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Decoupling by Clienteles and by Time in the Financial Markets:
The Case of Two-Stage Stock-Financed Mergers

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Abstract

A two-stage stock-financed merger occurs when an acquiring firm first issues shares, and then engages in a cash acquisition shortly afterward. Such deals allow us to test two important hypotheses derived from decoupling: by clienteles via segmentation and by time. The acquirer's value is maximized by selling shares to investors preferring to hold them, and use the raised cash to pay the target shareholders (decoupling by clienteles hypothesis). Two-stage deals also provide an option to the acquirers by allowing them to decouple their own shares from the correlated target's shares by issuing at an earlier date and wait for good acquisition opportunities (time decoupling hypothesis). We find empirical evidence in support of both hypotheses.

JEL Classifications: G32; G34

Keywords: Decoupling hypothesis; market segmentation; mergers and acquisitions; method of payment; SEO/IPO; use of proceeds

1. Introduction

We introduce ‘the principle of decoupling’ as a value-increasing corporate strategy. It has wide ranging applications from capital budgeting, to restructuring, to leveraged recapitalization, and to mergers. We apply the principle to mergers, in which we show firm value could be optimized by separating *the clienteles* (via segmentation) in the financing of the merger from *those in the* purchase of the target. The second application is the decoupling of the same security (or two highly-correlated securities) into its availability at different time periods.¹ The securities that are highly correlated to other securities would be transformed from having high contemporaneous correlation to low correlation under time shift. When applied to mergers, the time decoupling strategy enables acquirers to issue their own stocks for cash in one period, and to use the cash to acquire same industry (highly contemporaneously correlated) firms in a later period. We obtain empirical verifications of both mechanisms in this paper.

Of the cash-only mergers by publicly traded acquirers during the period January 1985 to July 2008, 15.3% may actually have been financed by stock issues in the preceding 12 months through seasoned equity offerings (SEOs) or initial public offerings (IPOs). These mergers can be viewed as *two-stage stock-financed cash mergers*: stocks issued for cash, which in turn was used to finance acquisitions a few months later. Such mergers can be of great value to academic research, because they call attention to the fact that, underlying many financial transactions, there are actually two separate but related decisions. The first is the financing decision (source of funds) and the second is the investment decision (use of funds). These stock-financed cash acquisitions provide us with convenient data to disentangle the

¹ An example of a same security/commodity under time shift is oil; oil available in September is not worth the same as oil to be available next March (as indicated by the oil futures contracts).

confounding effects of these two decisions, and to tests two important hypotheses: *the decoupling by clienteles (or the segmentation)* and *the decoupling by time hypotheses*.

If the capital markets are segmented,² the acquiring firms could exploit this market preference. An acquirer may perform this mental calculation: “*Would it be better to offer stocks to target’s shareholders who may not want our stock (or else they would have already owned them, and even if they do, they may not want more of them)? Or, would it be better to issue stocks to those who want to hold it (and thus are willing to pay a higher price), and use the cash raised to pay the target’s shareholders in a two-stage stock-financed cash acquisitions?*” Thus a prediction of the market segmentation hypothesis is that the more specific the clientele³ the firm attracts (e.g., stated purpose for use of funds is to make acquisition), the more positive is the market response to the new equity issued.

The second financing principle we introduce in this paper is the idea of time decoupling. Our motivation is in response to these challenges: 1) if many stock acquisitions are motivated by acquirers with overvalued shares acquiring targets with lesser or no overvaluation, how could an acquirer with overvalued shares do the same to acquire same industry firms when all firms in the industry are likely to be similarly overvalued? 2) How could an acquirer make essentially a stock offer for a

² For instance, there may be some investors preferring to hold shares of one firm while others preferring to hold that of another firm, due to difference in dividend policy (see Baker and Wurgler, 2004), idiosyncratic risks, leverage, or even “greenness”, etc. Investors’ segmentation principle has been applied also in international finance literature. For example, some studies show that market segmentation can arise due to direct or indirect investment barriers such as ownership restrictions, regulatory barriers, taxes, and information constraints (see Bailey and Jagtiani, 1994; Domowitz et al., 1997). In addition, ADRs have abnormal returns around the time of cross-border listings, which also serve as evidence of market segmentation (see Foerster and Karolyi, 1999).

³ In this case, by “clienteles” we mean the subset of investors who believe that acquisition is a good corporate strategy for this particular firm.

diversifying acquisition in periods when its share price is low?⁴ The solution is to use the principle of time decoupling. We hypothesize and test that acquirers applying the time decoupling principle are able: a) to make relatively more same industry acquisitions when their industries' share prices are depressed, and b) to make relatively more diversifying acquisitions when their own stocks are depressed.

Our empirical results support both hypotheses. Consistent with the prediction of the decoupling by clienteles hypothesis, we find the wealth effects to the shareholders of the acquiring firms in two-stage stock-financed cash acquisitions are statistically greater than that of stock-financed acquisitions. For example, we find that while there is a positive announcement effect (within 3 days around the announcement) of +0.568% for the matching simple stock-financed M&A samples, the stock-financed cash merger sample has a significantly higher announcement effect of +1.099%. Furthermore, when, during the issuance, the firms specifically state that they will use the funds for acquisitions, they receive a better market reaction.

In another test, we show that, consistent with market segmentation hypothesis, market discount to the stock issuance (an SEO) announcement by the firm catering to the desired clientele is less than the market discount demanded by the non-clientele to hold the same stocks. The relative market discount given to the less willing clienteles (i.e., the shareholders of the target firms in a typical stock deal) is +8.04% (+4.60%) versus -0.48% (+0.36%) for the more sympathetic investors in an SEO, based on 2 digit (3-digit) SIC industry median comparisons.

We present several empirical tests in support of the time decoupling hypothesis. One implication of this hypothesis is that for favorable decoupling to materialize,

⁴ As we explain in the next section, we do not claim that the firms have a good market timing ability. Rather, we are considering the real option that many firms are creating for themselves then they decouple in time the financing and the investment decisions.

valuation of equity issues are to occur in periods when the acquiring firm's industry valuation is higher, and is greater than their valuation in the periods they made the acquisition offer. We find that the median industry (using 3-digit SICs) market-to-book value of the two-stage acquirers during the quarter of the IPO/SEO exceeds the median industry market-to-book during the acquisition quarter in 56.5% of the time (significant at 1% level). The results from the Rhodes-Kropf, et al.'s (2005) decomposition also suggests that acquirers are announcing deals in the quarters when their sector-wide valuation is significantly lower than it is during the IPO/SEO issuance quarters.

The second test demonstrates an advantage of decoupling in allowing acquirers to essentially use stocks to acquire same industry firms in periods when the industry valuation is low. We find, of the same industry acquisitions, +8.85% of two-stage acquisitions occurred in periods when the industry market to book was below its historical median, versus only +5.62% (+6.62%) of single-stage stock (cash) mergers.

Finally, our unique two-stage acquisitions sample yields another contribution to the literature. Because we separate the financing decision from the investment decision of an acquisition, a byproduct of the decoupling principle is to solve the confounding empirical problem of whether the market is responding (upon announcement of the deal) to the financing choice, or to the investment choice (quality of the target). More specifically, in the case of stock deals, does the market responds to a revelation of an overvalued stock, or to the poor choice of a target? As mentioned above, we find a positive stock reaction to the announcement of a typical two-stage deal. When examining the long-run returns (1- to 3-years after the deal) of the entire two-stage acquirers sample and of a sub-sample of two-stage acquisitions, where the stocks that were issued earlier have had ample time to adjust downward for overvaluation, we find 'cleaner' evidence that the managers tend to make a poor target choice (as

reflected in overvaluation-free negative significant long-run returns). Hence, the positive reaction to an announcement of a two-stage deal is mostly due to the choice of cash payment.

There are several papers that discuss similar type of mergers. Celikyurt, et al. (2010) and Hovakimian and Hutton (2010) focus specifically on IPOs that are conducted with future a merger in mind, but they do not analyze the SEO-financed acquisitions. Schlingemann (2004) examines cash-paid mergers, focusing on the ex-ante ability of an acquirer to finance the merger with equity, cash, or debt. He suggests that takeover announcements resolve only part of the uncertainty surrounding a firm's motivation and decision to issue equity. Martynova and Renneboog (2008) investigate the sources of financing along with the means of payment in European corporate takeovers. They demonstrate that equity financing in cash-paid mergers is motivated by the acquirer's prior stock price run-up, and by the substantial size of the bidding firm. These two studies, however, do not take into account the stock price reaction at the equity issue date when computing the shareholder wealth effect with respect to these acquisitions, and they do not condition on the declared use of proceeds.

The rest of the paper is organized as follows. Section 2 formulates our hypothesis. Section 3 describes sample selection and descriptions. Section 4 gives the empirical results. Section 5 concludes our main findings. An online Appendix to this paper presents a stylized theoretical model that explains the essence of two-stage acquisitions, plus it reports some additional robustness tests.

2. Hypotheses and predictions

Next, we provide details on our hypotheses, and explain their predictions.

2.1. Decoupling by clienteles hypothesis

In this hypothesis, we make two observations: 1) that many financial transactions

are consisting of separable financing and investment decisions, and 2) investors most favorable to the financing decision may not be the same as those preferring the investment decisions. The firm's optimal decision is to identify and cater to these two groups of investors separately.⁵ In the case of acquisitions analyzed in this paper, the firms that apply the decoupling principle would issue shares to those who wish to hold their shares (i.e., the market segment that holds high expectations for their shares), instead of issuing to the shareholders of target firms as in single-stage stock mergers. The latter market segment may not be as receptive, and would demand more shares for the acquisition. They may not wish to hold acquirers' shares or else they would have already done so; and even if they had, some may have to rebalance their portfolios and sell acquirers' shares after mergers. We hypothesize that through such catering activities, two-stage acquirers benefit, because they issue stocks to the market segment willing to pay higher price for their shares, and use cash in the market segment of target shareholders who prefer this method of payment. In an online appendix to this paper, we present a stylized theoretical model that explains the essence of such corporate strategies. This intuition is summarized by our hypothesis, which consists of several testable predictions.

H1. The Decoupling by Clienteles Hypothesis:

If the stocks are segmented by their preferred clienteles, financial policies that cater to the preferred clientele would increase firm value. When applied to potential acquirers we predict:

⁵ This strategy is akin to applying market segmentation twice, to each of these two clienteles. Market segmentation theory, in which there is a clientele preference for a particular type of security, has been applied before in the financial literature. See the introduction for examples of such studies.

- A. *Compared to a straight stock acquisition, more short-term value is created when acquirers first issue stocks to those who want to own the stocks, and then use the cash to pay for the acquisition in a two-stage stock acquisition;*
- B. *Acquirers realize a better reception from the capital markets when they first reveal that their intended use of proceeds is for acquisitions, and then they issue stock shares to cater to shareholders (clientele) who prefer that these firms engage in acquisitions;*
- C. *When acquiring firms first issues stocks, either through SEO or IPO, the pricing discount the acquirer's shareholders give up is predicted to be less than the pricing discount (in terms of higher merger premium for target's shares in a share exchange) given up to target shareholders, who may not want to hold the acquirer's shares.*

The more specific the stated purpose of SEO and IPO's use of funds is, the more likely the issue will be able to cater to its desired market segment or clientele. In the case of mergers, the firm will first market shares to those who want to hold acquirer's shares with the expressed purpose that it will be used for acquisitions. The firm can then simply negotiate with the target regarding the price without considering stock as a form of payment.

The clientele effect is more refined than a simple uncertainty resolution. Announcing a specific use of funds resolves the uncertainty regarding fund use, in which acquisition is among many of possible uses. The additional refinement due to the clientele effect lies in the fact that different uses of funds attract different types of clienteles. Some clientele effects are stronger than others and thus, stronger clientele would differentiate themselves from weaker clientele in terms of stronger market reaction. We argue that the acquisition-minded clientele have stronger conviction that acquisitions are a better use of new funds than for alternative uses, such as providing

working capital, build liquidity, internal investment, etc. Investors realize that firms need to raise funds in order to make cash acquisition offer. Although IPO could allow previously private but now publicly traded firms to issue stocks for acquisitions (a la Celikyurt, et al., 2010; and Hovakimian and Hutton, 2010), issuing stocks for cash at IPO can also allow the same firm the additional option to use cash for acquisition.

When testing for this hypothesis (H1B), we classify firm's announced uses of funds into several classifications. The acquisition motivated clientele should show more positive reaction to the announcement of stock issuance than the other uses of funds.

2.2.The decoupling by time hypothesis

The best time to finance an acquisition and the best time to invest (make the acquisition) do not always coincide. A solution is to decouple financing from the investment decision such that each decision could be conducted at the time when it is optimal to do so. This suggests a two-step process: potential acquirers issue stocks for cash in period of high valuation for the industry, and use the cash to make acquisition in period of low valuation. Basically, the two-stage mergers act like a real option. The acquiring firm realizes that its equity might be overvalued (let's say during high industry valuation periods). So, it issues equity (purchases the option), and waits to see if its intended acquisition target would become undervalued (say during low industry valuation periods). If it does, it exercises its option to acquire the target with cash. If desired undervaluation of the target does not occur, the option is not exercised. Hence, we propose the following hypothesis.

H2. The decoupling by time hypothesis:

Mergers involve two financial decisions: investment and financing. Although a stock offer combines the two decisions at the same time, greater value could be created if

these two decisions are made in separate time periods, if and when it is optimal to do so. The hypothesis predicts the following optimizing behavior by acquiring firms:

- A. Potential acquirers would raise funds through SEO or IPO when their industry valuation is relatively high, and still be able to make acquisitions in periods when their industry valuation is relatively lower. Hence, two-stage deals act like a real option: equity issuance is conducted during periods when the firm's equity is more valuable (option is bought), and the option can be exercised (acquisition occurs) even during the periods when their industry valuation is lower.*
- B. The advantages of two-stage deals are even more pronounced for the same industry mergers. Acquiring firms would achieve timing advantage to acquire same industry firms (which is not possible with simple stock acquisitions), by issuing shares in period of industry high valuation, and acquire same industry target firms during periods of below-historic-median industry valuation.*

The intuition behind hypothesis H2B is straightforward. The potential timing gains to acquirers of same industry firms offering stocks are limited due to the high correlation between the acquirers' and same industry targets' valuation. Ideally, acquirers would prefer to use stocks as payment in high valuation periods for the industry, but to acquire same industry target when industry valuation is low. Two-stage deals create such an option for the acquirers.

We add that conducting an optimal two-stage M&A deal is not only desirable, but also plausible. The findings of Colak and Tekatli (2013) indicate that, typically, the aggregate equity issuance (IPO or SEO) cycles lead the aggregate M&A wave by a few months/quarters. Thus, the general lead-lag empirical relationship between the

equity issuances and the M&A waves is suitable for implementing a two-stage M&A strategy.⁶

3. Data, Sample Construction and Descriptions

The sample is constructed from the Mergers and Acquisitions Database and New Issue Database of the Securities Data Corporation (SDC) and contains acquirers from the period of January 1985 to July 2008. We start from 1985 because SDC does not provide complete uses of proceeds prior to 1985. Each deal in the sample satisfies the following requirements: (1) the transaction is completed and categorized by the SDC as a majority M&A transaction; (2) both parties in the transaction are independent corporations;⁷ (3) acquirer and target are both U.S. companies; (4) acquirer must be listed on the NYSE, AMEX, or NASDAQ, and must exist in the CRSP database; (5) in order to control for the means of payment, only simple stock mergers, simple cash mergers, and stock-financed cash mergers that offered IPOs/SEOs in the 12 months preceding their announcement dates are included in the sample; (6) in order to estimate systematic risk, the trading days for an acquirer are at least 70 days prior to

⁶ Using a similar VAR analysis and similar definitions of quarterly IPO/SEO/M&A waves as in Colak and Tekatli (2013), we verified that for the 8 out of 10 of the 1-digit SIC industries, for the quarters between 1985/1 through 2007/4, equity waves (either the IPO or the SEO waves) lead the M&A wave by about two quarters (results are available through the authors).

⁷ All the acquirers in our sample are public firms. However, the target firms can be private or public firms. About 90% of our two-stage deals involve private targets. So, in light of the findings by Officer, et al. (2009), we have separated our two-stage M&As sample into two sub-samples based on whether the target was a private or a public firm. Our main findings of favorable acquisition-announcement reaction hold for both sub-samples, and the benefits of separating financing decision from acquisition decisions are observed for both type of targets. See the results presented in Tables A1 and A2 of our online Appendix. Hence, the benefits from market segmentation are observed in both of the sub-samples, and our findings are not driven by only a certain type of target firms.

the merger announcement date; (7) daily security returns and the equally-weighted CRSP index are obtained from CRSP.

We collect two-stage financing samples (i.e., stock-financed cash mergers) using both forward and backward approaches; we identify SEO/IPO, and check to see if these firms conducted cash acquisitions in the next 12 months, and alternatively, by identify cash mergers and then check to see if the acquiring companies have done any external stock financing (IPO/SEO) in the 12 months preceding their announcement dates. To provide benchmarks to the calculated gains to the two-stage stock-financed cash mergers, two one to one matching samples – one with simple stock mergers and the other with simple cash mergers – are collected using three matching criteria: public or private status of target firms, mergers' announcement dates, and relative sizes. Relative size refers to the ratio of merger transaction value over the sum of the merger transaction value plus the acquirer's market capitalization. The acquiring firms' market capitalization 30 days prior to the initial merger announcement – obtained from CRSP – is used to measure the acquirers' market capitalization.

Table 1 describes the sample. Panel A gives sample descriptions of stock-financed cash mergers. The number of firms in the sample, which matches the sample selection criteria, is 1,492; plus the two matching groups to be discussed below; the total number of mergers in this study is 4,476. Average transaction value (\$101.301 million) is less than the average financing amount (\$122.499 million), which means the acquirers were, on average, fully funded to finance the mergers. Of all the mergers in the samples, 1,132 (75.87%) could have been fully funded by the share issues.

Panel B (Panel C) gives the matching simple stock (cash) merger sample that satisfies three matching criteria: based on whether matching firms' target is public or private; matching firms' merger announcement dates are within 30 days before or

after the announcement date of the two-stage acquirer; matching firm's relative size is within $\pm 10\%$ of the size of its stock-financed cash-merger counterpart.⁸

We check whether we obtained matching samples with good matching properties. In both Panels (B & C), the average number of days between the announcement dates (diff1) of typical two matching mergers' is less than 17 days, and the average difference between the two matching mergers' relative size (diff2) is less than 1.2%.

Table 2 specifically analyzes the stated use of the proceeds: Panel A focuses on IPO-financed cash mergers; Panels B and C list SEO-financed cash mergers, non-shelf and shelf, respectively. The classification system is as follows: Classification1 is the narrowest in scope in that it includes only cases where acquisition is indicated as the primary purpose in the prospectus when issuing IPOs/SEOs. Classification2 includes cases in which acquisition is indicated as either the primary or secondary purpose. Classification3 lists cases that fit the criteria for Classification2 *and* indicate general purpose/no specific purpose in their prospectuses. Classification4 indicates that funds would be used to increase assets, not to reduce liabilities. Classification5 indicates that funds would be used for other purposes, not related to M&A. That is, Classification5 refers to all issues not classified above. All Samples is the broadest in that it includes *all* stated intended use of funds at IPO/SEO. That is, it includes all the aforementioned criteria; which include funds that would be used for other purposes, not related to M&A.

Examining the figures after dividing them into Classifications 1-5, we observe that the funds raised in SEO/IPO roughly correspond to the size of targets identified for acquisitions, reinforcing the connection between the earlier financing rounds, and subsequent acquisitions.

⁸ A small number of our matching samples did not meet the abovementioned criteria; thus, we extended the announcement date range to 60 days, and, if necessary, 90 days.

4. Empirical Results

In this section we present our findings from testing our hypotheses. First, we present the results associated with abnormal returns around the relevant event dates (IPO/SEO date and M&A date), using standard event study method. Then, we move on to test our market segmentation hypothesis and our decoupling by time hypothesis.

4.1.Event study results

We estimate the average abnormal returns (ARs) using the market model around the event day, which is either the merger announcement, SEO filing, or IPO issuance date. The parameters for the market model are estimated over the (-180,-11) period. Samples are disregarded if the observations are less than 60 days in the estimation period. The market return is the daily return on an equally-weighted market portfolio of the NYSE, Amex, and NASDAQ stocks.

Figure 1 shows the CARs around announcement days for various types of mergers. As established in previous studies, cash mergers, in general, yield higher CARs than stock mergers. When focusing on the time around merger announcements or the event window after merger announcements, we find stock-financed cash mergers are initially perceived as simple cash mergers with a similar increase in abnormal return immediately after announcement. The subsequent decline, however, parallels that of simple stock mergers.

4.2.Testing decoupling by clienteles hypothesis

As explained above, exploiting market segmentation motive could be one of the primary drivers behind the two-stage deals. Thus, we develop several testing procedures to verify the hypotheses H1A, H1B, and H1C.

4.2.1. Acquirers' short-term wealth effect

Under the market segmentation of the equity markets hypothesis, the issuing firms would try to attract the desired clientele by advertising their intended use of funds. The more specific the clientele is, the more favorable market reception to the new equity issue (IPO or SEO) is expected to be. So, we next analyze the wealth effects (the acquirers' event-study short-term returns) by the details of information disclosed about the use of funds (Classifications 1-5). Before we proceed, some technical explanations are in order.

We are aware that abnormal returns at offer dates are different between SEO versus IPO. It is commonly known that there are many reasons that could explain the first day share price changes for IPO, e.g., the so-called first day underpricing issue. Thus, unlike SEO, we could not use unadjusted abnormal returns for the IPO sample. We acknowledge this and run a multivariate regression with first-day returns as the dependent variable; the control variables are various known factors that might affect the underpricing (see Loughran and Ritter, 2004). We consider firm age, a technology industry dummy, IPO assets and sales prior to going public (these four are proxy for IPO firms' risks), underwriter's reputation rank, presence of venture capital (both are proxy for asymmetrical information), share overhang, a pure primary offering dummy, offer price relative to the file price range, a bubble period dummy, and dummies for Classifications 1-5. Jay Ritter's website provides information about the founding dates, dual-class shares, underwriter ranks, and technology firms' SIC codes; other data are all retrieved from SDC.

Using the data available in the SDC database for all IPOs between 1985 and 2008, we compile a sample of 9,974 IPOs. After matching our SDC samples with CRSP files to retrieve first-day closing prices, we ended up with 8,957 IPOs. Of those, only 3,259 IPOs had complete information about the determinants of IPO underpricing. In

addition, our two-stage IPOs were reduced to 209 from 430 for the same reason. Most of the missing information comes from assets and sales data in SDC.

After controlling the above factors, our multiple regression result shows (see Table 3) that the coefficient on Classification1 is 20.330% and significant. The coefficients for Classifications 2-5 are not. These results suggest that when the acquisition is the primary stated purpose of an IPO (Classification1), it indeed obtains higher first-day ARs compared to those of other classifications.

Using the above estimated coefficients for the IPOs and the ARs around the announcement date of the SEOs, we next present the results for the wealth effects. Table 4 gives the acquirers' event-study short-term returns by the details of information disclosed as to the use of funds.⁹ Panel A reports the cumulated 3-day abnormal stock returns (-1, 0, +1) for the stock-financed cash mergers and the two matching groups. The results show that simple cash mergers and stock-financed cash mergers have almost the same three-day CAR (1.149% and 1.099%, respectively). However, the average CAR is 0.568% for simple stock mergers.¹⁰ To get a significantly positive mean CAR for simple stock mergers is not surprising: 90% of our samples involve private targets¹¹, and in such deals CARs are usually positive (Chang, 1998; Fuller, et al., 2002).

⁹ In untabulated results, we find that the results in this table are robust to using value-weighted portfolio of CRSP stocks as a proxy for market portfolio.

¹⁰ Although one may argue that SEO issue discount is a cost to two-stage mergers as a small discount is often observed for SEO on average. However, for the most relevant Classification1 non-shelf SEO subsample, a premium of 2.80% is observed instead, and thus, adding the premium would only provide stronger support for our results.

¹¹ We have analyzed why our two-stage targets are mostly private firms. There are several reasons for it. First, shareholders of some private targets may not want to hold the bulk of their wealth in shares of less diversified acquirers, and hence may prefer cash payment. We find results consistent with this notion. Using the COMPUSTAT Segment data we find that the cash paying two-stage acquirers of private targets operate in fewer segments than those acquiring public targets with cash: 2.06 vs. 2.31

In Panel B, we perform an important robustness test that controls for the endogeneity of the choice to do a two-stage deal (the two-stage M&As may be self-selecting to do a two-step deal). While our simple stock and simple cash matching samples can address this issue, we want to use another, more robust, method to deal with it. We use the bias-corrected, multi firm matching method of Abadie and Imbens (2006).¹² This estimator produces “the average treatment effect of the treated,” which in our case is the 3-days CARs difference between the two-stage acquirer and the matched firms with similar characteristics.

We first form two control samples: simple stock and simple cash M&As, which are larger than our original stock and cash matching samples described in Table 1. The simple stock and the simple cash M&As samples are obtained from the SDC database for the same period as our two-stage M&As sample. We find 8,869 simple cash (7,312 simple stock) deals for which we can calculate the 3-day CAR.

Using these control samples, we try to find more than one matches (up to four matches, i.e. $m = 4$) for each two-stage firm. The matching variables used to choose matching firms are mostly obtained from COMPUSTAT¹³, which shrinks the above

business segments (significant difference at 5% level). They also have greater nonsystematic risk as measured by $(1-R^2)$ using the Fama-French three-factor model. Second reason could be that, some acquirers may not want private target’s owners to be among its largest shareholders. We find results that support this claim. We use the deal value to compute the number of shares the cash receiving target owners would have received had the payment was made in stock shares. We find that target owners receiving cash would have received significantly greater percentage ownership of the merged firm than those of the stock receiving target owners. Detailed results are available upon request.

¹² This matching method is popular in finance due to various advantages described in Abadie and Imbens (2006) and Colak and Whited (2007), the most important ones being that it adjusts the estimation for possible biases in the matching process, it allows for many matching firms to be used in estimating the average, and it allows for as many as possible matching variables. We will refer the reader to these two studies for further details on how to apply this estimator in a financial setting, and instead just specify the parameters and the control samples we used in running this estimator.

¹³ We use the quarterly accounting data for the quarter prior to the M&A deal.

samples to 5,592 simple cash and 3,105 simple stock deals. Various missing COMPUSTAT variables also shrink our two-stage sample to 902 firms. Our matching variables are acquirer's industry (2-digit SIC), acquirer's size (i.e., its sales), value of transaction, the merger dates (the closer the mergers are in time, the less biased is the estimation due to date mismatching), cash flows over assets, return-on-assets, and the leverage (long-term debt over assets). We require exact matching only on industry, and the rest of the matching variables are adjusted for possible bias by the estimator. Adding more firm and deal variables reduces our sample size substantially, so we use only the above matching variables.

Table 4, Panel B shows the difference in acquirer's stock-price reaction between the two-stage mergers and the simple cash (or the simple stock) mergers. This difference in 3-day CARs between the two-stage and the simple stock deals is estimated (after correction for biases due to mismatching) to be 0.76% and it is significant at 5%-level, suggesting that the market reception of two-stage deals is significantly more positive than the typical stock merger. The same difference between two-stage and simple cash deals is -0.19% and it is insignificant. These results are consistent with our findings in Table 4, Panel A. Thus, endogeneity is not the main driver of these results.

We further divide the sample into means of share issuance, and recalculate CAR by collapsing the two stages into a single stage, i.e., make it equivalent to a 'pure play' simple stock merger. Panel C gives the adjusted CAR for IPO-financed cash acquirers – M&A's CAR plus its IPO issue date's AR (obtained from the regressions in Table 3). Consistent with the prediction of the decoupling by clienteles hypothesis, we find IPO issue type that would attract the most specific clientele (Classification1) receive the most favorable receptions in the equity market. The adjusted AR at IPO (first stage) of Classification1 (acquisition is stated as the primary use of funds and where abnormal returns are adjusted for other explanation of IPO first day

underpricing), 20.330%, is higher than any classification. The second stage CARs at merger announcement again show Classification 1 to have the highest value at 7.928%, and Classification5 to have the lowest at 1.917%. Combining these two events together to form a single stock financed mergers; we find Classification1's combined CAR of 28.258% versus 3.662% for that of Classification5, a 24.596% significant difference.¹⁴

Panel D presents the adjusted CAR for non-shelf SEO-financed cash acquirers – M&A's CAR plus its non-shelf SEO filing date's CAR. As previous studies have shown (see Asquith and Mullins, 1986), the CAR around the SEO filing date is significantly negative. However, the figure for Classification1 is less negative than those of the other classifications. Moreover, the CAR of Classification1 around the time of the acquisition announcement is 2.011%, which is much higher when compared to those of other classifications (Classifications2, 3 and 4 are 0.448%, 0.271% and 0.287%, respectively). At merger announcement, the adjusted CAR for Classification1 is 0.252, and it is significantly greater than the minus 2% CARs in the other four classifications. Panel E reports very similar results for shelf SEO.¹⁵

The results thus far provide support for market segmentation in the equity market by their expressed corporate strategy. The IPOs/SEOs that are most specific about the

¹⁴ In a robustness test we investigate whether the greater announcement CARs of Classification1 is due to a size effect, and not due to the specificity of fund use that attracted the desired clientele. When we examine different classifications under given stock-financing sources in detail, we find no relation between the CAR and firm size as measured by acquirers' market capitalization. Results are not tabulated to save space, however they are available upon request.

¹⁵ It can be claimed that: "If issuing new equity indeed created an option to acquire with cash, then you could not just look at the cases this option was exercised, you also need to look at SEOs/IPOs that did not immediately got involved in a merger. Otherwise, there is a sample selection bias or a look-back bias." In an online appendix to this paper (see Table A3) we address this issue. The results are similar in sign and significance to the results in Table 4. Thus, there is no evidence to believe that the sample selection is a major factor driving the results in Table 4.

intended use of funds (with acquisition as the corporate policy) have the most favorable market reception at issue date due to a good matching of firm and clientele. They also have the most favorable reception to merger announcement due to firms fulfilling the expectation that the funds will be used for acquisitions.

4.2.2. *Relative market discounts*

In this part of testing the decoupling by clienteles hypothesis we compare what firms pay in incremental premium when using stocks in a single-stage merger, versus what market discount they pay in order to issue SEO in the same high valuation market. Bearing in mind that market may discount more heavily when IPO/SEO are issued in hot versus cold market, and also market may demand greater merger premium in hot versus cold market, we construct measures of relative discount in these two market regimes; one for SEO and another for mergers.

Using the data available in SDC database for all SEOs during our sampling period, we calculate each issuing firm's *Relative SEO Discount* as the market's reaction to SEO announcement when industry valuation is high minus announcement response to SEO when industry valuation is low. Rights offerings and Shelf (415) offerings are excluded from our SEOs sample. After matching our SDC sample with CRSP files to retrieve daily stock prices, we end up with 5,047 unique SEOs. Of those, only 4,976 SEOs have CARs for the three-day window around the filing date, [-3,+3].

We measure *Relative Merger Discount* as the average merger premium in stock deals when industry valuation is high minus average merger premium when the acquirer's industry valuation is low. The premium is the offer price to target's share price one day before the announcement date.¹⁶ To obtain an average value for this measure across all the merger deals, we retrieved all the M&A deals from the SDC

¹⁶ If the price one day before announcement is missing, we use the first available price for 2 to 7 days before. Otherwise, we assume that the premium is non-measurable.

data files between 1985 and 2008. We find 6,200 M&A events (stock, cash, or hybrid financed) that have premium measurable as described above. Only 1,704 of which are pure stock deals that have information about the premium paid.

To determine the valuation conditions for the firms' industries, we rely on quarterly market-to-books (MTBs) of the firms in each industry. We use the data obtained from COMPUSTAT and CRSP data going back to 1984. We use 3-digit or 2-digit SICs for the industry classifications. The high-low valuation industry quarters are defined by comparing the mean current MTB of industry to its four-quarter moving average (MA(4)).¹⁷ If it is higher (lower), then it is a high (low) valuation quarter.

Additional support for segmentation of equity market by corporate strategy is provided if the Relative M&A discount premium (timing cost of stock offer merger) is greater than the Relative SEO discounts (timing cost for two-stage stock issue and cash merger). In that case, two-stage, stock issue and cash offer, is more advantageous, which is in support of the market segmentation hypothesis.¹⁸

Table 5 presents our estimates of relative SEO and M&A discounts for the 1985 to 2008 periods. Consistent with the M&A literature, we find that the mean M&A premium during high valuation markets is around 36.86% (for 3-digit SICs), which is about 4.6% higher than the premium during low valuations; this value is our measure of relative M&A discount. Similarly, we calculate the relative SEO discount to be only 0.11%, when measured as the CAR between the day before and the day after the announcement day (using [-1,+1] is commonly accepted measure of the market reaction to SEO announcement). Clearly, the relative M&A discount (for stock

¹⁷ Four quarter moving average is necessary to eliminate any possible seasonality effects in the valuations of various industries.

¹⁸ This is a difference-in-difference comparison, because we do not have any basis for absolute SEO or M&A discount, except in relative terms.

acquisitions) is significantly larger (at 5%-significance level) than the relative SEO discount, which supports the decoupling by clienteles rationale for two-stage deals.

4.3. Testing decoupling by time hypothesis

The decoupling by time rationale for mergers suggests separating financing and investments across time. Specifically, decoupling these two actions provides an option-like benefit to the acquiring firm to issue equity during high valuation periods, and use the cash to purchase a target firm during low valuation period.

If decoupling between merger financing via SEO/IPO (first stage) and merger, especially with a same industry target (second stage) is to occur at different times, the market valuation of the acquirer's industry is predicted to be greater in the financing stage than in the acquisition stage. We use the median Market-to-Book (MTB) ratio of the acquiring firm's industry as measure of valuation. Thus, industry MTB at SEO/IPO quarter should be greater than industry MTB at merger's quarter for successful decoupling. We realize the power of H4 may not be strong, as decoupling could just be one of the many reasons explaining the timing for SEO/IPO and mergers. At best, we may detect some firms following the decoupling strategy at the margin.

To obtain the data for our tests, we merge CRSP monthly and quarterly COMPUSTAT data using CRSP's calendar year-quarter and COMPUSTAT's year-quarter during the sample period of our study (see the data section). When merging the above combined CRSP-COMPUSTAT data with our two-stage sample, we use cash announcement date to find the year-quarter of the merger. Our measure of industry's valuation is median quarterly Market-to-Book ratio of the firms in the same 2-digit, or alternatively, 3-digit SIC code industries.

The results are presented in Table 6. Panel A shows the results for the entire sample (using the SIC of the acquirer), where our findings indicate that in 56.5% (vs. 43.5%)

of the time, the equity issuance quarter of the two-stage mergers has higher equity valuation than the same firm's corresponding merger quarter, supporting decoupling by time at the margin. We further divide the sample into same or different industry mergers, and also obtain similar patterns.

We devise a second empirical test to verify whether decoupling in time allows potential acquirers more flexibility in timing the acquisitions. We utilize the empirical fact that acquirers prefer (not prefer) to use stocks when their industry valuations are high (low), and investigate whether the frequency of acquisitions in low industry valuation period increases under two-stage mergers. We compare the two-stage sample to the one-stage M&As in terms of what percentage of the deals were conducted during the overvalued equity periods. More specifically, we classify the period of overvaluation (undervaluation) by comparing whether the period's B/M is above or below its historical mean (median).¹⁹

The results are presented in Table 6, Panel B. We find evidence that supports the flexibility option to firms adopting the decoupling, two-stage strategy. Under the two-stage, we find acquirers significantly increase the frequency of acquiring same 2-digit SIC industry target to 8.85% from 5.62% for single-stage stock mergers. A closer examination shows that the benefit of decoupling is mainly to enable acquisition of same industry targets in low industry valuation period, but not to acquire different industry firms in the same period. We find similar results when using the 3 digit industry classification; same industry acquisitions increase from 5.57% for single stage to 7.99% in two-stage. This flexibility not only allows the acquirers to use own overvalued shares to acquire overvalued same industry targets in high industry

¹⁹ We retrieved 38-industry Book-to-Market (B/M) data from Kenneth French's Web site. The "historical period" is considered to be the time span from 1926 to the year of the M&A. When choosing which of the 38 Fama-French sectors the acquirer falls into, we use the acquirer's SIC that matches that sector's code range.

valuation period, but also to acquire undervalued target in low industry valuation period using its own overvalued shares issued in high industry valuation period.

In our final empirical test related to decoupling in time, we implement the Rhodes-Kropf, et al.'s (2005) decomposition technique to determine the average sector-specific valuation error in the IPO/SEO quarter and in the acquisitions quarter. We find that during the financing quarter the sector-specific valuations are significantly higher than in the acquisition quarter, which shows that for our two-stage acquisitions the decoupling strategy have been successful, on average. This is especially true for the same industry acquisitions (results shown in an online Appendix, Table B1). Thus, in three separate tests we find support for the option value of decoupling.

4.4. *Two-stage mergers and disentangling some confounded effects*

A byproduct of our two-stage decomposition of mergers is a solution to *the confounding effect* of overvalued shares and poor target choice, which has been a major empirical problem for many M&A studies.

In the vast literature on M&As, simple stock deals usually result in significantly negative announcement returns (see Travlos, 1987; Andrade, et al., 2001). The principal explanation for this pattern is that stock financing creates an adverse selection effect similar to an SEO. Consequently, equity issues are inferred as a revelation of overvaluation, and hence are considered bad news by the market.

However, there is a competing explanation for why simple stock mergers result in significantly negative announcement returns is attributed to acquirers making poor acquisitions. Jensen (2005) suggests that managers who wish to maintain an overvalued stock price have an incentive to mislead the market by making acquisitions in order to create an appearance of having growth opportunities, which will justify the overvaluation. Thus, overvaluation can make for a higher incidence of

managerial discretion, thereby allowing managers to make poor acquisitions when good prospects are not available.

In a related empirical study, Moeller, et al. (2005) claim that the evidence supports Jensen's (2005) argument. They document that, acquirers' aggregate dollar loss upon announcement was excessively large due to a small number of acquisition announcements by firms with extremely high valuation. They also find that acquirers who announce acquisitions with large dollar losses perform poorly afterwards. In addition, Dong, et al. (2006), Ang and Cheng (2006) show that high valuation firms are more likely to make acquisitions and exhibit abnormally low returns. Following this line of reasoning, it can be claimed that the negative price reaction in stock merger announcements is the result of two confounding signals: overvaluation and poor acquisition choice.²⁰ However, in single-stage stock deals these two effects could not be separated empirically.

On the other hand, two-stage mergers present a unique sample that allows us to empirically disentangle this confounding effect. In section 4.2, we have shown that the response to two-stage deal announcement is significantly better than a regular stock deal (3 day CARs are respectively 1.099% vs. 0.568%), and it is more similar to a cash offer (1.099% vs. 1.149%). [This more favorable reaction is likely due to the absence of overvalued equity that can be used as 'cheap money' to overpay for the target.](#) Does this mean, however, that the managers of two-stage deals are better at picking good targets? Are they as careful with overpayment for the target as the managers of pure cash acquisitions?

²⁰ Mitchell, et al. (2004) suggest a third explanation to bidders' negative announcement returns in stock deals: downward price pressure caused by merger arbitrage short selling. For stock deals, merger arbitrageurs need to short the bidder's shares and long target shares at merger announcement. So, some acquirers would want to conduct such two-step deals to avoid intensive shorting activity and downward price pressure caused by merger arbitrageurs. Testing this explanation is beyond the scope of this paper, due to limited short-sale data availability for our acquirers around the merger announcements.

4.4.1. The long-run stock performance of two-stage acquirers

Next, we analyze the long-run stock performance of the two-stage stock acquirers. In the case of two-stage deals, the question of the quality of target choice can be examined more directly from the post-merger long term returns, which is not possible under a single-stage stock merger. This separation of overvaluation and the target choice is another contribution of this paper.

We calculate 3-year returns for two-stage mergers using buy and hold market adjusted returns, versus those of single-stage cash or stock mergers, in a difference-in-difference comparison. Table 7 gives the 3-months, 1-year, and 3-year returns after the announcement. We find that the long-term returns for the two-stage mergers are mostly negative. Given that these returns may not be confounded with price correction from overvaluation, we can infer that acquirers make poor target choice. This is true regardless of whether the target firm is private or public (see online Appendix, Table A2). Apparently, advertising a corporate acquisition strategy to attract likeminded clientele does not guarantee the acquirers have the expertise in finding and managing acquisitions. On a difference-in-difference comparison, we find that these stock-financed cash acquirers do worse than simple cash acquirers. They could possibly suffer from a “cheap money” fallacy – i.e., be less careful with their recently raised overvalued or cheap equity capital. Consistent with having the confounded effects of overvalued equity and poor target choice, we find simple stock mergers have the lowest long term returns compared to various two-stage sub-samples.

In a supplemental analysis, we try to isolate the cases where prior overvaluations might have caused the long-run underperformance. To provide a cleaner sample of overvalued shares issued in the first stage, we keep only those firms that have experienced share price decline since SEO/IPO up to one week before merger announcements. When we concentrate on this sample, where overvalued equity shares

have already adjusted, leaving post-merger long term effect to derive mainly from target selection, we find interesting results. Table 8 reports the one-year (Panel A) and the three-years (Panel B) post-merger returns (i.e., pure merger effects). Pure merger effects after 3 years for various means of issuance are mostly negative. This is not surprising given that benefits accrued to most mergers are often less than expected. In untabulated results we also examine whether there is major differences across Classifications 1 through 5. We find that there are two notable exceptions: both are Classification1 acquisitions financed from IPO and Shelf SEO (results available in an online Appendix). This implies that not only these issuing firms attract the desired clienteles to allow them to make acquisitions subsequent to IPO/SEO issuance, but that these clienteles are also correct in assessing the soundness of these firms' acquisition strategy.

In Table A3 of our online Appendix we address the question of whether acquirers make good acquisitions by comparing them with the samples of SEO that issue new shares but do not use the funds for acquisitions (i.e., these are the firms that did not exercise their option to acquire). We find that IPO firms that acquire perform better than those that do not. This is particularly true for Classification1 issuers. However, SEO issuers are better off not using the funds for acquisition, which is consistent with Jensen's (2005) idea.

4.4.2. Do two-stage acquirers overpay for the target?

In another related analysis, we investigate whether the two-stage firms overpay for the target above and beyond the other acquirers' overpayment. Such an analysis helps us disentangle yet another pair of convoluted effects: bad choice for the target or the target was good, but the acquirer overpaid. For this purpose we calculate the premium paid to the target shareholders, for the sample described in Section 4.2.2 of 6,200

M&A events with available premium information. Using these events, for each quarter in our sampling period we calculate the mean/median premium. This is a measure of the typical premium prevalent during that particular time. Then, we calculate the premium for our two-stage mergers. Only 144 of them have premium data. We compare each two-stage firm's premium to the corresponding mean/median premium for the quarter. We find that 40% (60%) of our two-stage acquirers overpay (underpay). When we look into subsample results, we find that only 18% (49%) of shelf-SEOs (non-shelf SEOs) overpay. These results indicate that the incidences of overpayment for the target are reduced by conducting a two-stage deal.

Similarly, two-thirds of the Classification 1 firms do not overpay (67% underpay). Hence, part of the short-term positive reaction to, and the relative long-term over-performance of, Classification1 acquirers occur because most of them do not overpay for the targets. That is, Classification1 acquirers show greater skills in timing, and bargaining, consistent with their understanding of market segmentation and decoupling in time.

5. Conclusion

In this study, we introduce the principle of decoupling as a financial strategy as many financial decisions are combination of a financing and an investment choice, either at the same time, or with a time lag. The principle is empirically verified from a sample of stock financed cash acquisitions. Opportunity to profit by separating the financing and investment decisions arise when there exist different clienteles: those preferring to hold securities in the new financing round from those preferring to receive cash and not acquirer's securities. Opportunity to profit may also appear in the form of real options when the firm separates financing from investment by a time lag.

An earlier opportunistic issuance of the firm's securities at higher price provides the option, in the form of cash, to make later acquisitions.

We find evidence to support market segmentation (decoupling of financing and investment decisions by clienteles). To the best of our knowledge, this is the first empirical study that analyzes the market segmentation in the M&A market. We show that market segmentation can exist among both the financing and the investment clienteles. We also find evidence in support of decoupling by time. Through such a decoupling, we find some firms are able to increase their chances to acquire same industry firms even in period when industry valuation is low.

Separating the two decisions also allows us to solve the confounding overvaluation and target choice problem inherent in simple stock mergers. From a clean sample of two-stage stock-financed mergers that have experienced price correction, we find finer results from acquirers' target choice. Although most stock acquirers suffers long term loss in firm value post acquisition(suggesting an agency problem in which firms may regards funds raised from overvalued shares as cheap money), we are able to identify a subs-sample of IPO issuers that added value through acquisitions.

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Figure 1: The CARs of Two-Stage vs. Other Types of M&As.

The figure presents the acquirers' cumulative abnormal returns (CARs) of our two-stage M&As, and the matching *simple* stock and cash M&As. CARs are calculated around the deal's announcement date.

Table 1: General Sample Descriptions

This table reports the sample descriptions for stock-financed cash mergers and their matching samples. The IPO/SEO and mergers' data comes from the SDC database. The period of the mergers' data and IPO/SEO's data is from January 1985 to July 2008. Panel A shows sample descriptions of stock-financed cash mergers that have undergone IPO/SEO issues within 12 months preceding the announcement date. Panel B shows *simple* stock mergers that match stock-financed cash mergers with similar conditions, controlled by whether the target firms are public or private, by these two mergers' announcement dates (within 30 days before or after announcement date) and relative size within +/- 10%. Panel C shows *simple* cash mergers that match stock-financed cash mergers with similar conditions, controlled by whether the target firms are public or private, by these two mergers' announcement dates (within 30 days before or after announcement date) and relative size within +/- 10%. Relative size refers to the ratio of merger transaction value over the sum of the merger transaction value plus the acquirer's market capitalization. The acquiring firm's market capitalization 30 days prior to the initial merger announcement was used to measure acquirer's market capitalization. Diff1 denotes the average number of days between these stock-financed cash mergers and their matching firms of simple cash/ stock mergers announcement dates. Diff2 denotes the average difference between the relative size of stock-financed cash mergers to their simple cash/stock matching firms.

Panel A: Stock-financed cash mergers

	Number of Firms in the Sample	IPO/SEO Average Amount (in millions)	Average Acquisition Amount (in millions)	Number of Fully Funded acquisitions	Relative Size (%)
Total	1492	122.499	101.301	1132	10.268

Panel B : Matching samples (*Simple* Stock Mergers)

	Number of Firms in the Sample	Relative Size (%)	Average Acquisition Amount (in millions)	Diff1(<i>days</i>)	Diff2 (%)
Total	1492	10.169	163.536	16.253	1.195

Panel C: Matching samples (*Simple* Cash Mergers)

	Number of samples	Relative Size (%)	Average Acquisition Amount (in millions)	Diff1(<i>days</i>)	Diff2 (%)
Total	1492	10.101	140.842	16.114	0.719

Table 2: Sample Descriptions by Specific IPO/SEO Classifications

Panel A gives the sample descriptions of cash mergers that have undergone IPO issues within 12 months preceding the announcement date. They are grouped into these classifications: Classification1 is the most narrow in that it allows only cases where acquisition is indicated as the primary purpose in the prospectus when issuing IPO. Classification2 includes cases in which acquisition is indicated as either the primary or secondary purpose. Classification3 lists cases that fit the criteria for Classification2 *and* indicate general purpose/no specific purpose in their prospectuses. Classification4 indicates that funds would be used to increase assets, not to reduce liabilities. Classification5 indicates that funds would be used for other purposes, not related to M&A. That is, Classification5 refers to all issues not classified above. All Samples is the broadest in that it includes *all* stated intended use of funds at IPO/SEO. Panel B uses identical classification criteria as outlined above for Panel A except that it includes non-shelf SEO rather than IPO issues. Panel C does the same for shelf SEO rather than non-shelf SEO and IPO issues.

Panel A: IPO-financed Cash mergers					
	Number of samples	IPO Average Amount (in millions)	Acquisition Amount (in millions)	Number of Fully Funded	Relative Size (%)
All Samples	443	84.204	60.034	361	12.534
Classification1	37	95.900	67.471	35	10.031
Classification2	114	96.490	69.528	97	11.689
Classification3	265	92.817	59.036	227	11.196
Classification4	271	91.715	58.173	232	11.218
Classification5	172	72.372	62.968	129	14.606
Panel B: non-shelf SEO-financed Cash mergers					
	Number of samples	SEO Average Amount (in millions)	Acquisition Amount (in millions)	Number of Fully Funded	Relative Size (%)
All Samples	724	110.590	74.176	548	9.162
Classification1	63	67.695	69.474	42	10.767
Classification2	196	96.389	60.033	150	9.000
Classification3	425	98.448	63.816	329	8.370
Classification4	430	100.236	63.389	334	8.298
Classification5	294	125.733	89.938	214	10.426
Panel C: Shelf SEO-financed Cash mergers					
	Number of samples	SEO Average Amount (in millions)	Acquisition Amount (in millions)	Number of Fully Funded	Relative Size (%)
No classification	325	201.227	217.977	222	9.642
Classification1	28	395.003	296.908	18	9.416
Classification2	116	212.085	220.467	80	10.524
Classification3	248	183.255	212.911	176	9.525
Classification4	248	183.255	212.911	176	9.525
Classification5	77	259.114	234.294	46	10.021

Table 3: Abnormal Returns Around the IPO Date

This table reports OLS regression in which the first-day abnormal returns of all IPOs are the dependent variable. An IPO first-day return is the percentage change in the offer price to the first-day closing price. The market return is the CRSP equally weighted return. Classification1 is a dummy that takes a value of 1 if the primary stated purpose of the IPO issue is M&A, and 0 if otherwise. Classifications 2-4, as defined in Table 2, are also dummy variables. The ranking dummy equals 1 if the IPO's lead underwriter has a reputation rank of 8 or more, and 0 if otherwise. Ln(assets) is the natural log of an asset's book value prior to IPO, expressed in millions of dollars of 2008 purchasing power using the CPI. The Tech dummy takes a value of 1 if the firm's SIC code belongs to technology industries, and 0 if otherwise. Ln(1+age) is the natural log of 1 plus the firm's age year from founding date to the IPO. Share overhang is the ratio of the shares retained by pre-issue shareholders to the public float. The VCB dummy equals 1 if the IPO is backed by venture capital, and 0 if otherwise. Pure primary dummy takes a value of 1 if the share offerings are all pure primary (i.e., no secondary shares sold), and 0 if otherwise. Positive (Negative) Price Revision is a dummy that takes a value of 1 if the offer price exceeds the top of the (or falls below the bottom, for Negative) original file price range, and 0 if otherwise. Ln(sales) is the natural log of pre-issue annual firm sales, expressed in millions of dollars of 2008 purchasing power. The bubble dummy equals 1 if the IPO took place in 1999-2000. The prior bubble dummy takes a value of 1 if the IPO occurred prior to 1999. The interaction terms are the products of the ranking dummy and the time-period dummies. P-value is reported in parentheses. Statistical significance 1%, 5%, and 10% level is indicated with ***, **, and *, respectively.

Intercept	10.073***	(0.001)
Classification1	20.330**	(0.048)
Classification2	-2.787	(0.659)
Classification3	0.850	(0.961)
Classification4	-2.578	(0.878)
Classification5	1.745	(0.663)
Ranking Dummy	-1.272	(0.412)
Ln(Assets)	-1.652***	(0.000)
Tech Dummy	5.973***	(0.000)
Ln(1+age)	-1.987***	(0.002)
Share Overhang	1.848***	(0.000)
VCB Dummy	3.771***	(0.005)
Pure Primary Dummy	2.128	(0.106)
Positive Price Revision	15.053***	(0.000)
Negative Price Revision	-8.187***	(0.000)
Ln(Sales)	1.070***	(0.002)
Bubble Dummy	-3.350	(0.400)
Prior Bubble Dummy	-1.600	(0.351)
Bubble Dummy* Ranking Dummy	15.283***	(0.000)
Bubble Dummy* Positive Price Revision	59.495***	(0.000)
Bubble Dummy* Negative Price Revision	-11.694***	(0.006)
Obs.=3,259	Adjusted R-squared=0.410	

Table 4: Acquirers' Event-Study Returns (%)

This table shows the acquirers' short-term CAR. Average abnormal returns (ARs) are estimated using the market model around the event day, which may include the merger announcement, SEO filing date, or IPO issue date. The market model is estimated over the (-180,-11) period. Market return is the daily return on an equally-weighted market portfolio of CRSP stocks. Panel A shows stock-financed cash mergers and two matching groups – *simple* cash mergers and *simple* stock mergers– and calculates these individual groups' cumulated 3-day abnormal stock returns(-1, 0, +1). Panel B shows the results after controlling for possible endogeneity problem. Panel C shows the CARs and ARs (from Table 3) for the IPO-financed cash acquisitions around the two relevant dates, after controlling for all the determinants of the first day IPO returns (underpricing). Panel D indicates *adjusted* non-shelf SEO-financed cash acquisitions– the merger announcement date's CAR plus its non-shelf SEO filing date's CARs. Panel E uses the same method for calculating the CAR as outlined above for Panel D, except that it includes shelf SEO rather than non-shelf SEO issues. In addition, Panel C, D, and E all indicate *adjusted* stock-financed cash acquisitions using identical classification criteria as outlined above for Table 2. Statistical significance 1%, 5%, and 10% level is indicated with ***, **, and *, respectively.

CAR around announcement (3 days: -1, 0, 1)	AR from IPO regressions / CAR around SEO filing date	CAR around acquisition announcement	total	# of samples
Panel A: Stock-financed cash merger and two matching groups				
<i>Simple</i> cash merger	None	1.149% ***	1.149%	1492
<i>Simple</i> stock merger	None	0.568% ***	0.568%	1492
Stock-financed cash merger	None	1.099% ***	1.099%	1492
Panel B: Differences in 3-day CARs after controlling for endogeneity Shown are avg. treatment effect for the treated from Abadie and Imbens (2006) estimator with m=4, bias-adjustment, with replacement, and robust specifications.				
Two-stage minus simple cash M&As = -0.19% (<i>p</i> -value 0.3810); Numb. of two-stage firms=902				
Two-stage minus simple stock M&As = 0.76% (<i>p</i> -value 0.0439); Numb. of two-stage firms=902				
Panel C: <i>adjusted</i> IPO-financed cash acquisitions				
All Samples	0.040%	2.725% ***	2.765%	209
Classification1	20.330% **	7.928% ***	28.258% ***	14
Classification2	-2.787%	3.019% ***	0.232%	62
Classification3	0.850%	3.054% ***	3.904%	132
Classification4	-2.578%	3.159% ***	0.581%	136
Classification5	1.745%	1.917% ***	3.662%	73
Panel D: <i>adjusted</i> non-shelf SEO-financed cash acquisitions				
All Samples	-2.686% ***	0.710% ***	-1.976% ***	698
Classification1	-1.759% ***	2.011% ***	0.252%	59
Classification2	-2.796% ***	0.448%	-2.348% ***	188
Classification3	-2.612% ***	0.271% **	-2.341% ***	408
Classification4	-2.555% ***	0.287% **	-2.268% ***	413
Classification5	-2.875% ***	1.323% ***	-1.552% ***	285
Panel E: <i>adjusted</i> shelf SEO-financed cash acquisitions				
All Samples	-1.024% ***	0.400% ***	-0.624% *	321
Classification1	-1.019% ***	1.331% **	0.312%	28
Classification2	-1.537% ***	0.587% *	-0.950% ***	116
Classification3	-1.007% ***	0.342%	-0.665% ***	244
Classification4	-1.007% ***	0.342%	-0.665% ***	244
Classification5	-1.077% **	0.584%	-0.493%	77

Table 5: Evidence on Market Segmentation Motive: Comparing Relative Discounts of M&A Market and SEO Market

The table shows the relative magnitude of the discounts (or costs) in the M&A market vs. the SEO market. The relative M&A discount is measured using the mean industry M&A premiums (for the acquirer's industry) in high-valuation vs. low-valuation quarters. M&A premium is the premium paid by the acquirer to the target shareholders (the M&A premium is the offer price to target's share price one day before announcement). The M&A sample covers all the stock acquisitions between 1985 and 2008 obtained from SDC. The relative SEO discount is measured using the mean industry SEO market reactions in high-valuation vs. low-valuation quarters. The SEO market reaction is the cumulative abnormal return (CAR) around the announcement date of the SEO. We use two event windows: [-3 days;+3 days] and [-1 day; +1 day] around the announcement date. The market return is the CRSP equally-weighted return. The industries are classified using 2-digit SICs or 3-digit SICs. To determine each industry's valuation in each quarter, we compare that industry's mean market-to-book (MTB) to its moving average (measured by MA(4)); if it is above (below) that industry is considered in a high (low) valuation quarter. We use CRSP data to calculate firms' market values at the end of each fiscal quarter, and COMPUSTAT quarterly data to retrieve the quarter's book value. We also present the results from *t*-test for significant differences in the means of M&A discount and the SEO discount.

Discount Measure	Mean Discount in High Valuation Quarters	Mean Discount in Low Valuation Quarters	Relative Discount; High – Low (% of Low)
1) M&A Premium; 3-digit SIC Industry	36.86%	32.26%	+4.60% (or +14.26% of Low)
2) SEO Announcement, CAR [-3,+3]; 3-digit SIC Industry	3.10%	2.74%	+0.36% (or +13.14% of Low)
3) SEO Announcement, CAR [-1,+1]; 3-digit SIC Industry	2.54%	2.43%	+0.11% (or + 4.53% of Low)
<i>t</i> -test for differences in means b/w 1) and 2) [or 1) and 3)]			0.0020 [0.0280]
4) M&A Premium; 2-digit SIC Industry	38.55%	30.51%	+8.04% (or +26.35% of Low)
5) SEO Announcement, CAR [-3,+3]; 2-digit SIC Industry	2.74%	3.22%	-0.48% (or -14.91% of Low)
6) SEO Announcement, CAR [-1,+1]; 2-digit SIC Industry	2.33%	2.72%	-0.39% (or -14.34% of Low)
<i>t</i> -test for differences in means b/w 4) and 5) [or 4) and 6)]			0.0001 [0.0001]

Table 6: Tests on Decoupling by Time Motive for Two-Stage Deals

The table provides evidence on the decoupling by time hypothesis for the two-stage M&As. Panel A compares the acquirer's median/mean industry MTB during the IPO/SEO quarter vs. the same industry's median/mean MTB during the M&A's quarter. The numbers presented are the percentages of all the two-stage M&A deals that were conducted in each comparison (higher MTB during equity issuance and lower MTB during the M&A and vice-a-versa). The industries are classified using 2-digit or 3-digit SICs. The results for the entire two-stage sample, for the same industry two-stage M&As subsample, and for the unrelated industries two-stage M&As sub-sample. Panel B shows the percentage of two-stage M&As and the percentage of one-stage (regular) M&As that were conducted during the periods of above- and below-average valuations, as measured by MTB of the industry. The results for the same-industry deals and for the different industry deals are presented. The historic MTBs are found using the inverse of the annual value-weighted average of BE/ME from Kenneth French's Web site, going back to 1926. The *p*-values from a one-sided, one sample binomial test (which tests whether the proportion of the quarters with *higher* MTB during the IPO date significantly differs from 50%) are also shown.

Panel A: MTBs during the IPO/SEOs and during the M&As quarter.

Entire Two-Stage Sample				
	<i>3-Digit SIC Median</i>	<i>3-Digit SIC Mean</i>	<i>2-Digit SIC Median</i>	<i>2-Digit SIC Mean</i>
MTB of IPO/SEO qtr > MTB of MAs qtr	56.5%	53.8%	53.0%	51.9%
MTB of IPO/SEO qtr < MTB of MAs qtr	43.5%	46.2%	46.9%	48.1%
Binomial Test (p-values)	0.0001	0.0020	0.0092	0.0700
Same Industry, Two-Stage MAs (using 2-Digit or 3-Digit SICs)				
	<i>3-Digit SIC Median</i>	<i>3-Digit SIC Mean</i>	<i>2-Digit SIC Median</i>	<i>2-Digit SIC Mean</i>
MTB of IPO/SEO qtr > MTB of MAs qtr	55.6%	52.7%	52.1%	51.9%
MTB of IPO/SEO qtr < MTB of MAs qtr	44.4%	47.3%	47.9%	48.1%
Binomial Test (p-values)	0.0024	0.0813	0.0829	0.0945
Different Industry, Two-Stage MAs (using 2-Digit or 3-Digit SICs)				
	<i>3-Digit SIC Median</i>	<i>3-Digit SIC Mean</i>	<i>2-Digit SIC Median</i>	<i>2-Digit SIC Mean</i>
MTB of IPO/SEO qtr > MTB of MAs qtr	57.1%	54.6%	54.2%	52.0%
MTB of IPO/SEO qtr < MTB of MAs qtr	42.9%	45.4%	45.8%	48.0%
Binomial Test (p-values)	0.0001	0.0044	0.0150	0.0910

Panel B1: Two-Stage Mergers

Merger Type	Industry MTB is <i>Above</i> Historical Median (2-digit SIC)	Industry MTB is <i>Below</i> Historical Median (2-digit SIC)	Industry MTB is <i>Above</i> Historical Median (3-digit SIC)	Industry MTB is <i>Below</i> Historical Median (3-digit SIC)
Same Industry	91.15%	8.85%	92.01%	7.99%
Different Industry	95.07%	4.93%	93.70%	6.30%

Panel B2: One-Stage Mergers (M&As not associated with a prior IPO/SEO)

Merger Type	Industry MTB is <i>Above</i> Historical Median (2-digit SIC)	Industry MTB is <i>Below</i> Historical Median (2-digit SIC)	Industry MTB is <i>Above</i> Historical Median (3-digit SIC)	Industry MTB is <i>Below</i> Historical Median (3-digit SIC)
Same Industry	94.38%	5.62%	94.43%	5.57%
Different Industry	91.80%	8.20%	92.36%	7.64%

Table 7: Quality of the Target Firm

The table looks at events that occur three months after, one year after, and three years after the announcement dates. Three types of mergers are considered: two-stage cash mergers – including IPO-financed, non-shelf SEO-financed, shelf SEO-financed cash mergers – and its two types of corresponding matching firms, simple cash mergers, and simple stock mergers. Panels A, B, and C show buy-and-hold returns three months after, one year after, and three years after announcement date, respectively. Equally weighted average three-year buy-and-hold percentage returns (BHR) after merger announcements are calculated from the week following each event to the earlier of either the three-year anniversary, the delisting week, or December 31, 2009. Market-adjusted returns are calculated for all five types of returns as a buy-and-hold return minus its compounded weekly return on the CRSP value-weighted index of AMEX, Nasdaq, and NYSE firms. The conventional *t*-test is used as the statistical test for market-adjusted BHAR. As in Lyon, Barber and Tsai's (1999), we construct 70 reference portfolios at the end of June of each year from 1984 to 2008. Some of the book values for our two-stage M&As are retrieved from SEC's website (COMPUSTAT data was missing for these companies). Additionally, seven BE/ME observations cannot be retrieved from either of these two sources, thus reducing our sample size when conducting BHR to 1,485 firms. Matching firm-adjusted BHARs for all two-stage mergers are calculated as buy-and-hold returns minus their compounded weekly buy-and-hold returns on their individual most-correlated firms (MC1). In MC1, the matching firm is the single most correlated firm within the subset of firms in the size and M/B matching portfolio. Fisher's sign test is used as the statistical test for matching firm-adjusted BHAR. Statistical significance 1%, 5%, and 10% level is indicated with ***, **, and *, respectively.

Panel A: 3 months after

	Buy and hold returns	Market adjusted returns	Matching firms - adjusted abnormal returns (MC1)	# of samples
Simple cash mergers	3.83%	0.38%		1485
Simple stock mergers	1.13%	-1.84%***		1485
Two-stage cash mergers	2.04%	-1.21%*	-0.53%	1485
a. Non shelf SEO financed	2.73%	-0.83%	-0.88%*	721
b. Shelf SEO financed	0.71%	-1.26%	-1.02%	324
c. IPO financed	1.90%	-1.79%	0.38%	440
Significant difference between two-stage and simple stock		0.91% t-stat=0.99		

Panel B: 1 year after

	Buy and hold returns	Market adjusted returns	Matching firms -adjusted abnormal returns (MC1)	# of samples
Simple cash mergers	15.16%	1.25%		1485
Simple stock mergers	5.63%	-8.36%***		1485
Two-stage cash mergers	8.51%	-5.53%***	-2.76%***	1485
a. Non shelf SEO financed	9.75%	-4.95%*	-2.61%***	721
b. Shelf SEO financed	7.04%	-3.37%*	-5.48%	324
c. IPO financed	7.55%	-8.07%**	-1.00%**	440
Significant difference between two-stage and simple stock		2.87% t-stat=1.28		

Panel C: 3 years after

	Buy and hold returns	Market adjusted returns	Matching firms- adjusted abnormal returns (MC1)	# of samples
Simple cash mergers	25.90%	-7.94%***		1485
Simple stock mergers	10.00%	-23.42%***		1485
Two-stage cash mergers	20.21%	-15.74%***	-12.99%***	1485
a. Non shelf SEO financed	17.56%	-22.80%***	-18.19%***	721
b. Shelf SEO financed	21.94%	0.25%	-17.65%	324
c. IPO financed	23.28%	-15.93%*	-1.05%***	440
Significant difference between two-stage and simple stock		10.21% t-stat=2.40		

Table 8: Quality of the Target Firm: Only Negative Pre-Merger Returns for Acquirer

The table focuses on samples in which only negative returns between IPO/SEO and M&A announcements to merger dates are considered. Panels A and B show the buy-and-hold returns one year after and three years after merger announcements, respectively. Three types of mergers are considered: non-shelf SEO-financed cash mergers, shelf SEO-financed cash mergers, and IPO-financed cash mergers. Equally weighted average three-year buy-and-hold percentage returns (BHR) after merger announcements are calculated from the week following each event to the earlier of either the three-year anniversary, the delisting week, or December 31, 2009. Following Lyon, Barber and Tsai's (1999) procedures, we construct the 70 reference portfolios at the end of June of each year from 1984 to 2008. Reference portfolio-adjusted BHARs for all two-stage cash mergers are calculated as buy-and-hold returns minus their compounded weekly buy-and-hold returns on their respective matching reference portfolios. Matching firm-adjusted BHARs for all two-stage cash mergers are calculated as buy-and-hold returns minus their compounded weekly buy-and-hold returns on their individual most-correlated firms (MC1). In MC1, the matching firm is the single most correlated firm within the subset of firms in the size and M/B matching portfolio. Fisher's sign test is used as the statistical test for matching firm-adjusted BHAR. The conventional t-test is used as the statistical test for reference portfolio-adjusted BHARs. Statistical significance 1%, 5%, and 10% level is indicated with ***, **, and *, respectively. Parentheses refer to the number of samples.

Panel A: 1 year after

	2 stage buy and hold returns	Simple stock, Comparison group	Reference portfolio-adjusted BHAR (size, M/B)	Matching firm - adjusted abnormal return (MC1)
All two-stage	9.01% (613)	12.67% (613)	-10.48% ***	-3.99% ***
SEO, shelf	3.92% (114)	NA	-8.52% ***	-8.93% **
SEO, non-shelf	11.96% (315)	NA	-7.29%	-3.21% ***
IPO	7.10% (184)	NA	-17.18% ***	-2.26% **

Panel B: 3 years after

	2 stage buy and hold returns	Simple stock, Comparison group	Reference portfolio-adjusted BHAR (size, M/B)	Matching firm - adjusted abnormal return (MC1)
All two-stage	24.24% (613)	16.54% (613)	-27.87% ***	-16.50% ***
SEO, shelf	13.63% (114)	NA	-18.17% ***	-35.11%
SEO, non-shelf	24.33% (315)	NA	-27.99% ***	-23.91% ***
IPO	30.67% (184)	NA	-33.68% **	7.80%