and equals zero otherwise (e.g., a target is listed on at least one stock exchange, or if it is a subsidiary of a listed firm). <u>Source:</u> SDC.
WEAK VOTING RIGHTS	Indicator equals one if the difference between a bidder's largest shareholder's voting rights and ownership (cash flow) rights is equal or above 10 (%), and is zero otherwise. Discrepancies between ownership and voting rights occur when a bidder is controlled through a pyramid and/or has a dual class shares structure, and equals zero otherwise. Pyramids occur when bidder Y has an ultimate owner, who controls Y indirectly through another corporation that she does not wholly control. Dual class shares are defined as several classes of outstanding stock with unequal voting rights, including non-voting and limited voting shares. <u>Source:</u> Faccio and Lang (2002).

## Appendix B. Data sources for targets' ownership structure

Country:	Data sources:
Argentina	Worldscope
Australia	Australian Stock Exchange, "ASX all Ordinary Index. Company Handbook", Sydney, N.S.W. and <a href="http://www.companies.govt.nz/search/cad/dbssiten.main">http://www.companies.govt.nz/search/cad/dbssiten.main</a>
Austria	Wiener Börse, "Yearbook", Österreichische Vereinigung für Finanzanalyse, Wien
Belgium	Banque Bruxelles Lambert, "Actionnariat des Sociétés Belges cotées à Bruxelles", Department Etudes et Stratégie.
Bermuda	Worldscope
Brazil	São Paulo Stock Exchange, "Brazil company handbook"
Canada	The Financial Post, "Survey of Industrials"; company web sites from: <a href="http://www.tse.com/">http://www.tse.com/</a> , and Worldscope
Chile	Worldscope
Colombia	Worldscope
Czech Republic	File purchased from the Securities Center of the Czech Republic
Denmark	Worldscope
Egypt	Worldscope
Estonia	<a href="http://www.tse.ee/english/">http://www.tse.ee/english/</a>
Finland	<a href="http://www.huginonline.com/">http://www.huginonline.com/</a> ; company web sites from: <a href="http://www.hex.fi">http://www.hex.fi</a>
France	The Herald Tribune, "French Company Handbook," SFB-Paris Bourse; <a href="http://www.bourse-de-paris.fr/fr/index_fs.htm?nc=2&amp;ni=6&amp;nom=marche">http://www.bourse-de-paris.fr/fr/index_fs.htm?nc=2&amp;ni=6&amp;nom=marche</a> ; company web sites from: <a href="http://www.euronext.com/fr/">http://www.euronext.com/fr/</a>
Germany	Commerzbank, "Wer gehört zu Wem"; Bundesaufsichtsamt für den Wertpapierhandel, "Major Holdings of Voting Rights in Officially Listed Companies"
Greece	Worldscope
Hungary	Worldscope
Indonesia	Asian Company Handbook
Ireland-Rep	London Stock Exchange, "The London Stock Exchange Yearbook"; <a href="http://www.hemscott.co.uk/equities/">http://www.hemscott.co.uk/equities/</a>
Italy	<a href="Http://www.consob.it/">Http://www.consob.it/</a>
Japan	Toyo Keizai Shanposha, "Japan Company Handbook", Tokyo, Japan
Lithuania	Worldscope
Luxembourg	Worldscope
Malaysia	Asian Company Handbook
Mexico	Worldscope
Monaco	Worldscope
Morocco	Worldscope
New Zealand	Datex, "New Zealand Directory of Shareholders" ( <a href="http://www.datex.co.nz/">http://www.datex.co.nz/</a> )
Norway	<a href="http://www.huginonline.com/">http://www.huginonline.com/</a> ; company web sites from: <a href="http://www.ose.no/english/">http://www.ose.no/english/</a>
Philippines	Asian Company Handbook; Philippine Stock Exchange
Poland	Komisja Papierów Wartościowych i Gield, "Ownership of Polish listed firms"
Portugal	Bolsa de Valores de Lisboa e Porto, "Sociedades Cotadas", CD-rom
Romania	<a href="http://www.bvb.ro/">http://www.bvb.ro/</a> ; Worldscope
Russian Fed	Worldscope
Singapore	Asian Company Handbook
Slovak Repub.	Worldscope
Slovenia	<a href="http://www.ljse.si/">http://www.ljse.si/</a> ; Worldscope
South Africa	Worldscope
South Korea	Asian Company Handbook
Spain	Comision Nacional del Mercado de Valores, "Participaciones significativas en sociedades cotizadas"
Sweden	<a href="http://www.huginonline.com/">http://www.huginonline.com/</a>
Switzerland	Union Bank of Switzerland, "Swiss Stock Guide," Zurich
Thailand	Asian Company Handbook
United Kingdom	London Stock Exchange, "The London Stock Exchange Yearbook"; <a href="http://www.hemscott.co.uk/equities/">http://www.hemscott.co.uk/equities/</a>
United States	<a href="http://www.sec.gov/cgi-bin/srch-edgar">http://www.sec.gov/cgi-bin/srch-edgar</a>

Table I. Country distribution of M&amp;A transactions

Country	Bidders		Targets	
	N	%	N*	%
United Kingdom	2,394	65.3	1,723	47.0
France	252	6.9	214	5.8
Sweden	197	5.4	151	4.1
Germany	139	3.8	169	4.6
Spain	120	3.3	138	3.8
Norway	116	3.2	81	2.2
Italy	108	2.9	113	3.1
Finland	102	2.8	75	2.0
Ireland-Rep	99	2.7	44	1.2
Switzerland	51	1.4	32	0.9
Belgium	40	1.1	32	0.9
Portugal	30	0.8	39	1.1
Austria	19	0.5	11	0.3
United States			453	12.4
Netherlands			80	2.2
Australia			50	1.4
Canada			40	1.1
Denmark			35	1.0
Poland			33	0.9
South Korea			20	0.5
Czech Republic			15	0.4
Argentina			13	0.4
Chile; Hungary			11	0.3
Singapore			10	0.3
Hong Kong			9	0.2
Japan			8	0.2
Lithuania			7	0.2
Bulgaria			6	0.2
Israel; Luxembourg; New Zealand; Turkey; Venezuela			4	0.1
Egypt; Estonia; Greece; Lebanon			3	0.1
Bolivia			2	0.1
Armenia; Bosnia; Dominican Rep; Ecuador; Honduras; Latvia; Nigeria; Thailand; Trinidad & Tobago; Yemen			1	0.0
<i>Tot.</i>	<i>3,667</i>	<i>100.0</i>	<i>3,667</i>	<i>100.0</i>

\*Numbers and percentages refer to individual countries.

Table II. Descriptive statistics by payment method

Panel A. Method of payment choice and control rights of bidders' dominant shareholders  
for the 1997-2000 period - - Country-level results

CASH ONLY includes deals that were financed only with "cash". This includes actual cash, liabilities and newly issued notes. STOCK ONLY includes deals that were financed only with stock. MIXED PYMT includes payments consisting of both "cash" and "stocks". AVERAGE CONTROL RIGHTS is the average, across all bidders, of the ultimate voting stake held by the bidder's largest shareholder. This is defined as the weakest link along the control chain. So, if a family owns 50% of Firm X that owns 10% of Firm Y, then we say this family controls 10% of Firm Y. This variable captures the effect of dual-class shares, pyramids, and cross-holdings. Control is defined as an investor group with at least 10 percent voting power. All other variables are described in Appendix A.

	No.	CASH ONLY	MIXED PYMT*	STOCK ONLY	AVERAGE CONTROL RIGHTS
Number	3,667	2,942	416	309	
Austria	19	100.00	0.00	0.00	43.05
Belgium	40	87.50	2.50	10.00	32.04
Finland	102	65.69	9.80	24.51	35.95
France	252	78.97	5.95	15.08	30.01
Germany	139	84.89	5.04	10.07	30.57
Ireland	99	83.84	9.09	7.07	18.93
Italy	108	86.11	0.93	12.96	40.06
Norway	116	68.97	18.97	12.07	24.06
Portugal	30	90.00	0.00	10.00	35.82
Spain	120	79.17	5.83	15.00	27.65
Sweden	197	83.25	4.57	12.18	28.18
Switzerland	51	82.35	3.92	13.73	26.43
United Kingdom	2,394	80.20	13.91	5.89	17.93
<i>Whole sample</i>	3,667	80.23	11.34	8.43	<i>22.00</i>
LISTED TARGET	582	59.97	13.23	26.80	
UNLISTED TARGET	1,727	79.62	15.00	5.39	
SUBSIDIARY	1,358	89.69	5.89	4.42	

\* Mean percent cash in the mixed deals is 56.9% and the median is 60.7%.

Panel B: Mean and median values of explanatory variables

In order to avoid problems with outliers, when computing the stock price run-up, we exclude observations with a value equal or above 5. In addition, we require the book value of equity to be positive. The variable definitions are given in Appendix A.

Variable	CASH ONLY	MIXED PYMT	STOCK ONLY	UK and Irish bidders	Cont'l European bidders	All bidders
Averages and medians (in italics) for continuous variables						
COLLATERAL	0.38 <i>0.33</i>	0.31 <i>0.23</i>	0.27 <i>0.14</i>	0.41 <i>0.34</i>	0.27 <i>0.23</i>	0.37 <i>0.30</i>
FIN'L LEVERAGE	0.31 <i>0.29</i>	0.40 <i>0.36</i>	0.45 <i>0.44</i>	0.34 <i>0.30</i>	0.32 <i>0.31</i>	0.33 <i>0.30</i>
TOTAL ASSETS (m US\$)	36,593 697	30,254 187	24,108 473	18,857 361	68,505 2,467	34,843 584
CONTROL (%)	21.90 <i>15.74</i>	20.54 <i>15.74</i>	24.98 <i>17.80</i>	17.93 <i>14.60</i>	30.65 <i>26.40</i>	22.00 <i>15.74</i>
CONTROL LOSS (%)	6.18 <i>2.39</i>	11.54 <i>5.47</i>	8.50 <i>4.29</i>	6.95 <i>2.79</i>	7.01 <i>2.38</i>	6.97 <i>2.69</i>
REL SIZE	0.07 <i>0.03</i>	0.16 <i>0.08</i>	0.18 <i>0.15</i>	0.09 <i>0.03</i>	0.10 <i>0.04</i>	0.09 <i>0.03</i>
RUNUP	0.05 <i>0.02</i>	0.10 <i>0.03</i>	0.13 <i>0.03</i>	0.06 <i>0.02</i>	0.08 <i>0.02</i>	0.07 <i>0.02</i>
MKT-TO-BOOK	2.00 <i>1.42</i>	2.53 <i>1.75</i>	2.53 <i>1.60</i>	2.18 <i>1.55</i>	1.93 <i>1.34</i>	2.11 <i>1.46</i>
DEAL VALUE (m US\$)	209 <i>16</i>	1,073 <i>15</i>	3,529 <i>62</i>	376 <i>12</i>	1,021 <i>50</i>	578 <i>17</i>
MKT RUNUP	0.05 <i>0.02</i>	0.04 <i>0.02</i>	0.08 <i>0.02</i>	0.04 <i>0.02</i>	0.09 <i>0.03</i>	0.05 <i>0.02</i>
Averages for binary variables						
20% < CONTROL < 60%	0.31	0.25	0.33	0.24	0.44	0.30
WEAK VOTING RIGHTS	0.11	0.09	0.13	0.06	0.20	0.11
INTERLOCK	0.18	0.19	0.11	0.18	0.18	0.18
INTRA-INDUSTRY	0.32	0.35	0.46	0.33	0.35	0.34
CROSS BORDER	0.45	0.22	0.31	0.35	0.54	0.41
UNLISTED TARGET	0.47	0.62	0.30	0.52	0.38	0.47
SUBSIDIARY	0.41	0.19	0.19	0.38	0.35	0.37



Table III. Tobit regressions explaining the percent cash financing in M&A deals

Estimation is based on a two boundary Tobit model to reflect lower and upper bound constraints on the dependent variable. Z-stats are based on QML (Huber/White) heteroscedasticity-consistent standard errors. In order to avoid problems with outliers, when computing the stock price run-up, we exclude observations with a value equal or above 5. Furthermore, we always require the book value of equity to be positive. Symbols \*, \*\*, and \*\*\* denote significance at the 1%, 5% and 10% level, respectively. The variable definitions are given in Appendix A.

	Whole sample		UK & Irish bidders		Continental European bidders			
	Coeff.	z-stat.	Coeff.	z-stat.	Coeff.	z-stat.	Coeff.	z-stat.
CONTROL	-2.04 ***	(-1.91)	-2.61 **	(-2.55)	4.52	(0.97)	2.50 *	(3.13)
CONTROL^2	0.081 **	(2.27)	0.102 *	(2.69)	-0.079	(-0.60)		
CONTROL^3	-0.001 **	(-2.22)	-0.001 *	(-2.79)	0.001	(0.71)		
CONTROL LOSS	-0.18	(-0.27)	-0.39	(-0.58)	0.25	(0.10)	0.22	(0.09)
COLLATERAL	116.12 *	(6.94)	90.89 *	(5.87)	177.69 **	(2.34)	177.17 **	(2.34)
FIN'L LEVERAGE	-48.81 *	(-3.72)	-40.42 *	(-3.49)	-94.91	(-1.62)	-96.46 ***	(-1.65)
INTERLOCK	27.03 **	(2.55)	14.64	(1.57)	103.41	(2.16)	103.21 **	(2.16)
LOG (TOTAL ASSETS)	7.36 *	(3.01)	6.83 **	(2.42)	18.57 **	(2.28)	18.33 **	(2.21)
REL SIZE	-252.77 *	(-4.28)	-158.73 *	(-2.73)	-617.39 *	(-2.91)	-613.61 *	(-2.92)
RUNUP	-59.79 *	(-2.86)	-36.51 ***	(-1.93)	-285.97 *	(-2.96)	-286.88 *	(-2.99)
UNLISTED TARGET	104.35 *	(6.03)	101.68 *	(5.48)	173.01 *	(3.24)	173.24 *	(3.19)
SUBSIDIARY	155.84 *	(8.47)	152.17 *	(7.79)	204.11 *	(3.68)	204.40 *	(3.66)
INTRA-INDUSTRY	-17.34 **	(-2.05)	-14.51 ***	(-1.82)	-30.70	(-0.95)	-31.03	(-0.96)
MKT-TO-BOOK	-9.02 *	(-4.26)	-6.93 *	(-3.58)	-19.98 **	(-2.44)	-20.26 **	(-2.46)
CROSS BORDER	58.34 *	(6.20)	45.42 *	(4.87)	118.16 *	(3.52)	118.93 *	(3.52)
MKT RUNUP	-68.75	(-1.34)	-109.17 ***	(-1.68)	38.76	(0.25)	39.34	(0.25)
INTERCEPT	39.61	(0.98)	25.91	(0.60)	-88.34	(-0.62)	-75.36	(-0.54)
No. Obs.	2,775		2,014		761		761	
Scale factor ( $\sigma$ )	135.37		107.12		261.86		262.07	
{ $\Phi_{100} - \Phi_0$ } (Lower quartile)	0.287		0.358		0.151		0.151	
{ $\Phi_{100} - \Phi_0$ } (Median)	0.287		0.249		0.133		0.133	
{ $\Phi_{100} - \Phi_0$ } (Upper quartile)	0.020		0.015		0.029		0.026	
Adjusted R-squared	20.72%		23.05%		18.06%		18.36%	

Table III. Tobit regressions explaining the percent cash financing in M&A deals

Panel B. Continental European bidders

	Coeff.	z-stat.	Coeff.	z-stat.
FRENCH_LAW_B	34.525	(0.24)	12.820	(0.08)
GERMANIC_LAW_B	109.845	(0.69)	-32.952	(-0.18)
SCANDINAVIAN_LAW_B	-29.646	(-0.21)	-32.482	(-0.23)
FRENCH_LAW_B*CONTROL			2.204	** (2.06)
GERMANIC_LAW_B*CONTROL			9.589	* (2.61)
SCANDINAVIAN_LAW_B*CONTROL			1.532	(1.39)
CONTROL	2.140	* (2.64)		
CONTROL LOSS	-0.110	(-0.05)	-0.245	(-0.10)
COLLATERAL	193.113	** (2.52)	190.347	** (2.48)
FIN'L LEVERAGE	-105.897	*** (-1.84)	-106.227	*** (-1.84)
INTERLOCK	97.702	** (2.04)	95.810	** (2.00)
LOG (TOTAL ASSETS)	12.543	(1.48)	13.925	(1.62)
REL SIZE	-600.027	* (-2.86)	-588.654	* (-2.80)
RUNUP	-291.458	* (-3.09)	-300.751	* (-3.10)
UNLISTED TARGET	189.202	* (3.42)	191.377	* (3.45)
SUBSIDIARY	214.423	* (3.79)	216.408	* (3.80)
INTRA-INDUSTRY	-35.402	(-1.10)	-36.232	(-1.13)
MKT-TO-BOOK	-20.830	** (-2.55)	-21.607	* (-2.61)
CROSS BORDER	118.962	* (3.54)	116.082	* (3.50)
MKT RUNUP	56.961	(0.37)	73.366	(0.48)
No. Obs	761		761	
Scale factor ( $\sigma$ )	260.45		259.64	
{ $\Phi_{100} - \Phi_0$ } (Lower quartile)	0.152		0.152	
{ $\Phi_{100} - \Phi_0$ } (Median)	0.148		0.150	
{ $\Phi_{100} - \Phi_0$ } (Upper quartile)	0.021		0.017	
Log likelihood	-615.93		-614.56	

Table IV. Robustness tests for Tobit regressions explaining the percent cash financing in M&A deals

Estimation is based on a two boundary Tobit model to reflect lower and upper bound constraints on the dependent variable. Z–stats are based on QML (Huber/White) heteroscedasticity–consistent standard errors. In order to avoid problems with outliers, when computing the average standard deviation of the bidder’s stock price, we exclude observations with a value equal or above 2. When computing the stock price run–up, we exclude observations with a value equal or above 5. Finally, we require the book value of equity to be positive. Symbols \*, \*\*, and \*\*\* denote significance at the 1%, 5% and 10% level, respectively. The variable definitions are given in Appendix A.

	(1)		(2)		(3)		(4)		(5)	
	Coeff.	z–stat	Coeff.	z–stat	Coeff.	z–stat	Coeff.	z–stat	Coeff.	z–stat
PRIORFIN	0.94 *	(6.68)								
TARG. IND.CASH MERGER			1.40 *	(5.93)						
TENDER OFFER					–75.56 *	(–5.03)				
ASSET ACQ. CODE					68.59 *	(3.48)				
STNDDEV BIDDER LIQUIDITY					0.17	(0.01)				
MERGER TAX BEN							–272.67 **	(–2.07)		
CAPITAL GAINS							5.54	(0.65)		
CONTROL									–20.88 **	(–2.27)
CONTROL^2	–1.013	(–0.87)	–1.541	(–1.46)	–2.059	(–1.95)	–2.252	(–1.51)	4.90	(0.45)
CONTROL^3	0.049	(1.17)	0.065	(1.84)	0.078	(2.23)	0.106	(2.19)	–2.097	(–1.94)
CONTROL LOSS	–0.0004	(–1.16)	–0.001	(–1.86)	–0.001	(–2.15)	–0.001	(–2.20)	0.080	(2.20)
COLLATERAL	–0.04	(–0.06)	–0.28	(–0.42)	0.10	(0.16)	–0.02	(–0.02)	–0.28	(–0.41)
FIN'L LEVERAGE	102.55 *	(6.01)	90.41 *	(5.44)	100.61 *	(6.14)	129.09 *	(5.22)	119.92 *	(7.11)
INTERLOCK	–42.08 *	(–3.24)	–49.57 *	(–3.78)	–47.09 *	(–3.69)	–57.41 *	(–3.13)	–48.48 *	(–3.72)
LOG (TOTAL ASSETS)	21.74 **	(2.07)	22.51 **	(2.13)	27.90 *	(2.66)	30.65 **	(2.01)	25.85 **	(2.42)
REL SIZE	8.32 *	(3.24)	8.10 *	(3.35)	7.70 *	(3.08)	5.24	(1.55)	6.17 **	(2.44)
RUNUP	–253.90 *	(–4.35)	–228.87 *	(–3.97)	–228.93 *	(–3.95)	–293.09 *	(–3.67)	–245.93 *	(–4.13)
UNLISTED TARGET	–48.82 **	(–2.41)	–46.63 **	(–2.22)	–55.01 **	(–2.54)	–52.44 *	(–1.63)	–58.55 *	(–2.78)
SUBSIDIARY	92.08 *	(5.34)	110.89 *	(6.41)	113.52 *	(5.53)	96.48 *	(4.29)	107.32 *	(6.14)
INTRA–INDUSTRY	144.74 *	(7.77)	156.88 *	(8.60)	151.17 *	(6.95)	154.81 *	(6.36)	158.72 *	(8.57)
MKT–TO–BOOK	–14.67 ***	(–1.69)	–13.83 ***	(–1.65)	–16.36 **	(–1.97)	–17.57	(–1.50)	–18.78 ***	(–1.79)
CROSS BORDER	–7.45 *	(–3.77)	–7.48 *	(–3.57)	–8.96 *	(–4.36)	–11.65 *	(–3.95)	–8.94 *	(–4.17)
MKT RUNUP	41.47 *	(4.28)	55.22 *	(5.88)	55.88 *	(5.98)	73.87 *	(5.68)	45.63 *	(4.06)
INTERCEPT	–82.30	(–1.47)	–85.26 ***	(–1.66)	–91.98 ***	(–1.83)	6.12	(0.09)	–74.96	(–1.47)
	–56.97	(–1.31)	–83.02 ***	(–1.90)	49.51	(1.11)	102.29 ***	(1.69)	90.72 ***	(1.90)
No. Obs.	2,315		2,741		2,772		1,712		2,759	
Scale factor ( $\sigma$ )	124.99		133.08		131.70		141.69		135.52	
{ $\Phi_{100} - \Phi_0$ } (Lower quartile)	0.307		0.292		0.292		0.265		0.286	
{ $\Phi_{100} - \Phi_0$ } (Median)	0.305		0.292		0.293		0.266		0.279	
{ $\Phi_{100} - \Phi_0$ } (Upper quartile)	0.022		0.019		0.059		0.016		0.025	
Adjusted R–squared	22.55%		22.73%		23.13%		21.84%		20.79%	

Table IV. Robustness tests for Tobit regressions explaining the percent cash financing in M&amp;A deals (Cont'd)

	(6)		(7)		(8)		(9)	
	Coeff.	z-stat	Coeff.	z-stat	Coeff.	z-stat	Coeff.	z-stat
WEAK VOTING RIGHTS	5.60	(0.41)						
CASH HOLDINGS	-0.89 **	(-2.35)						
EURO ZONE			-48.55 *	(-3.06)				
GROUP BANK					16.72	(1.05)		
INTRA-CORPORATE GROUP CONTROL							-94.20 *	(-4.11)
CONTROL	-2.105 ***	(-1.92)	-2.397 **	(-2.20)	-2.175 **	(-2.02)	-2.170 **	(-2.05)
CONTROL^2	0.082 **	(2.23)	0.101 *	(2.70)	0.084 **	(2.34)	0.089 **	(2.50)
CONTROL^3	-0.001 **	(-2.16)	-0.001 *	(-2.67)	-0.001 **	(-2.28)	-0.001 **	(-2.45)
CONTROL LOSS	-0.26	(-0.37)	0.15	(0.22)	-0.16	(-0.23)	-0.08	(-0.11)
COLLATERAL	107.65 *	(6.27)	96.40 *	(5.64)	115.66 *	(6.94)	112.59 *	(6.79)
FIN'L LEVERAGE	-51.52 *	(-3.95)	-47.23 *	(-3.58)	-47.43 *	(-3.60)	-48.99 *	(-3.75)
INTERLOCK	27.61 *	(2.59)	32.53 *	(3.03)	27.07 **	(2.55)	26.30 **	(2.49)
LOG (TOTAL ASSETS)	6.46 *	(2.58)	12.50 *	(5.22)	7.33 *	(3.00)	7.66 *	(3.15)
REL SIZE	-248.65 *	(-4.19)	-273.60 *	(-4.66)	-256.09 *	(-4.31)	-266.86 *	(-4.49)
RUNUP	-61.06 *	(-2.89)	-64.97 *	(-3.22)	-59.43 *	(-2.85)	-56.33 *	(-2.74)
UNLISTED TARGET	105.88 *	(6.08)	106.16 *	(6.02)	104.50 *	(6.04)	96.95 *	(5.67)
SUBSIDIARY	156.99 *	(8.49)	156.10 *	(8.34)	155.89 *	(8.47)	155.80 *	(8.52)
INTRA-INDUSTRY	-17.31 **	(-2.05)	-14.57 ***	(-1.72)	-17.34 **	(-2.06)	-16.74 **	(-2.01)
MKT-TO-BOOK	-8.40 *	(-4.01)	-7.89 *	(-3.68)	-9.21 *	(-4.40)	-9.08 *	(-4.31)
CROSS BORDER	61.25 *	(6.34)			58.65 *	(6.22)	57.55 *	(6.24)
MKT RUNUP	-65.57	(-1.26)	-46.59	(-0.93)	-67.28	(-1.31)	-49.43	(-0.92)
INTERCEPT	61.53	(1.47)	-1.81	(-0.05)	40.01	(0.99)	42.69	(1.06)
No. Obs.	2,763		2,775		2,775		2,775	
Scale factor ( $\sigma$ )	135.59		137.12		135.29		133.84	
{ $\Phi_{100} - \Phi_0$ } (Lower quartile)	0.284		0.284		0.288		0.286	
{ $\Phi_{100} - \Phi_0$ } (Median)	0.285		0.285		0.287		0.285	
{ $\Phi_{100} - \Phi_0$ } (Upper quartile)	0.022		0.059		0.024		0.025	
Adjusted R-squared	21.04%		19.38%		21.26%		21.46%	

Table V. Ordered probit regressions explaining the choice of all cash, all stocks or mixed payments

In all models, the dependent variable takes a value of 2 for all cash deals, 1 for mixed deals, and 0 for all stock deals. Z-stats are based on QML (Huber/White) heteroscedasticity-consistent standard errors. In order to avoid problems with outliers when computing stock price run-up, we exclude observations with a value equal to or above 5. Furthermore, we always require book value of equity to be positive. Symbols \*, \*\*, and \*\*\* denote significance at the 1%, 5% and 10% level, respectively. The variable definitions are given in Appendix A.

	Whole sample			UK & Irish bidders		Continental European bidders						
	Coeff.		z-stat	Coeff.	z-stat	Coeff.	z-stat	Coeff.	z-stat			
CONTROL	-0.015	***	(-1.89)	-0.024	**	(-2.51)	0.017	(0.98)	0.009	*	(3.49)	
CONTROL^2	0.0006	**	(2.30)	0.0010	*	(2.69)	-0.0003	(-0.60)				
CONTROL^3	-0.00001	**	(-2.28)	-0.00001	*	(-2.83)	0.000003	(0.69)				
CONTROL LOSS	-0.004		(-0.80)	-0.008		(-1.17)	-0.00004	(0.00)	-0.0001		(-0.01)	
COLLATERAL	0.861	*	(7.26)	0.861	*	(6.14)	0.676	**	(2.42)	0.675	**	(2.43)
FIN'L LEVERAGE	-0.392	*	(-4.05)	-0.425	*	(-3.91)	-0.358		(-1.62)	-0.363	***	(-1.65)
INTERLOCK	0.188	**	(2.39)	0.121		(1.36)	0.398	**	(2.23)	0.397	**	(2.23)
LOG (TOTAL ASSETS)	0.059	*	(3.25)	0.068	*	(2.59)	0.072	**	(2.38)	0.071	**	(2.31)
REL SIZE	-1.661	*	(-3.82)	-1.214	**	(-2.22)	-2.286	*	(-2.98)	-2.275	*	(-2.99)
RUNUP	-0.435	*	(-2.80)	-0.327	***	(-1.83)	-1.093	*	(-3.11)	-1.096	*	(-3.13)
UNLISTED TARGET	0.773	*	(6.42)	0.939	*	(5.68)	0.676	*	(3.71)	0.675	*	(3.67)
SUBSIDIARY	1.159	*	(9.08)	1.423	*	(8.21)	0.789	*	(4.11)	0.788	*	(4.09)
INTRA-INDUSTRY	-0.110	***	(-1.77)	-0.112		(-1.51)	-0.112		(-0.91)	-0.112		(-0.91)
MKT-TO-BOOK	-0.067	*	(-4.37)	-0.066	*	(-3.70)	-0.075	**	(-2.49)	-0.076	**	(-2.52)
CROSS BORDER	0.425	*	(6.17)	0.422	*	(4.82)	0.438	*	(3.65)	0.440	*	(3.67)
MKT RUNUP	-0.528		(-1.41)	-1.058	***	(-1.73)	0.125		(0.21)	0.127		(0.21)
INTERCEPT 1	-0.216		(-0.72)	-0.164		(-0.40)	0.360		(0.67)	0.302		(0.57)
INTERCEPT 2	0.502	***	(1.67)	0.732	***	(1.78)	0.748		(1.38)	0.689		(1.29)
N Obs	2,775			2,014			761			761		
Pseudo-R <sup>2</sup>	16.49%			18.03%			16.99%			16.95%		
Log likelihood	-1,410.21			-997.93			-373.68			-373.87		

Table VI. Predicting bidders using a probit model

This table presents estimates from a probit model predicting which firms will be bidders. The dependent variable is a dummy that equals one if a firm announces a bid over the 1997-2000 period, and zero otherwise. Z-stats are based on QML (Huber/White) heteroscedasticity-consistent standard errors. In order to avoid problems with outliers when computing industry M&A activity, we exclude observations with values equal to or above one. In addition, we require the book value of equity to be positive; asset growth to be less than 5 (e.g., 500%); and the ratio (CAPEX+R&D)/(total assets) to be between 0 and 100 percent. Symbols \*, \*\*, and \*\*\* denote significance at the 1%, 5% and 10% levels, respectively. Variable definitions are given in Appendix A.

Variable	All European bidders		UK and Irish bidders		Cont. European bidders	
	Coeff.	z-Stat.	Coeff.	z-Stat.	Coeff.	z-Stat.
CONTROL	-0.007 *	(-6.81)	-0.007 *	(-3.69)	-0.007 *	(-4.84)
WEAK VOTING RIGHTS	0.118 ***	(1.74)	0.107	(0.84)	0.106	(1.26)
COLLATERAL	0.306 *	(2.65)	0.990 *	(5.74)	-0.235	(-1.36)
LEVTOT	5.196 *	(9.30)	4.168 *	(5.89)	4.715 *	(4.65)
LEVTOT^2	-4.082 *	(-8.34)	-2.489 *	(-3.66)	-4.356 *	(-5.24)
INTERLOCK	0.054	(0.84)	0.158 ***	(1.66)	-0.033	(-0.37)
LOG (TOTAL ASSETS)	0.173 *	(12.32)	0.121 *	(5.73)	0.217 *	(10.20)
MKT-TO-BOOK	0.074 *	(2.76)	0.068 **	(2.28)	0.094 *	(2.61)
ASSET GROWTH	0.255 *	(4.24)	0.177 **	(2.22)	0.311 *	(3.53)
(CAPEX+R&D)/(TOTAL ASSETS)	1.011 *	(2.89)	0.149	(0.29)	1.666 *	(3.56)
NYLN BIDDER	0.957 *	(16.95)	0.555 *	(4.50)	1.349 *	(8.64)
MARKET SHARE	0.001	(0.85)	-0.001	(-0.37)	0.002	(1.34)
INDUSTRY M&A ACTIVITY	0.257	(0.75)	0.076	(0.17)	0.109	(0.19)
HIGH TECH	0.327 *	(2.84)	0.043	(0.28)	0.451 *	(2.84)
CASH HOLDINGS	0.746 *	(3.47)	1.252 *	(4.22)	0.288	(0.95)
NET WORKING CAPITAL/TA	0.128	(0.81)	0.711 *	(3.01)	-0.241	(-1.10)
INTERCEPT	-4.764 *	(-17.85)	-3.959 *	(-11.50)	-4.815 *	(-10.39)
No. Obs.	3,720		1,555		2,165	
Log likelihood	-1,840.8		-907.7		-887.4	
McFadden R-squared	21.26%		15.48%		22.10%	

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<sup>1</sup> See the recent paper by Gadhoun, Lang and Young (2003) for further details.

<sup>2</sup> Debt would dominate stock as the funding source for a cash payment given debt's lower flotation costs and the loss of potential tax free capital gains treatment of the deal.

<sup>3</sup> In Fishman's model, there is a choice between paying cash and a risky debt security, rather than stock.

<sup>4</sup> For example, Amihud, Lev and Travlos (1990) examine 209 acquisitions by Fortune 500 firms over 1981-1983 and find buyer management and board shareholdings reduce the probability of stock offers, controlling for target sales. Ghosh and Ruland (1998) extend Martin's study by examining shareholdings of target managers using a sample of 212 large US acquisitions. They also report stock financed acquisitions significantly decrease over an intermediate range of buyer management shareholdings, but find they significantly increase with target management shareholdings.

<sup>5</sup> Martin has the widest set of statistical controls for deal characteristics including: buyer institutional ownership, cash holdings, leverage and profits divided by deal value, a tender offer indicator and several business cycle variables.

<sup>6</sup> We have only three cases in the final sample where shares with inferior or no voting rights are offered. Recent studies by Pajuste (2003) for Denmark, Finland, Germany, Italy, Norway, Sweden and Switzerland, and Dittmann and Ulbricht (2003) for Germany, have documented a substantial decline in the use of dual class shares. Faccio and Lang (2002) document that, although dual class shares structures are used in Europe to enhance the control of the largest shareholders, only in a few countries do they result in significant discrepancies between ownership and control.

<sup>7</sup> Nenova (2003) and Dyck and Zingales (2004) document substantial benefits to corporate control in Europe.

<sup>8</sup> Krozner and Strahan (2001) argue that board links between banks and non-financial firms do not systematically lead to conflicts of interests, or a misuse of funds in the US.

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<sup>9</sup> Eckbo, Giammarino and Heinkel (1990) develop an alternative asymmetric information model that predicts that a mix of cash and stock is chosen to convey information about the bidder's true value, where the revealed value is a positive and convex function of the amount of cash in the offer.

<sup>10</sup> We checked the outliers in "deal value" for data errors using Lexis-Nexis and found (and fixed) a number of mistakes in the SDC database. Updated figures for these problem "deal value" cases are available from the authors upon request.

<sup>11</sup> Their study covers the main segment of each stock exchange, and mostly focused on the 1996/97 period. Thus, it generally does not allow us to track the ownership of firms that went public after 1997.

<sup>12</sup> Earn-out is an amount to be paid over time (generally in cash) if the target company meets certain financial performance criteria.

<sup>13</sup> See Amemiya (1984), Maddala (1984) and Wooldridge (2002) for more detailed discussions of alternative Tobit specifications.

<sup>14</sup> The transition points for the UK-Irish sample are similar at 16.86 and 53.72 percent.

<sup>15</sup> This is consistent with expected losses on loans falling and lender information about borrower asset value rising with the percentage of tangible assets. A number of studies including Hovakimian, Opler and Titman (2001) find tangible assets to be a significant determinant of firm debt level.

<sup>16</sup> We also examine these effects for target legal systems and find little difference across countries except that cash payments are more likely when the target is in a Socialist country, which could reflect weaker shareholder rights.

<sup>17</sup> See for example DeAngelo and Masulis (1980) or Hovakimian, Opler and Titman (2001) for further discussion of these theories and evidence.

<sup>18</sup> Detailed information on the tax codes (i.e., on exemptions, etc...) for all the countries with target firms in our sample is not always available. Moreover, we have very limited information on the target firms themselves such as the depreciation on assets, etc.



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<sup>19</sup> The US tax code allows for tax-free mergers and acquisitions, under a variety of conditions, the most important being that at least fifty percent of the target's shares are exchanged for stocks. If conditions for a tax-free deal are met, then capital gain associated with the stock portion of the purchase price can be tax deferred; otherwise the entire the entire unrealized capital gain is taxed. Those offers must include at least fifty percent stock, to obtain this tax benefit. For non-US targets the tax implications are much more varied. Most countries offer no tax advantage to equity financed M&A transactions. However, some countries provide exemptions. In Ireland, capital gains are normally taxed at the standard corporate rate. A special tax exemption exists for business-related assets when sale proceeds are used to acquire new or similar assets within one year before or three years after the disposal date. In the UK, capital gains arising from acquisitions can normally be deferred if shareholders are compensated with shares or bonds rather than cash, provided the enlarged company continues in the same line of business. In addition, mergers create no taxable gains. If Canadian shareholders exchange shares for cash in a merger or takeover, they are taxed on the capital gain. Acquisitions offering optional payment in cash or shares permit a tax-free treatment when shares are chosen.

<sup>20</sup> Martin (1996) documents a higher likelihood of stock financing by cash rich bidders, while Chaney, Lovata and Philipich (1991) find the opposite result.

<sup>21</sup> In the U.K., banks need approval from the Bank of England to hold shares, and are subject to ceilings; other financial firms are only benchmarked against the "prudent man". Until recently, German universal banks faced almost no limitations on their equity holdings, but insurance companies could not invest more than 20% of their assets in equities (Prowse, 1994). Until 1994, Italian banks were forbidden to hold equity stakes in non-financial firms. European Union Directives (plus national laws), place ceilings on equity stakes for financial institutions; banks also face upper limits on "large loans". The German Banking Act (1994) disciplines loans to related parties, i.e., where either borrower or lender holds more than 10% of the counter-party's capital. Such loans can be granted only if supported by all the lender's managers and approved by the supervisory board. In addition, when loans to related parties exceed 5% of

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the lender's capital and exceed 250,000 DM, they must be reported to the Banking Supervisory Office and the Central Bank.

<sup>22</sup> Faccio et al. (2001) identified group affiliation for 5 out of the 13 Western European countries employed in our study. We extend their work to the remaining 8 bidder countries. To our knowledge, ours is the first study to exploit such detailed group-affiliation data.

<sup>23</sup> See Wooldridge (2003) p.564.