THE TIMING AND REVALUATION MOTIVES IN STOCK LISTING CHANGES: EVIDENCE FROM OPERATING PERFORMANCE

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ABSTRACT

We develop predictions regarding firm operating performance consistent, respectively, with the timing and revaluation motives associated with stock listing changes. Some firms may exploit a window of opportunity to list whereas other firms are interested in increasing their visibility in order to induce a favorable revaluation. We do not find clear evidence in favor of either motive. There is some evidence that stricter initial listing standards are associated with relatively better post-listing operating performance. However, controlling for several factors in regression analysis tests removes any statistically significant relationship between the timing and revaluation motives and subsequent operating performance. The evidence suggests that the attribution of negative post-listing performance to the timing motive found in earlier studies appears to be unwarranted.

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I. Introduction

A considerable body of research on exchange listings has identified three main motives for firms to seek listing of the their stock on a new trading venue. These motives are: the potential for a reduction of marketability costs; improvement in visibility and investor base; and the signaling of favorable future performance. Christie and Huang (1994), Kadlec and McConnell (1994) and Elyasiani, Hauser and Lauterbach (2000) report evidence of reduced liquidity costs (i.e., bid-ask spreads) when Nasdaq and American Stock Exchange (AMEX) stocks list on the New York Stock Exchange (NYSE). Grammatikos and Papaioannou (1986a), Kadlec and McConnell (1994) and Elyasiani, Hauser and Lauterbach (2000) document positive market reaction to the expected reduction of liquidity costs. Kadlec and McConnell (1994), Baker and Johnson (1990), Baker, Powell and Weaver (1999a, 1999b), Baker, Nofsinger and Weaver (2002) and Foerster and Karolyi (1999) report significant gains in investor base and visibility when domestic stocks are listed on another market in the U.S. or international stocks list on an U.S. market. Grammatikos and Papaioannou (1986b) find empirical evidence for the conjecture in Ying et al. (1977) and Sanger and McConnell (1986) that listing on a market with stricter listing standards can serve as a credible signal of managerial confidence.

However, research on the post-listing performance of newly listed stocks has shown that the positive market reaction up to the time of listing is followed by negative stock price performance after listing (Ying et al. (1977) and McConnell and Sanger (1987)). More recently, Dharan and Ikenberry (1995) and Webb (1999) report evidence of negative excess returns over medium and long investment horizons following listing. Papaioannou, Travlos and Viswanathan (2003) also confirm the inferior post-listing performance, measured in operating returns, for certain groups of, especially small, stocks. The post-listing stock and operating return erosion has been interpreted as evidence of opportunistic timing of the listing decision. That is, managers self-select the timing of the listing decision to coincide with a period of unusually

strong performance which is followed by a post-listing decline.

Although firms, especially smaller ones, may have a timing motive to list while their performance is strong, the listing change attracts attention and generates additional information that can lead to a firm revaluation. In this study, we derive the implications of the timing and revaluation motives on the post-listing operating performance of firms and empirically test whether post-listing operating performance is consistent with these motives.

The timing motive implies that managers have unfavorable private information about the firm's future prospects that might jeopardize their listing eligibility. Therefore, the timing motive would generally imply negative post-listing performance. On the contrary, the revaluation motive suggests that managers have favorable private information about the firm's prospects. Hence, this motive would generally imply positive post-listing performance. The relevance of the timing or revaluation motive depends, however, on the characteristics of the firm. We use the listing criterion of a minimum equity market capitalization to construct two groups of firms which have, respectively, high and low ratios of equity market value to the required minimum capitalization. While timing the listing decision has little value to high ratio firms, it is crucial to low ratio firms which are more vulnerable to missing the size-related listing standards. We also distinguish between well-known and less well-known firms according to institutional stock ownership. Well-known firms are not likely to benefit from revaluation since their shares are held by well-informed investors. Less well-known firms with favorable private information can benefit by inducing a positive revaluation as investor attention increases due to the listing change.

We find no clear evidence in support of either motive. Low ratio and well-known firms (i.e., the firms with a strong timing motive) show no decline in post-listing operating performance. High ratio and less well-known firms (i.e., the firms with a strong revaluation motive) display mixed performance. High ratio and less well-known firms moving from AMEX to NYSE experience significant improvement, whereas those moving from Nasdaq to AMEX realize significant decline in operating performance . High ratio firms have no strong reason to time their listing change. The revaluation motive suggests that less well-known firms switch if they expect favorable post-listing performance. It is puzzling, therefore, to find negative

operating performance for high ratio and less well-known Nasdaq firms that switch to the AMEX. We also report some tentative evidence that the stricter initial listing standards of the NYSE are associated with relatively better operating performance for firms switching to the NYSE than to AMEX. Nonetheless, results from regression analysis tests reveal that the patterns of operating return changes consistent with the timing and revaluation motives disappear once we control for various factors.

The study is important for several reasons. First, it draws specific predictions about operating performance based on the timing and revaluation motives of stock listing changes. Second, it produces evidence regarding the implications of initial listing standards for post-listing firm performance. Third, its findings help qualify the evidence reported in previous studies in favor of the timing motive.

The next section builds on previous research to develop the hypotheses and their testable predictions. Section 3 describes the data and methodology. Section 4 presents and interprets the findings; and section 5 concludes with a summary and the implications of the study.

II. Previous Research and Testable Predictions

The timing and revaluation motives

Previous research has shown that various types of corporate decisions seem to be made when managers believe that their firm appears to be either overvalued or undervalued by the market.[1] Along this vein, Dharan and Ikenberry (1995) report negative stock return performance in the post-listing period which is concentrated within a subset of small firms (mostly Nasdaq stocks listed on the AMEX) with relatively low institutional stock holdings. These firms are more likely to self-select the timing of their listing change so that it coincides with a window of opportunity. They propose that this is evidence consistent with the hypothesis of opportunistic timing of corporate decisions. Webb (1999) also reports that listing stocks experience worse

[1] Loughran and Ritter (1995 and 1997) for initial public offerings (IPOs) and seasoned equity offerings (SEOs); Spiess and Affleck-Graves (1999) for debt offerings; D'Mello and Shroff (2000) for stock repurchases; and Ikenberry and Ramnath (2002) for stock splits.

post-listing stock return performance than non-listing stocks. Stocks with the best pre-listing return performance tend to have the worst post-listing return performance. She interprets these findings as evidence that managers initiate listing changes following periods of strong firm performance. Tandon and Webb (2001) focus on trading volume changes around the listing time and post-listing stock return performance. They find that stocks with high pre-listing trading activity exhibit inferior (relative to control samples) returns after listing. This inverse relationship is stronger for Nasdaq-to-AMEX listers but weak for AMEX-to-NYSE and not present for Nasdaq-to-NYSE listers. They conclude that firms switch their listing during periods of strong market interest in these firms, which they attribute to possible over-optimism about the firms' prospects.

After controlling for mean-reversion and industry effects, Papaioannou, Travlos and Viswanathan (2002) provide evidence of inferior operating performance (measured as operating return on assets and operating return on sales) in the post-listing period which is concentrated mostly in the small and low-institutional-ownership Nasdaq-to-AMEX stocks. They also show that firms tend to list following a period of improvement in operating performance.

The motive of opportunistic timing in the listing decision is most relevant to relatively small firms. Given that the most demanding quantitative listing standards are book and market value of equity and income, it is the smaller firms which are more likely to lose their listing eligibility to a stricter market if they experience erosion in operating performance. If the managers of such firms are uncertain whether the firm is likely to sustain a minimum size in value or profits, they may choose to list the stock on the new market before the operating fundamentals deteriorate. On the contrary, large firms can satisfy the higher initial listing standards on a much more sustained basis; hence, these firms have no reason to time their listing decision.

The listing change can attract, however, attention to the stock and be used to uncover positive private information.[2] The potential of the listing decision to reveal or generate new information about the firm has received a lot of attention in recent research. Baker and Johnson

[2] For example, Sanger and McConnell (1986) write "managers who feel that their firm's stock is currently undervalued may obtain a listing to attract increased scrutiny by the market." See also Ying et al. (1977)

(1990) report that managers rank improved visibility through listing as an important motive of the decision to move the trading of their stock on a more visible and established exchange. Consistent with this view, Baker, Powell and Weaver (1999a) find significant increases in visibility proxies, like number of institutions and shares held by institutions for stocks that move from the Nasdaq to the AMEX. Baker, Powell and Weaver (1999b) also report visibility gains for Nasdaq firms moving to the NYSE, though these gains seem to be attributed more to positive changes in equity market value than to the change in trading venue.[3] The potential for visibility gains and increased investor attention has formed the premise for value gains in recent studies on international cross-listings (including Baker, Nofsinger and Weaver (2002) and Foerster and Karolyi (1999)). The models of Chemmanur and Fulghieri (1999 and 2003) and Furst (1998) also establish a revaluation and signaling effect for listing given the different initial listing standards and regulatory requirements exchanges choose to adopt.

Consequently, firms that engage in opportunistic timing of listing must consider the revaluation potential of their decision. The increased visibility and investor attention to the newly listed stock suggests that as outside investors become more informed about the true condition of the firm, they will adjust its value. The potential for revaluation is much greater for the subset of listing firms which are less well-known. The scope for revaluation is minimal for well-known firms. Therefore, under conditions of informational asymmetry, the timing motive of listing can be moderated by the need to avoid a possible negative revaluation of the firm. Accordingly, relatively small, thus vulnerable, and less well-known firms can achieve a listing change through timing but can suffer a negative revaluation. Unless other benefits from listing (e.g., lower liquidity costs) offset the loss of value due to negative revaluation, small and less well-known firms are expected to avoid opportunistic timing of listing. Besides, small firms are more likely to lose their listing privilege by satisfying the minimum standards. Although timing is of little value to larger and less well-known firms, they can use the listing change to induce a positive revaluation if they have favorable private information. Since large (though less well-known) firms have more discretionary power in choosing the time of their listing change, it is

[3] The potential of stock listings to generate new information is also supported by evidence in Bradford, Martin and Whyte (2002) for a sample of cross-border listings.

unlikely they would risk a negative revaluation by listing at a time their private information is not favorable. On the other hand, well-known firms are much less exposed to potential revaluation. Yet, small well-known firms have a strong timing motive which need not be compromised by the concern of negative revaluation. Finally, large well-known firms have no timing motive and very low exposure to revaluation.

Considering the timing and revaluation effects together allows us to draw the following predictions:

1. *The timing motive should dominate the revaluation effect for small and well-known firms. Hence, these firms are associated with a negative post-listing operating performance.*
2. *The revaluation effect should dominate the timing motive for less well-known small and, especially, large firms. Hence, these firms are associated with a positive post-listing operating performance.*

No specific prediction can be made for the large and well-known firms, since they have no reason to favor either motive.

The Initial Standards Hypothesis

In deriving conditions under which firms choose to issue equity in the public market, Chemmanur and Fulghieri (1999) note that the stricter the initial listing requirements of a market, the more information is released about the firm to outside investors. This drives down the cost outside investors need to incur in order to become more informed about the firm. Therefore, stricter initial standards have the potential of causing greater production and flow of information and, thus, have a stronger revaluation effect. Less well-known firms with strong favorable private information have an incentive to list on a market whose standards for initial listing have the potential to produce the greatest possible production and flow of new information to investors.[4] They can accomplish this by listing on an exchange with more demanding standards for listing. Since the NYSE has maintained stricter initial standards than

[4] In Chemmanur and Fulghieri (2003) stricter initial standards also increase the number of analysts and, hence, the potency of the revaluation effect.

either the Nasdaq or the AMEX , we draw the following prediction:

3. *Less well-known firms switching their listing from the Nasdaq to the NYSE experience greater post-listing improvement in operating performance than less well-known Nasdaq firms that choose to list on the AMEX.*

III. Data and Methodology

Sample and Data

The initial population of exchange listings is retrieved from the respective *Fact Books* of the AMEX and NYSE, and is cross-verified against listing information available in the Center for Research in Security Prices (CRSP) tapes. We are able to identify a total of 1703 firms which switched listings in the 19-year period from 1978 to 1996. The final sample of 359 firms includes 155 firms switching from Nasdaq to NYSE, 112 switching from Nasdaq to AMEX and 92 switching from AMEX to NYSE.[5]

Excluded from the sample are financial services firms, real estate investment trusts (REITs), closed-end funds and American Depository Receipts. We also exclude firms which had an IPO three years prior to the listing year and/or an SEO within two years before or three years after the listing year. These firms are excluded because of evidence of post-issue operating underperformance (Jain and Kini (1994); Loughran and Ritter (1997)).[6] The remaining sample is checked for data availability in the Compustat tapes over the years -3 to +3 relative to the year of listing change, or year 0. Firms with missing data in year -1 are dropped altogether. Firms are included in the post-listing tests if they have available data at least in one of the post-listing years, +1, +2, or +3. Thus, our final sample is free of survivorship bias since it includes firms that might have been delisted for various reasons after year +1.

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[5] Until its repeal in July 1999, Rule 500 made it impossible for NYSE listed stocks to move to Nasdaq or AMEX.

[6] We identify listing firms with IPOs or SEOs around the listing year by searching the *Wall Street Journal Index* as well as the database for SEOs developed by Ritter.

Measurement and Control Methods

The measurement period extends from the fiscal year -3 to the fiscal year +3 relative to the year of listing. Following Barber and Lyon (1996), we measure changes in operating performance by focusing on operating return on assets. Operating return on assets is measured as operating income or earnings before depreciation and taxes (Compustat data item 13) divided by total assets (Compustat data item 6).

The operating performance of sample firms must be compared to an appropriate benchmark. Since many of the firms that switch listing are relatively small in size and often experience unusual operating performance in the pre-listing period, we follow the matching-control firm approach prescribed by Barber and Lyon (1996). This approach takes into account the size of listing firms, their industrial classification and their pre-event performance. Matching by the pre-event operating performance also controls for the natural tendency of accounting ratios to mean-revert over time (Penman (1991)). Each firm in the sample is matched with firms that satisfy the following criteria as of year -1. Their operating return on assets is in the range of 90 to 110 percent of the operating return on assets of the sample firm; their assets (measured by book value) range between 70 and 130 percent of the assets of the sample firm; and they are in the same two-digit SIC code as the sample firm. As suggested by Barber and Lyon, sample firms that are impossible to match by all three criteria are matched by pre-listing operating performance only. We use the total population of firms in the Compustat tapes to identify appropriate matches among those firms which have not undergone a listing change in the year -3 to year +3 period for the corresponding switching firm and have available data in all years in this period .

Our main focus is on the match-adjusted changes of this metric computed as suggested in Barber and Lyon (1996). For each listing firm, we compute the change in the operating return on assets between year -1 and each post-listing year +1, +2 and +3. For each matched portfolio, we also compute the change in the median values of the performance measure over the same comparison intervals. We then subtract the matched portfolio change from the firm-specific change to compute the match-adjusted change in operating performance over each interval.

We partition the sample of listing firms into four groups using measures that account for the listing requirement for minimum equity value and the institutional stock ownership of each firm. Equity size is the most common and critical listing standard (see Table 1). Given the greater emphasis exchanges place on equity market value, as well as its greater volatility compared to book value, we use the equity market value as a reasonable gauge of a firm's ability to satisfy the listing standards of another trading venue. To gauge the relevance of the timing motive, we compute the ratio of each firm's equity market value in year -1 to the market capitalization required by the initial listing standards of the new market. [7] A firm is classified in the low ratio group if it falls below the median ratio of the sample firms that switch their listing to the same market (e.g., Nasdaq or AMEX firms switching to NYSE) . Otherwise, a firm is classified in the high ratio group. We adopt this classification method on the premise that the timing motive is stronger for those firms which satisfy the market capitalization standard less than other firms. The window of opportunity to list is, therefore, critical for those firms found to have a low ratio of market capitalization.

[7] We adjust the minimum amount required when this requirement changes over time.

Table 1. Selected initial and continued listing requirements for the NYSE, AMEX and Nasdaq.

	NYSE			AMEX			Nasdaq[2]	
	1978	1984	1996	1978	1984	1996	1988	1996
Initial listing requirements								
Market value of publicly held equity (in $ millions)	14.4	18.0	40.0	3.0	3.0	3.0	na 2.0 or 8.0	3.0 or 15.0
Net tangible assets (in $ millions)	16.0	18.0	40.0	4.0	4.0	4.0	1.0 1.0 or 8.0	4.0 or 12.0
Pre-tax income[1] (in $ millions)	2.5	2.5	2.5	0.75	0.75	0.75	na 0.3 or na	0.75 or na
Continued listing requirements								
Market value of publicly held equity (in $ millions)	4.5	5.0	8.0	1.0	1.0	1.0	na 2.0	1.0

1 In the most recent year.

2 In 1988, the standards refer to the Nasdaq market (first row) and the Nasdaq/NMS (second row); in 1996, the numbers refer to the Nasdaq National Market. Multiple numbers refer to alternate minimum standards.

To apply the institutional ownership criterion, we collect percentage institutional holdings for all listing firms in our sample from the *Standard & Poors Security Owners Guide*. Since our study covers a long period during which institutional equity ownership had risen considerably, we standardize the percentage of institutional stock ownership of each listing firm by dividing the fraction of each firm's shares held by institutions as of end of year -1 by the percentage of institutional holdings of U.S. stocks in the same year. The source for the aggregate institutional holdings is the *Securities Industry Association 1999 Fact Book.* A sample firm is classified as less well-known if its percentage of institutional holdings in year -1 is below the percentage of institutional holdings for all U.S. stocks in that year. Otherwise, a firm is classified as well-known.

Table 2 reports descriptive statistics for the four groups of listing firms. Focusing first on the low ratio firms (both less well-known and well-known), we notice that Nasdaq and AMEX firms switching to NYSE are considerably larger in asset size, equity market capitalization and institutional ownership than the Nasdaq firms switching to AMEX. Low ratio and well-known firms are also bigger on all counts than low ratio less well-known firms. As expected, only a small number of switching firms are classified as low ratio and well-known. Since the Nasdaq to AMEX listers are relatively very small firms, none of them is classified as well-known. These findings are consistent with the general view that size and visibility are strongly related. The same picture emerges when we turn to the two groups of high ratio firms. Very few (namely, only three) of the Nasdaq to AMEX are both high ratio and well-known. The market capitalization ratios reveal that there is a large discrepancy between the average or median ratios of low and high ratio firms. Median ratios vary from 2.91 to 7.81 for the low ratio firms, whereas the median ratios vary from 12.21 to 39.62 for the high ratio firms.

Table 2. Selected Characteristics of Sample of Switching Firms

Variable	All Firms	Firms Switching From: Nasdaq to NYSE	Nasdaq to AMEX	AMEX to NYSE
Low-Ratio and Less-Well-Known Firms				
Number of Firms	161	58	48	55
Average Total Assets (in $ Mil)	96.7	149.1	20.3	108.2
Median Total Assets (in $ Mil)	58.0	93.4	18.5	76.8
Average Market Capitalization (in $ Mil)	62.9	97.3	9.0	73.6
Median Market Capitalization (in $ Mil)	41.6	86.4	9.5	53.3
Average Standardized Institutional Holdings (%)	33.1	46.4	11.6	38.1
Median Standardized Institutional Holdings (%)	26.4	43.8	3.3	36.1
Average Market Capitalization Ratio	3.92	4.75	3.02	3.84
Median Market Capitalization Ratio	3.50	4.67	3.16	2.91
Low-Ratio and Well-Known Firms				
Number of Firms	13	11	0	2
Average Total Assets (in $ Mil)	254.4	277.6	NA	126.8
Median Total Assets (in $ Mil)	152.1	186.4	NA	126.8
Average Market Capitalization (in $ Mil)	125.8	125.5	NA	127.4
Median Market Capitalization (in $ Mil)	125.2	125.2	NA	127.4
Average Standardized Institutional Holdings (%)	118.8	117.0	NA	129.0
Median Standardized Institutional Holdings (%)	118.0	117.9	NA	129.0
Average Market Capitalization Ratio	6.01	5.68	NA	7.81
Median Market Capitalization Ratio	6.38	6.16	NA	7.81
High-Ratio and Less-Well-Known Firms				
Number of Firms	127	44	61	22
Average Total Assets (in $ Mil)	270.9	356.0	71.9	652.7
Median Total Assets (in $ Mil)	100.8	211.5	33.1	287.1
Average Market Capitalization (in $ Mil)	357.9	488.1	64.8	910.0
Median Market Capitalization (in $ Mil)	167.1	293.5	36.6	297.9
Average Standardized Institutional Holdings (%)	39.4	59.0	22.1	48.4
Median Standardized Institutional Holdings (%)	33.8	62.8	18.0	42.6
Average Market Capitalization Ratio	29.04	27.85	21.60	52.06
Median Market Capitalization Ratio	14.84	16.30	12.21	17.56

Table 2. (continued)

High-Ratio and Well-Known Firms				
Number of Firms	58	42	3	13
Average Total Assets (in $ Mil)	579.9	561.3	102.6	750.5
Median Total Assets (in $ Mil)	371.7	316.8	111.3	690.1
Average Market Capitalization (in $ Mil)	1050.5	1118.8	68.2	1056.6
Median Market Capitalization (in $ Mil)	564.8	542.0	71.2	713.2
Average Standardized Institutional Holdings (%)	131.1	132.3	165.8	119.5
Median Standardized Institutional Holdings (%)	131.2	134.7	163.9	117.5
Average Market Capitalization Ratio	50.28	50.45	22.75	56.12
Median Market Capitalization Ratio	30.54	27.94	23.72	39.62

Note: This table shows selected characteristics of the 359 firms that switched their stock listings during the period 1978 to 1996. A listing firm is classified as a Low-Ratio firm if its Market Capitalization Ratio is lesser than the median Market Capitalization Ratio of the sample firms listing on an exchange, and as a High-Ratio firm otherwise. A listing firm is classified as a Less-Well-Known firm if the institutional holdings of its equity in year –1 is less than the average institutional holdings of equity of all US stocks for that year as reported by the *Securities Industries Association Factbook,* and as a Well-Known firm otherwise. Total assets, market capitalization (equity market value), standardized institutional holdings and market capitalization ratio of firms are for the year prior to the change in market listing. The market capitalization ratio is computed by dividing the equity market value of a firm by the required equity value for listing on the new exchange for the listing year as reported in the NYSE and AMEX *Factbooks*. The standardized institutional holdings are computed by dividing the percentage of institutional share holdings of each switching firm by the percentage of institutional holdings of U.S. stocks for the same year as reported in the *Securities Industry Association 1999 Factbook*.

IV. Results

Preliminary Evidence on Timing and Revaluation

We start our analysis by examining first how relevant the timing and revaluation motives are, respectively, for firms that switch their stock listing. The timing motive suggests that firms would be more vulnerable in missing the size requirement if their equity value is above but close to the listing standard. We use the ratios of equity value to the required market capitalization to estimate several descriptive statistics which are presented in Table 3. During the period of this study, the NYSE - the market with the strictest listing requirements - changed its market capitalization standard in 1984 and 1995. Therefore, for the Nasdaq and AMEX firms that switched to NYSE, we divide our observations into three sub-periods: 1978-1983, 1984-1994,

and 1995-1996 . No such change in the equity value standard took effect on the AMEX during the study period.

Table 3 shows that the median of the market capitalization ratios for the Nasdaq firms that listed on the NYSE increased from 5.01 in the period 1978-1983 to 10.75 in the period 1984-1994 and then fell to 7.57 in the two-year period 1995-1996. Likewise, the median ratio for the AMEX stocks that were listed on the NYSE rose from 3.12 during 1978-1983 to 8.54 in the period 1984-1994 before dropping to 4.31 in 1995-1996. Finally, the median ratio was 5.73 for Nasdaq stocks switching to the AMEX during the 1978-1996 period. We also estimated the fraction of listing stocks with market capitalization ratios less than or equal to 2. These firms would fail to satisfy the minimum requirement for initial listing if they were to lose at least 50 percent of their market capitalization. Therefore, these are the firms with a strong motive to list before future erosion of equity value would threaten their new listing. As Table 3 shows, no more than 12 percent of the Nasdaq stocks switching to NYSE or AMEX fall in this category. Interestingly, the usually large (in market capitalization) AMEX firms that switched to the NYSE had much higher percentages of stocks with a ratio less than or equal to 2. Specifically, 37 percent of the firms switching in the 1978-1983 period and 17 percent of those switching in 1995-1996 had ratios which were less than or equal to 2. These findings suggest that while the overwhelming majority of Nasdaq stocks listing on the AMEX or NYSE had almost no reason to time their listing, a good portion of AMEX stocks listing on the NYSE appeared to be more vulnerable to the market capitalization standard for initial listing.

Table 3. Median Equity Market Values and Median Market Capitalization Ratios for Switching Firms

Time Period	Number of Firms	Median Equity Market Value (in $ millions)	Median Market Capitalization Ratio	Percentage of Firms with Market Capitalization Ratio <2
Nasdaq to NYSE Firms				
1978-1983	26	72.09	5.01	12
1984-1994	95	193.57	10.75	5
1995-1996	34	302.84	7.57	3
AMEX to NYSE Firms				
1978-1983	30	44.90	3.12	37
1984-1994	50	153.84	8.54	6
1995-1996	12	172.28	4.31	17
Nasdaq to AMEX Firms				
1978-1996	112	17.18	5.73	11

Note: This table shows the median equity values and median market capitalization ratios of the 359 firms that switched their stock listings during the period 1978 to 1996. The equity market value is for the year prior to the change in the market listing. The market capitalization ratio is computed by dividing the equity market value of a firm by the required equity value for listing on the new exchange for the listing year as reported in the NYSE and AMEX *Factbooks*.

The revaluation motive is relevant if investor interest in the firm increases after listing. As described above, our proxy of the firm's visibility is the standardized percentage of its stock held by institutions. Table 4 shows median and mean values of standardized institutional holdings in year -1 and +1 relative to the listing year 0 as well as their respective changes for various classifications of the sample firms. The data show that there are statistically significant gains for less well-known firms with both low and high ratios. The opposite is shown for the well-known firms. Further, the changes differ significantly from a statistical standpoint. These findings suggest that firms with relatively low institutional ownership prior to their new listing attracted more investor interest (as evinced by the increase in institutional holdings). Therefore, less-well-known firms have a strong potential for revaluation as a result of the listing change.

Table 4. Changes in Standardized Institutional Holdings for Switching Firms

	Year -1	Year +1	Change
Panel A. Less-Well-Known and Well-Known Firms			
Median for Less-Well-Known Firms (N=288)	30.93	41.13	4.54***
Median for Well-Known firms (N=71)	126.96	117.39	-10.21***
Z-Score for Difference between Less-Well-Known and Well-Known Firms			-6.98***
Mean for Less-Well-Known Firms (N=288)	35.92	45.03	9.10***
Mean for Well-Known firms (N=71)	129.29	116.90	-12.39***
Difference in change in institutional holdings between Less-Well-Known and Well-Known Firms			21.49*** (6.99)
Panel B. Low-Ratio Less-Well-Known and Low-Ratio Well-Known Firms			
Median for Low-Ratio Less-Well-Known Firms (N=161)	26.44	38.08	4.66***
Median for Low-Ratio Well-Known firms (N=13)	118.78	101.89	-17.47***
Z-Score for Difference between Low-ratio Less-Well-Known and Low-Ratio Well-Known Firms			-3.58***
Mean for Low-Ratio Less-Well-Known Firms (N=161)	33.17	42.15	8.98***
Mean for Low-Ratio Well-Known firms (N=13)	121.62	103.85	-17.76***
Difference in change in institutional holdings between Low-Ratio Less-Well-Known and Low-Ratio Well-Known Firms			26.74*** (3.28)
Panel C. High-Ratio Less-Well-Known and High-Ratio Well-Known Firms			
Median for High-Ratio Less-Well-Known Firms (N=127)	33.76	44.66	4.27***
Median for High-Ratio Well-Known firms (N=58)	131.18	121.52	-9.12***
Z-Score for Difference between High-Ratio Less-Well-Known and High-Ratio Well-Known Firms			-5.65***
Mean for High-Ratio Less-Well-Known Firms (N=127)	39.42	48.48	9.26***
Mean for Well-Known firms (N=58)	131.14	120.05	-11.10***
Difference in change in institutional holdings between High-Ratio Less-Well-Known and High-Ratio Well-Known Firms			20.36*** (5.78)

Note: This table shows mean and median values of standardized institutional holdings and changes in standardized institutional holdings for firms that switched from the Nasdaq to the NYSE, Nasdaq to the AMEX, and the AMEX to the NYSE during the period 1978 to 1996. The listing sample consists of 359 firms out of 1703 firms that switched their stock listing from Nasdaq and AMEX to the NYSE during this period. A listing firm is classified as a Low-Ratio firm if its market capitalization ratio is lesser than the median market capitalization ratio of the sample firms listing on an exchange, and as a High-Ratio firm otherwise. A listing firm is classified as a Less-Well-Known firm if the institutional holdings of its equity in year –1 is less than the average institutional holdings of equity of all US stocks for that year as reported by the *Securities Industries Association Factbook,* and as a Well-Known firm otherwise. The relative equity market value is computed by dividing the equity market value of a firm by the required equity value for listing on the new exchange for the listing year as reported in the NYSE and AMEX *Factbooks*. The standardized institutional holdings are computed by dividing the percentage of institutional share holdings of each switching firm by the percentage of institutional holdings of U.S. stocks for the same year as reported in the *Securities Industry Association 1999 Factbook*. The significance tests are based on the Wilcoxon signed rank test. The Z statistics reported are for the differences in median levels of subgroups of the listing firms, and are based on the Wilcoxon two-sample signed rank test. The T-statistics for differences in mean values of two subgroups are shown in parenthesis.

*** Significant at the level of 1%

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Operating Performance Tests

Table 5 reports the median changes in operating return on assets for listing and matching firms as well as the match-adjusted changes for the groups of listing firms classified as (a) low ratio and less well-known; (b) low ratio and well-known; (c) high ratio and less well-known; and (d) high ratio and well-known. First, it is interesting to note that with few exceptions listing and matching firms realize negative changes in operating performance, many of which are statistically significant. Both listing and matching firms seem to share common factors that affect their operating performance. Next we turn to the main variable of investigation, the match-adjusted changes. According to prediction 1, low ratio and well-known firms have a strong timing motive. Hence, they should be associated with negative changes in operating return. No such evidence is found in Table 5. According to prediction 2, especially high ratio, but also low ratio, less well-known firms should have a strong revaluation motive. First, none of the match-adjusted changes of the low ratio and less well-known firms are statistically significant. Thus, there is no evidence for the revaluation motive. The group of high ratio and less well-known firms displays mixed evidence in support of the revaluation motive. Specifically, high ratio and less well-known firms moving from AMEX to NYSE realize a statistically significant match-adjusted change from year -1 to year +2, which is positive. This is consistent with prediction 2. On the contrary, high ratio and less well-known Nasdaq firms that switch their listing to AMEX experience negative match-adjusted changes in operating return which are statistically significant in the intervals year -1 to year +2 and year -1 to year +3. Although the timing motive is consistent with this pattern, it should not apply to high ratio and less well-known firms for which the listing change should be driven by the revaluation potential. Therefore, this negative post-listing performance is not consistent with the predicted performance of high ratio and less well-known firms. Finally, as expected, the high ratio and well-known firms experience negative as well as positive match-adjusted changes in operating return, but none of the changes is statistically significant within the three groups of listers.

The above findings suggest that neither motive - opportunistic timing or revaluation - seems to be supported by the evidence from the post-listing operating performance. Nonetheless, three findings deserve more attention. First, low ratio well-known stocks do not

display the post-listing under-performance anticipated by the timing hypothesis. One possible explanation is that low ratio well-known firms are concerned with maintaining the requirements for continued listing on the new market. Accordingly, it is possible that only those low ratio firms with strong expectations of sustained performance choose to move their listing to a market with stricter standards for listing maintenance. Second, the pattern of negative post-listing performance does not apply to all the Nasdaq firms that move to the AMEX as implied in previous studies (e.g., Dharan and Ikenberry (1995) and Papaioannou, Viswanathan, and Travlos (2003)). Only the high ratio and less well-known Nasdaq firms that switch to AMEX display erosion in operating performance. It is puzzling that these high ratio but less well-known Nasdaq firms appear to act as if the timing motive is at work, when their falling post-listing performance exposes them to the risk of a negative revaluation caused by increased attention by investors as a result of the listing change. Third, contrary to the impression that a good fraction of AMEX stocks switching to NYSE are vulnerable to timing, (as shown in Table 3) their post-listing performance shows no evidence of the timing motive.

Table 5. Median Changes and Match-Adjusted Changes of Operating Performance of Switching Firms Grouped by Market Capitalization Ratio and Standardized Institutional Holdings

Variable	All Firms	Firms Switching From: Nasdaq to NYSE	Nasdaq to AMEX	AMEX to NYSE
Low-Ratio and Less-Well-Known Firms				
Year -1 to Year +1				
Listing Firms	-1.38***	-2.77***	-0.74	-1.36*
Matched Firms	-1.23***	-1.34***	-1.42**	-0.93***
Match-Adjusted Change	0.89	0.67	1.34	-0.82
	(161)	(58)	(48)	(55)
Year -1 to Year +2				
Listing Firms	-2.51***	-2.87***	-2.55***	-2.27***
Matched Firms	-1.86***	-1.59***	-2.51***	-1.96***
Match-Adjusted Change	-0.72	-1.06	-1.57	0.57
	(156)	(55)	(47)	(54)
Year -1 to Year +3				
Listing Firms	-3.73***	-4.61***	-3.11***	-3.48***
Matched Firms	-2.63***	-3.11***	-2.30***	-2.63***
Match-Adjusted Change	-0.53	-0.53	0.20	-1.54
	(151)	(53)	(47)	(51)
Low-Ratio and Well-Known Firms				
Year -1 to Year +1				
Listing Firms	-0.96	-0.78	NA	-3.35
Matched Firms	-0.87*	-0.52	NA	-4.46
Match-Adjusted Change	0.82	0.82	NA	1.12
	(13)	(11)	(0)	(2)
Year -1 to Year +2				
Listing Firms	-2.37*	-1.84	NA	-5.75
Matched Firms	-1.28**	-0.75	NA	-5.58
Match-Adjusted Change	-2.00	-2.00	NA	-0.17
	(13)	(11)	(0)	(2)
Year -1 to Year +3				
Listing Firms	-1.90	0.46	NA	-9.47
Matched Firms	-0.98*	-0.83	NA	-6.02
Match-Adjusted Change	1.64	1.64	NA	-3.46
	(11)	(9)	(0)	(2)
High-Ratio and Less-Well-Known Firms				
Year -1 to Year +1				
Listing Firms	-1.83***	-1.98**	-2.94**	0.03
Matched Firms	-1.62***	-3.46***	-1.35***	-1.39***
Match-Adjusted Change	-0.56	-1.01	-1.70	1.64
	(126)	(44)	(61)	(21)

Table 5. (continued)

Year -1 to Year +2				
Listing Firms	-2.69***	-3.59***	-5.39***	-0.05
Matched Firms	-2.22***	-4.05***	-0.94***	-0.70**
Match-Adjusted Change	-0.44	-0.72	-3.11*	2.13*
	(122)	(42)	(58)	(22)
Year -1 to Year +3				
Listing Firms	-4.72***	-4.40***	-7.10***	-1.79*
Matched Firms	-2.69***	-5.19***	-1.55***	-1.68***
Match-Adjusted Change	-0.85*	-0.85	-4.40**	-0.05
	(116)	(41)	(55)	(20)
High-Ratio and Well-Known Firms				
Year -1 to Year +1				
Listing Firms	-0.72	-0.88	-2.72	-0.11
Matched Firms	-1.93***	-2.43***	-0.50	-1.66
Match-Adjusted Change	1.53	1.84	-2.80	0.90
	(57)	(41)	(3)	(13)
Year -1 to Year +2				
Listing Firms	-1.41**	-1.64**	7.62	-0.31
Matched Firms	-3.22***	-3.22***	-0.25	-3.66
Match-Adjusted Change	2.57**	2.29	-7.43	0.73
	(53)	(37)	(3)	(13)
Year -1 to Year +3				
Listing Firms	-2.69***	-3.63**	3.57	-1.31**
Matched Firms	-2.90***	-3.04***	-0.40	-1.32
Match-Adjusted Change	0.85	1.00	-3.96	-0.30
	(50)	(35)	(3)	(12)

Note: This table shows median match-adjusted changes of post-listing operating performance for firms that switched from the Nasdaq to the NYSE, Nasdaq to the AMEX, and the AMEX to the NYSE during the period 1978 to 1996. The listing sample consists of 359 firms out of 1703 firms that switched their stock listing from Nasdaq and AMEX to the NYSE, and the Nasdaq to the AMEX during this period. The actual number of firms used in this analysis may vary due to missing data. Operating performance is measured as operating return on assets expressed as a percentage. The matched sample is formed by matching each firm in the listing sample to a portfolio of non-switching firms based on size, operating performance and industry classification in year -1. A listing firm is classified as a Low-Ratio firm if its market capitalization ratio is lesser than the median market capitalization ratio of the sample firms listing on an exchange, and as a High-Ratio firm otherwise. A listing firm is classified as a Less-Well-Known firm if the institutional holdings of its equity in year –1 is less than the average institutional holdings of equity of all US stocks for that year as reported by the *Securities Industries Association Factbook,,* and as a Well-Known firm otherwise. The market capitalization ratio is computed by dividing the equity market value of a firm by the required equity value for listing on the new exchange for the listing year as reported in the NYSE and AMEX *Factbooks*. The significance tests are based on the Wilcoxon signed rank test. The number of firms in each group are shown in parenthesis.

*** Significant at 1 percent
** Significant at 5 percent
* Significant at 10 percent

Table 6 reports matched-adjusted changes in operating return on assets for less well-known firms that switch from Nasdaq to NYSE and for less well-known firms that switch from Nasdaq to AMEX. These results are relevant to prediction 3, according to which, less well-known firms that move from Nasdaq to NYSE will show greater improvement in operating performance than Nasdaq firms that move to the AMEX, a market with less demanding initial standards for listing.

Although negative, none of the match-adjusted changes is found to be statistically significant at any conventional level for the group of less well-known Nasdaq firms that move to NYSE. On the contrary, the less well-known Nasdaq firms that move to AMEX realize negative match-adjusted changes in operating return on assets, which are statistically significant at the 5 percent level for the comparison intervals year -1 to year +2 and year -1 to year +3. However, the median match-adjusted changes are not different between the two groups from a statistical significance standpoint. To account for the fact that Nasdaq firms switching to AMEX are smaller in size than Nasdaq firms switching to NYSE, we select only those Nasdaq firms that have big enough market capitalization to qualify for a NYSE listing.[8] When we compare this subset of Nasdaq to AMEX listers to the Nasdaq to NYSE group, the results (reported in Table 6) show that these bigger Nasdaq firms switching to AMEX also display a negative post-listing operating performance. Further, their median match-adjusted change in the interval, year -1 to year +3, is worse (with statistical significance at the 5 percent level) than the one recorded for the Nasdaq firms that move to NYSE.

The above findings provide weak preliminary support for prediction 3. There appears to be an association between the difference in initial listing standards between NYSE and AMEX and the relatively better post-listing performance of the Nasdaq firms that choose to list on the NYSE. This constitutes preliminary evidence on the importance of initial listing standards as a means to reveal value fundamentals and establish trading venue reputation in line with Chemmanur and Fulghieri (1999 and 2003).

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[8] We thank an anonymous referee for suggesting this possible bias.

Table 6. Post-Listing Operating Performance of Firms Switching from Nasdaq to NYSE and Nasdaq to AMEX

	Median Change From Year –1 to +1	Median Change From Year –1 to +2	Median Change From Year –1 to +3
Less-Well-Known Firms Switching from Nasdaq to NYSE (N=102)			
Listing Firms	-2.43***	-3.14***	-4.50***
Matched Firms	-1.65***	-2.34***	-3.64***
Match-Adjusted Change	-0.14	-0.97	-0.87
Number of Observations	102	97	94
Less-Well-Known Firms Switching from Nasdaq to AMEX (N=109)			
Listing Firms	-2.11**	-4.69***	-5.32***
Matched Firms	-1.36***	-1.89***	-1.95***
Match-Adjusted Change	-0.51	-1.67**	-1.80**
Number of Observations	109	105	102
Less-Well-Known Firms Switching from Nasdaq to AMEX that Might Qualify to Switch to NYSE (N=53)			
Listing Firms	-4.57***	-5.61**	-7.25***
Matched Firms	-1.40***	-0.84**	-1.50**
Match-Adjusted Change	-2.98	-3.69**	-4.91**
Number of Observations	53	51	49
Z-Score for Difference in Median Change between Less-Well-Known Firms Switching from Nasdaq to NYSE and from Nasdaq to AMEX	0.38	0.91	1.21
Z-Score for Difference in Median Change between Less-Well-Known Firms Switching from Nasdaq to NYSE and from Nasdaq to AMEX that Might Qualify to Switch to NYSE	-0.87	-1.15	-1.84**

Note: This table shows median changes of post-listing operating performance for firms that switched from the Nasdaq to NYSE and Nasdaq to AMEX during the period 1978 to 1996. The listing sample consists of 267 firms out of 1354 firms that switched their stock listing from Nasdaq to NYSE and Nasdaq to AMEX during this period. The actual number of firms used in this analysis may vary due to missing data. Operating performance is measured as operating return on assets expressed as a percentage. The matched sample is formed by matching each firm in the listing sample to a portfolio of non-switching firms based on size, operating performance and industry classification in year -1. A listing firm is classified as a Less-Well-Known firm if the institutional holdings of its equity in year –1 is less than the average institutional holdings of equity of all US stocks for that year as reported by the *Securities Industries Association Factbook,,* and as a Well-Known firm otherwise. The listing firms are classified into those that might qualify to be listed on the NYSE but chose not to and those that did not qualify to be listed on the NYSE. The significance tests are based on the Wilcoxon signed rank test. The Z statistics reported are for the differences in median levels of the listing firms and the matched firms, and are based on the Wilcoxon two-sample signed rank test.

*** Significant at 1 percent
** Significant at 5 percent
* Significant at 10 percent

Additional Tests

In this sub-section, we report additional findings that allow us to check the robustness of the above findings and their implications. We use regression analysis to control for the effects of several factors that could have an impact on post-listing operating performance. It is possible that the classification of listing firms into less well-known and well-known firms may miss the impact of firm size measured by equity market value. In general, firms with large market capitalization are followed by more analysts and are more well-known. Therefore, the revaluation as well as the timing motive should be less important for the decision to switch listing. Firms which have experienced a rapid improvement in profitability prior to listing may have greater difficulty maintaining it past the listing change. Although our matching method has accounted for the bias known as regression to the mean, we further control for this by introducing the pre-listing trend in operating return on assets. Post-listing operating performance can be also affected by the growth realized by firms in the pre-listing period. High pre-listing growth may not be easy to sustain in the post-listing period. Therefore, post-listing operating returns may be lower for high-growth firms irrespective of their status as less well-known or well-known firms.[9] In addition, pre-listing firm growth may have implications for the motive behind the listing decision. Firms that time the listing change are more likely to do so before they experience a reversal in growth. On the other hand, firms that use listing to attract attention and induce a positive revaluation should expect their growth to continue past the listing time. Firms are more likely to time their listing change if they have more volatile performance. Such, especially small, firms are less certain that they can satisfy the initial listing standards of a stricter market on a sustainable basis. Other, less well-known firms, may choose to change their listing because they have other positive private information and wish to counter their current image stemming from volatile performance. Finally, we test whether post-listing performance varies by industry. Firms operating in industries characterized by greater degree of volatility may have a greater motive to time their listing change. Alternatively, the uncertainty caused by volatility may result in information asymmetry and thus justify a revaluation motive.

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[9] Fama and French (2004) report that new lists (though not those resulting from listing changes) exhibit a negative relationship between assets growth and profitability the first listing year.

The effects of the factors discussed above are most relevant for changes in operating performance over the interval year -1 to year +1. Thus, the dependent variable is the match-adjusted change in operating return on assets from year -1 to year +1. (We also run regressions on match-adjusted changes over the intervals year -1 to year +2 and year -1 to year +3, but the findings are qualitatively the same.) The initial independent variables are: the status of the firm as less-well known (LWK); the logarithm of the market value of equity at the end of year -1 (LNSIZE); the volatility measured as the difference of the standard deviation of each firm's monthly stock returns in the 12 months prior to the listing change and the market return over the same period (VOLATILITY); the excess sales growth rate from year -2 to -1of each listing firm relative to the median growth rate of the matching firms (SGRO); a dummy variable (ROATR) with a value of 1 if the firm has realized a decline in return of assets from year -2 to year -1. We also introduce an industry dummy (IND) that takes the value of 1 if the firm is classified by its two-digit SIC code in these industries: oil and gas extraction; industrial and commercial machinery and computer equipment; electronic and electrical equipment and components; measuring, analyzing and controlling instruments, photographic, medical and optical goods; and communications. In subsequent regressions we introduce additional variables as follows. The interaction terms LR*VOL, LR*SGRO and LR*IND are used to test for the timing motive of low ratio firms with higher volatility or sales growth or because they come from industries with greater uncertainty. LR is a dummy variable that takes the value of 1 if the market capitalization ratio (the listing vulnerability proxy) is below the median for firms that list on the same market (e.g., Nasdaq and AMEX firms listing on NYSE). The interaction terms LWK*VOL, LWK*SGRO and LWK*IND are used to test for the revaluation motive of less well-known firms with higher volatility and sales growth or because they come from sectors with greater informational asymmetry. Since we found that high ratio and less well-known Nasdaq firms that list on the AMEX experience a statistically significant decline in match-adjusted operating return, we test whether this finding persists after we control for the factors mentioned above. Thus, we introduce the dummy variable HR*LWK*NQAM.

Firms which list on a market with stricter standards for continued listing might be concerned whether their post-listing performance will be sufficient to satisfy these ongoing

listing requirements.[10] Accordingly, the continued listing standards could impose an implicit self-selection constraint on the Nasdaq or AMEX firms that plan to move to the NYSE (the market with the most stringent requirements). Moreover, this constraint is more relevant for the subset of firms we classified as LR by the criterion of the market capitalization ratio. We expect these firms to do comparatively better after listing than Nasdaq firms moving to the AMEX. We test for this effect by using the dummy variable LR*NQAMNY. To test the impact of initial listing standards, we need to differentiate between Nasdaq firms listing on the NYSE and Nasdaq firms listing on the AMEX. Therefore, we introduce the dummy variable NQAM with a value of 1 for observations associated with Nasdaq firms that move to the AMEX. The regression coefficients are corrected for heteroskedasticity utilizing White's method with the HC3 adjustment suggested in Long and Ervin (2000).

The regression analysis results are reported in Table 7. In Models 1 through 5 we utilize the whole sample of switching firms to test for the timing and revaluation motives. In Model 1, the variable LWK has a negative coefficient, which is not statistically significant. Size (in equity market value), trend in pre-list operating performance, volatility, and industry classification also have insignificant coefficients. The significant and negative coefficient of the sales growth rate confirms the proposition that firms which have realized rapid revenue growth are more likely to experience an erosion in operating returns in subsequent years. Overall, these findings are consistent with results of the comparison tests which presented scant evidence in favor of either motive. When other factors are accounted there is no ground to support that switching firms display a post-listing operating performance which is consistent with the timing or revaluation motive. The lack of significant coefficients in the remaining models 2 through 5 provide further support for this conclusion. Accounting for other factors also eliminates the statistical significance of the negative match-adjusted changes reported earlier for the large and less well-known Nasdaq firms that moved to the AMEX. Further, differences in the strictness of the continued listing standards is not associated with any particular pattern of post-list operating

[10] See also Corwin and Harris (2001) and Grammatikos and Papaioannou (1986b). Fama and French (2004) report lower survival rates and higher delisting rates for stocks with low market capitalization in the period 1973-2001.

performance. This finding is in line with the overall lack of evidence reported in Corwin and Harris (2001) concerning the impact of continued listing standards on the listing decision of IPO firms.

To test the prediction that initial listing standards can influence the degree of revaluation, we use the sample of less well-known firms that switched listing from Nasdaq to either the NYSE or the AMEX. In Model 6 none of the independent variables has a significant coefficient. The negative and significant intercept term captures the overall erosion in operating returns experienced by less well-known firms. We need to point out, however, that the insignificant coefficient of the less well-known variable LWK in Model 1 suggests that, when all listing firms are considered, less well-known firms can not be differentiated in terms of post-listing performance from the well-known firms. Since many of the Nasdaq firms that list on the AMEX are relatively small, we need to count for a potential size bias. Therefore, we combine the Nasdaq firms that list on the NYSE with those Nasdaq firms that satisfied the NYSE market capitalization requirement but opted to list on the AMEX. Model 7 shows that this sample specification produces similar results and, in addition, removes the statistical significance of the intercept term. The above findings do not support the proposition that initial listing requirements can affect the potential for revaluation by helping to generate more information about the listing firm.

Table 7. **Results of Regressions of Post-Listing Match-Adjusted Change in Operating Return on Assets on Firm Variables for Samples of Switching Firms from 1978 to 1996**

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Intercept	-0.0463 (-0.72)	-0.0187 (-0.23)	0.0071 (0.07)	-0.0243 (-0.30)	-0.0188 (-0.23)	-0.2416* (-1.73)	-0.2536 (-1.23)
LWK	-0.0081 (-0.68)						
LNSIZE	0.0027 (0.53)	0.0012 (0.19)	-0.0001 (-0.01)	0.0017 (0.26)	0.0012 (0.19)	0.0165 (1.54)	0.0169 (0.99)
ROATR	-0.0018 (-0.10)	-0.0065 (-0.28)	-0.0031 (-0.17)	-0.0063 (-0.28)	-0.0066 (-0.28)	-0.0057 (-0.19)	-0.0083 (-0.21)
VOLATILITY	0.3073 (1.00)					0.4083 (0.90)	0.5281 (0.77)
SGRO	-0.0233** (-2.16)					-0.0208 (-1.53)	-0.0250 (-1.38)
IND	0.0055 (0.32)					-0.0031 (-0.11)	-0.0131 (-0.34)
NQAM						0.0534 (1.31)	0.0552 (1.19)
LR*VOL		-0.2522 (-0.67)		-0.2334 (-0.62)	-0.2595 (-0.60)		
LWK*VOL		0.3282 (0.75)		0.3165 (0.75)	0.3311 (0.72)		
LR*SGRO		-0.0142 (-0.50)	-0.0118 (-0.40)	-0.0135 (-0.48)	-0.0143 (-0.49)		
LWK*SGRO		-0.0197 (-1.10)	-0.0185 (-0.95)	-0.0202 (-1.14)	-0.0196 (-1.08)		
LR*IND			0.0084 (0.35)				
LWK*IND			-0.0032 (-0.14)				

Table 7. (continued)

HRWKNQAM				0.0040 (0.13)			
LRNQAMNY					0.0014 (0.08)		
N	326	326	326	326	326	191	145
F	0.80	0.82	0.26	0.70	0.70	0.72	0.67
Adj R^2	0.0149	0.0152	0.0049	0.0152	0.0152	0.0227	0.0279

Note: Regression estimates are for firms that switched from the Nasdaq to the NYSE, the Nasdaq to the AMEX, and the AMEX to the NYSE during the period 1978 to 1996. The listing sample consists of 359 firms out of 1703 firms that switched their stock listing during this period. The matched sample is formed by matching each firm in the listing sample to a portfolio of non-switching firms based on size, operating performance and industry classification in year -1. Models 1 through 5 include the whole sample of firms that switched their listing from Nasdaq to NYSE or AMEX and from AMEX to NYSE. Model 6 includes the sample of firms that switched listing from Nasdaq to the AMEX or the NYSE and were classified as Less-Well-Known firms. Model 7 includes the sample of Less-Well-Known firms that switched their listing from Nasdaq to NYSE and the Less-Well-Known firms that switched from Nasdaq to AMEX although they might qualify to switch to NYSE. The dependent variable is match-adjusted changes in operating return on assets from year –1 to year +1. The independent variables are: LWK, a dummy variable that takes the value of 1 for firms classified as less-well known if the institutional holdings of its equity in year -1 is less than the average institutional holdings of all U.S. stocks for that year; LNSIZE, the natural logarithm of the equity market value in year -1; VOL, the difference in the standard deviation of the monthly returns of the listing firm and the market for the twelve months prior to the listing change; SGRO, the difference between the growth in sales from year -2 to year -1 of the listing firm and the median growth in sales for the matching sample of firms for the same period; ROATR, a dummy variable that takes the value of 1 for firms that have a decline in the return on assets from year -2 to year -1; IND, a dummy variable that takes a value of 1 for firms that are in volatile or speculative industries; NQAM, a dummy variable that takes a value of 1 for firms that switch from Nasdaq to AMEX; LR*VOL is the interaction between low-ratio firms and volatility; LWK*VOL is the interaction between LWK and volatility; LR*SGRO is the interaction between low-ratio firms and SGRO; LWK*VOL is the interaction between LWK and SGRO; LR*IND is the interaction between low-ratio firms and IND; LWK*IND is the interaction between LWK and IND; HRLWKNQAM,, a dummy variable that takes a value of 1 for high-ratio and less-well-known firms switching from Nasdaq to AMEX; LRNQAMNY, a dummy variable that takes a value of 1 for low-ratio firms that switch from Nasdaq or AMEX to NYSE. A listing firm is classified as a Low-Ratio firm if its market capitalization ratio is lesser than the median market capitalization ratio of the sample firms listing on an exchange, and as a High-Ratio firm otherwise. A listing firm is classified as a Less-Well-Known firm if the institutional holdings of its equity in year –1 is less than the average institutional holdings of equity of all US stocks for that year as reported by the *Securities Industries Association Factbook,,* and as a Well-Known firm otherwise. The market capitalization ratio is computed by dividing the equity market value of a firm by the required equity value for listing on the new exchange for the listing year as reported in the NYSE and AMEX *Factbooks*. The regression results shown are after adjusting for heteroscedasticity using the Long-Ervin HC3 adjustment. T-statistics are in parenthesis.

*** Significant at 1 percent
** Significant at 5 percent
* Significant at 10 percent

IV. Summary and Implications

We test the implications of the timing and revaluation motives by examining the post-listing operating performance of firms that change their stock listing to a new marketplace. We suggest that the timing motive implies the presence of unfavorable private information whereas the revaluation motive implies the presence of favorable information. In general, post-listing operating performance is expected to deteriorate under the timing motive and to improve under the revaluation motive. These motives are relevant, respectively, to firms which are concerned

with either meeting the minimum listing requirements or seeking a positive revaluation.

We find no clear evidence in support of either motive. Low capitalization ratio and well-known firms (i.e., the firms with a strong timing motive) show no decline in post-listing operating performance. High capitalization ratio and less well-known firms (i.e., the firms with a strong revaluation motive) display mixed performance. High ratio and less well-known firms moving from Nasdaq to AMEX realize significant declines in operating performance whereas those moving from AMEX to NYSE experience significant improvement. It is puzzling that these high ratio less well-known Nasdaq firms switching to AMEX demonstrate post-listing performance which is consistent with the timing motive but exposes them to the risk of negative revaluation. We also report some tentative evidence that the stricter initial listing standards of the NYSE are associated with relatively better operating performance for firms switching to the NYSE than to AMEX. However, results from regression analysis tests reveal that the patterns of operating return changes consistent with the timing and revaluation motives disappear once we control for various factors.

The findings of this study are driven mainly by two methodological factors. First, we use different criteria to gauge the relevance of the timing and revaluation motive across listing firms. Second we derive predictions about post-listing operating performance consistent with a firm's classification as timing- or revaluation-driven. Thus, our findings help qualify the attribution of negative post-listing performance - especially of the Nasdaq firms switching to AMEX - to the timing motive as reported in previous studies. First, there is no evidence that low capitalization ratio and less well-known Nasdaq firms listing on the AMEX are associated with erosion in operating returns on a match-adjusted basis. Secondly, the significant decline in operating return of high ratio and less well-known firms switching from Nasdaq to AMEX can not be reasonably attributed to the timing motive. These firms should normally have little reason to resort to timing when they decide to change the trading venue of their stock.

The findings have also implications for the studies of domestic and cross-border listings (Kadlec and McConnell (1994), Foerster and Karolyi (1999) and Baker, Nofsinger and Weaver (2002)). Under conditions of asymmetric information, visibility gains have value for the less well-known firms. At best, this study provides mixed evidence that such firms time their listing to coincide with the release of positive private performance.

We conclude that although firms tend to change their listing following a period of unusually strong performance, there is no evidence of opportunistic timing on the part of managers. Similarly, the patterns of post-listing operating performance found in this study do not appear to be, in general, consistent with the expressed managerial motive for greater visibility and investor attention that can lead to favorable revaluation. The negative stock return performance following some listing changes could then be explained by investor overreaction to the unusually strong performance that precedes listing.

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