

AMEX-to-NYSE Transfers, Market Microstructure, and Shareholder Wealth

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■ For more than 50 years, researchers have examined the market behavior of common stocks around their initial listing on a national exchange — the American (AMEX) or New York (NYSE) Stock Exchange.¹ A change in the market in which a stock is traded should not influence stockholder wealth apart from microstructure effects. Past research has found anomalous stock price behavior around the time stocks switch from one trading market to another. That is, abnormal returns, on average, rise before listing and fall afterward, but the empirical evidence differs on the impact of initial listing on shareholder wealth. Researchers often link the favorable pre-listing returns to value implications associated with expectations of in-

creased liquidity and positive signaling effects. There is no complete explanation for the puzzling decline in value immediately following the listing.²

Past studies have focused on the market behavior of stocks transferring from dealer markets (OTC or NASDAQ) to auction markets (AMEX and NYSE). Such interest often arises from differences in the market microstructure environment in which stocks trade. Firms also move from the AMEX to the NYSE, but the market behavior around such switches remains largely unexplored. The

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¹For example, Ule [34], Furst [17], Van Horne [35], Ying, Lewellen, Schlarbaum, and Lease [36], Fabozzi [15], Sanger and McConnell [32], McConnell and Sanger [26], [27], and Bhandari, Grammatikos, Makhija, and Papaioannou [9] examine market behavior of common stocks listing on a national exchange.

²See Baker and Meeks [6] for a comprehensive synthesis of research on exchange listing.

major exception is a study by McConnell and Sanger [27] involving post-listing returns of 940 Curb/AMEX stocks that listed on the NYSE from 1926 to 1982. Their evidence shows significantly negative average market-adjusted returns during the month immediately after listing.

The motivation of the current study is the lack of research on AMEX-to-NYSE transfers, which may stem from the presumption that these forms of listing are substitutable. Although auction markets are more similar than dealer versus auction markets, differences between the AMEX and NYSE may affect security returns and have potential valuation implications for shareholders. This proposition requires further empirical testing.

This paper examines the impact of AMEX-to-NYSE transfers on shareholder wealth. The study poses two major research questions. First, what is the general pattern of market behavior around AMEX-to-NYSE transfers? This pattern is uncertain because economic explanations do not provide a compelling rationale for a specific pattern of returns based on differences between the two auction markets. The main results for the full sample are similar to those for firms switching from NASDAQ to the NYSE or AMEX. Yet, the current study reveals subtle differences in market behavior between changes from dealer-to-auction markets versus auction-to-auction markets.

Second, does the pattern of market behavior around AMEX-to-NYSE transfers differ for stocks with low versus high transaction volume while on the AMEX? The study hypothesizes that the general pattern of returns over time is significantly greater for auction market switches of low versus high transaction volume stocks. The evidence supports this hypothesis by showing a significantly more positive market response to low versus high volume AMEX stocks that list on the NYSE.

The rationale for the differential market reaction hypothesis is that low transaction volume AMEX stocks have more to gain by switching to the NYSE than their high volume counterparts. In this study, transaction volume is a proxy for both size and liquidity.³ That is, the sample of low volume AMEX stocks that moved to the NYSE is smaller and less liquid than their high volume counterparts. Stocks with low transaction volume, while on the AMEX, may experience greater visibility and market interest after switching to the NYSE than stocks with high transaction volume. This temporary increase in attention, especially by institutional holders, may result in temporary increases in information flows, which, in turn, may tem-

porarily reduce uncertainties about stock performance and riskiness. Also, liquidity may increase in the days after listing due to investor interest in the stock. Because of these information and liquidity effects, newly listed NYSE stocks, specifically those with low transaction volume while on the AMEX, may initially experience lowered risk.⁴ Another possible explanation is an ex-post selection bias in which firms generate good news before listing and somewhat bad news after listing. The hypothesized differential market reaction between low and high transaction volume AMEX stocks also may stem from differences between the AMEX and NYSE discussed in Section I, but this proposition is not tested directly.

Amihud and Mendelson [3] note that the tradeoff between the cost of listing and any increase in value may produce different results among firms. For example, firms that already enjoy high liquidity on the AMEX may realize little, if any, reduction in required return due to listing, but they must bear the associated costs. Empirical research supports the notion that companies with different pre-listing attributes show a differential market response to listing. For example, Grammatikos and Papaioannou [18] and Edelman and Baker [14] report that companies with low pre-listing liquidity experience the most favorable market response to initial listing. If the market perceives that the net benefits of NYSE listing are greater for low versus high volume AMEX stocks, then finding a differential market response between these groups would be logical from both economic and behavioral perspectives.

This study contributes to the literature in several ways. First, it extends the work of McConnell and Sanger [27], who use monthly returns, by using more current and daily data and by examining both pre- and post-listing abnormal returns. Second, the study goes beyond simply documenting the abnormal returns around AMEX-to-NYSE transfers by offering a partial explanation for their existence. The evidence shows that the post-listing anomaly of significantly negative abnormal returns applies more to high volume AMEX stocks that move to the NYSE than their low volume counterparts. The findings add to our knowledge of market change anomalies and provide some clues that could help resolve these anomalies.

³Amihud and Mendelson [2] report that firm size may serve as a proxy for liquidity.

⁴Bhandri, Grammatikos, Makhija, and Papaioannou [9] use this logic to explain the effects of initial listing on stock risk in the early post-listing period. Their evidence shows that the riskiness of newly listed stocks undergoes a seasoning process. Instead of lower risk, riskiness is greater immediately after listing than in later periods. They did not partition their sample of OTC stocks moving to either the AMEX or NYSE during 1965 to 1984 by trading volume or other pre-listing attributes.

I. Differences Between the AMEX and the NYSE

If an AMEX firm meets the NYSE's listing requirements, corporate decision-makers face a tradeoff in choosing between remaining on the AMEX or listing on the NYSE. Switching auction markets is not expected to change the production activities of the firm and its underlying cash flow. Therefore, firms must have other reasons for moving from the AMEX to the NYSE. Some differences between the two national exchanges may motivate a firm to switch. Differences that potentially favor AMEX-to-NYSE transfers are liquidity effects, signaling effects, market size and composition of trading activity, and visibility and prestige.

First, the NYSE may provide greater liquidity than the AMEX, at least for some stocks. Liquidity, defined as immediacy in execution, is important to some investors.⁵ As Amihud and Mendelson [2] find, greater liquidity means lower transaction costs and lower expected returns or equivalently, higher prices. Therefore, liquidity-increasing financial policies, such as listing, may increase the value of the firm. Compared with the AMEX, the NYSE may provide greater liquidity partly because of the greater equity capitalization of its specialists or other differences in exchange rules about specialists' market-making responsibilities.⁶ Yet, as Hasbrouck [23, p. 14] notes, "microstructure analysis has not yet arrived at the point where we can assert *a priori* that a particular market structure will afford the most liquidity for a given security."

Research evidence about which national exchange provides greater liquidity is mixed. For example, Dubofsky and Groth [13] report that stocks switching from the AMEX to the NYSE experience an initial increase in liquidity, followed by a gradual decline almost to previous levels. In a study prepared for the NYSE, Hui and Heubel [24] find that liquidity is greater on the NYSE than the AMEX. In two studies commissioned by the AMEX, Hasbrouck and Schwartz [22] and Marsh and Rock [25]

report no significant liquidity difference between comparably sized stocks on the AMEX and the NYSE. The conflicting findings may result from using different liquidity measures and periods in each study.

Second, signaling effects may influence managers to switch exchanges. The criteria for original listing are more stringent on the NYSE than on the AMEX.⁷ Meeting the listing criteria may signal positive information about a firm. Firms are unlikely to use listing as a mechanism for generating false signals because of the costs of listing and the risk of being delisted. These costs include the initial cost of changes needed to meet the NYSE requirements and periodic costs, which reflect out-of-pocket listing fees and reporting costs plus forgone gains due to constraints implied by the NYSE's rules.

Third, the market size and composition of trading activity on the NYSE may influence some firms to switch exchanges. The NYSE is a much larger market than the AMEX. For example, based on dollar volume of equity trading in 1989, the NYSE had \$1,542.8 billion and the AMEX had only \$44.4 billion.⁸ The NYSE has proportionally more institutional and member trading and less retail activity than the AMEX. Some managers may prefer these market characteristics for trading their firm's stock.

Behavioral reasons for switching auction markets include increased visibility and prestige. Managers may perceive that listing increases their firm's visibility through announcements surrounding the listing process. Others may see listing on the "Big Board" as a prestigious milestone in corporate development.⁹

Some differences between these auction markets may favor the AMEX. These differences are the specialist allocation system, the higher relative standing compared with other listed issues, more flexibility in corporate governance, and lower listing fees. The first difference favoring the AMEX over the NYSE is the specialist allocation system. A company has more control over who its specialist will be on the AMEX than on the NYSE. Such flexibility of AMEX-listed firms in selecting and changing specialists may motivate the AMEX specialist to do a good job.

The second difference favoring the AMEX involves the relative standing of AMEX compared with other listed

⁵Hasbrouck [23] notes that liquidity is particularly important to liquidity demanders, who are traders motivated by idiosyncratic and individual needs that are unrelated to the basic value of the security. An indexed mutual fund is an example of a liquidity demander. Amihud and Mendelson [4] also note that a short horizon calls for investing in liquid assets, but a long investment horizon enables the investor to earn higher net returns by investing in illiquid assets.

⁶Schwartz [33] notes that the minimum capital requirements per assigned specialist unit on the NYSE are the greater of \$1 million or 25% of position requirement of 450 round lots in each stock in which the specialist is registered to make a market.

⁷For details on initial and continued listing requirements on the AMEX and NYSE, see American Stock Exchange [1] and the New York Stock Exchange [29].

⁸See National Association of Securities Dealers [28].

⁹In a survey of managerial motives for exchange listing, Baker and Johnson [7] report prestige as the second most important listing motive among NYSE companies but fifth among AMEX companies.

issues. The typical AMEX stock is much smaller than its NYSE counterpart in sales, net income, total assets, shareholders' equity, market value, and average daily volume. The relative standing of a stock on the AMEX is probably higher than one of comparable size on the NYSE. Such a stock may be more important to the AMEX specialist than the NYSE specialist because specialists earn greater returns through actively traded stocks. Also, stocks listed on the AMEX may be more likely to make the most active list of newspapers and gain visibility than similar-sized NYSE stocks.

The third factor favoring remaining on the AMEX involves matters of corporate governance. The AMEX is more flexible than the NYSE in at least six areas: (i) shareholder approval of acquisitions; (ii) rules governing the sale of stock for cash; (iii) voting requirements on matters requiring shareholder approval; (iv) exchange disclosure requirements; (v) dual classes of stock with unequal voting rights; and (vi) voluntary delisting of companies eligible for continued listing. For example, the AMEX requires no shareholder vote or restrictions on delisting. By contrast, the NYSE requires a meeting of shareholders who represent many outstanding shares, approval of two-thirds of the shares outstanding, and fewer than ten percent of individual shareholders objecting.

The final difference involves costs. AMEX listing fees are sharply lower than for the NYSE. Therefore, remaining on the AMEX is favorable from a cost perspective.

The relative importance of these differences is unclear. Supposedly, decision-makers of AMEX companies moving to the NYSE have examined the cost-benefit tradeoffs and acted in the best interests of their shareholders. Yet, the effect of switching auction markets on shareholder wealth remains unquantified.

Baker [5] conducted a mail survey of corporate executives to determine their firms' motives for switching from the AMEX to the NYSE over the period 1982 to 1990. The three most important motives for switching auction markets were increased prestige, visibility, and liquidity. Of the 52 respondents, 100% agreed with the statement that compared with remaining on the AMEX, listing on the NYSE increases a firm's prestige. More than 96% agreed that switching from the AMEX to the NYSE not only increases a firm's visibility but also increases investor interest in a firm's stock. More than 86% believed that moving to the NYSE increases the liquidity of a firm's stock. Evidence from this field study suggests that the motives for AMEX-to-NYSE switches are both economic and behavioral.

II. Sample and Methodology

The New York Stock Exchange provided the initial sample consisting of 120 AMEX-to-NYSE transfers between 1982 and 1989. Inclusion in the final sample required meeting three criteria. First, each firm had to have three, non-overlapping event dates reported in the NYSE's *Weekly Bulletin*, which is mailed after exchange hours on Fridays to about 3,000 subscribers, including all NYSE members. The first and second event dates were the first trading day, usually a Monday, after the Friday mailing of the *Weekly Bulletin* containing the announcement of the formal application for listing (application announcement or $t_{apply} = 0$) and the approval of the application (approval announcement or $t_{approve} = 0$), respectively. Therefore, market participants experience a lag of several days between the publication of the *Weekly Bulletin* and news of these announcements. The third event date was the actual NYSE listing date ($t_{list} = 0$).¹⁰

Second, each firm had to have at least 50 days of price and volume data during the estimation period $t_{list} = -210$ to -51 .¹¹ The same estimation period was used for the application, the approval, and the listing date. Finally, the AMEX-to-NYSE transfer had to occur in any month except during the stock market crash of October 1987. Imposing these three criteria reduced noise and improved the statistical validity of the results, but reduced the sample from 120 to 80, then to 74, and finally to 72 AMEX-to-NYSE transfers, respectively. None of these new listings resulted from mergers.

Standard event methodology is used to examine the market behavior around the three event dates. The sources of the stock price and volume data are the Center for Research in Security Prices (CRSP) and Data Resources Inc., respectively. The market model is used to estimate both pre- and post-listing abnormal returns (ARs) around each event date. If transferring from the AMEX to the NYSE has value implications, the market should respond

¹⁰The NYSE urges any firm considering listing its stock to file an informal application for a preliminary eligibility review. If the firm meets the admission criteria, the NYSE recommends submitting a formal application. Therefore, firms that file a formal application are nearly certain of having their stocks listed. The NYSE reports those companies that formally apply for listing in its *Weekly Bulletin*, mailed on Friday after the NYSE closes. Investors first become aware of a firm's listing intentions usually by Monday immediately after the mailing. Shortly after that, the NYSE announces in the *Weekly Bulletin* whether a company has been approved and gives a listing date. Thus, investors know the listing date before trading begins on the NYSE.

¹¹Inclusion in the sample required at least 50 side-by-side price transactions, which resulted in one-day trading intervals. The stocks did not have to trade for 50 consecutive trading days.

only around the application announcement date because the NYSE rarely rejects stocks that formally apply for listing. Neither the approval announcement nor the listing date should convey any new information to the market.¹² Therefore, these follow-up announcements should have insignificant price effects.

Daily abnormal returns are calculated around each event date.¹³ Cumulative abnormal returns (CARs) are calculated for ± 50 trading days and shorter intervals around the three event dates. Two-tailed *t*-tests are used to determine whether the ARs and CARs differ significantly from zero. A sign test is used to determine whether the percentage of positive returns differs significantly from 50%.

An empirical issue in computing returns on small firms is the possible upward bias due to the bid-ask spread suggested by Blume and Stambaugh [10], and Roll [31]. Blume and Stambaugh [10] note that the small firm bias effect is most troublesome in stocks selling below \$2 per share. Beyond \$8 per share, the effect diminishes rapidly. No stocks in the sample of 72 AMEX-to-NYSE switches sold for below \$4 on the NYSE listing day and only 17 stocks sold for \$8 or less. The event study analysis is conducted by adjusting for potential small firm bias using factors cited by Blume and Stambaugh [10]. These factors are applied only for days when the stock price was under \$20.¹⁴

The full sample is split into subsamples to test whether pre-listing transaction volume affects the pattern of returns around NYSE listings.¹⁵ To split the sample, average daily

volume is computed for the period $t_{list} = -210$ to $t = -51$. Using this period avoids possible contamination effects on volume associated with most NYSE listing announcements.

Average daily volume can have trend effects over the eight-year study period and can be influenced by contemporaneous market-wide effects. To control for changing levels of market volume, average daily transaction volume for each stock is divided by its average daily transaction volume on the AMEX for the listing year. This adjustment results in a ratio, called the scaled transaction volume ratio, which improves classifying stocks into high volume and low volume groups by accounting for year-to-year variations in volume of AMEX stocks.¹⁶ The stocks are ranked by the scaled transaction volume ratio and then split into thirds. The bottom third represents low volume stock and the top third represents high volume stocks.¹⁷ Two-sample *t*-tests are used to determine whether significant differences exist in the ARs and CARs between the low and high volume groups. These CARs tests are one-tailed because the returns of the low volume group are expected to be significantly greater than the high volume group over time.

For AMEX stocks with low versus high volume before NYSE listing, both the average daily volume and scaled

¹²The mean number of days between the application announcement and listing date is 21.7 days ($\sigma = 10.2$ days), with a minimum of eight days and a maximum of 12 days. The mean number of days between the application announcement and the approval announcement is 12.6 days ($\sigma = 8.5$ days), with a minimum of three days and a maximum of 63 days. The mean number of days between the approval announcement and listing date is 9.1 days ($\sigma = 4.9$ days), with a minimum of one day and a maximum of 21 days. Although not shown, *t*-tests show no statistically significant differences at the five percent level between the low and high volume subsamples on the average number of days between the application announcement and listing, the application announcement and approval announcement, or the approval announcement to listing.

¹³Abnormal returns are calculated for 10 trading weeks and 10 trading days around each event date. The authors will provide these results upon request.

¹⁴The event study analysis also is conducted by excluding those firms whose listing day price is \$8 or less. The results with this adjustment are uniformly similar to those reported in this paper. These robust results show little evidence of small firms posing a problem.

¹⁵The sample is split based on other firm characteristics including the average price/earnings (P/E) ratio for two years before listing to test for P/E effects, a performance index developed by Grammatikos and Papaioannou [19] to test for signaling effects, and market capitalization

to test for size effects. The results based on the P/E and performance index are not reported because they are mixed and inconclusive. The results based on market capitalization also are not reported because they are similar to those using volume to split the sample. That is, small (large) capitalization stocks tend to have low (high) trading volume.

Also, the sample is split based on the Amivest liquidity ratio, used by Dubofsky and Groth [13], and Cooper, Groth, and Avera [12]. This liquidity ratio is a common liquidity measure that divides the dollar volume of trading by the average absolute percentage change in price. This ratio purportedly represents the dollar volume required to move a stock's price one percent. Several authors, including Bernstein [8], Grossman and Miller [21], and Hasbrouck [23], cite limitations of this ratio as a measure of market liquidity. Marsh and Rock [25] suggest that this measure is a proxy for volume. Our analysis shows that the results are similar either by splitting the sample by low and high volume or by low and high Amivest liquidity ratios. Therefore, the simpler volume measure is used. Market participants can more easily differentiate between stocks with low and high volume than those with low versus high Amivest liquidity ratios.

¹⁶Based on data provided by the AMEX, the average daily transaction volume of equities for the years 1982 to 1990 is as follows: 1982 = 5,287,452 shares, 1983 = 8,224,988 shares, 1984 = 6,107,275 shares, 1985 = 8,336,568 shares, 1986 = 11,773,170 shares, 1987 = 13,857,529 shares, 1988 = 9,940,812 shares, and 1989 = 12,401,222 shares.

¹⁷During the period $t_{list} = -200$ to -51 , the average daily volume for the bottom third and top third was 9,369 shares and 45,760 shares, respectively. Both a *t*-test and Mann-Whitney *U* test show that the average daily volume of the bottom third versus the top third differs significantly at greater than the 0.01 level.

transaction volume ratio are compared between $t_{list} = -210$ to -51 and $t_{list} = +1$ to $+50$. A sign test, using the binomial distribution for small samples, is used to decide whether the frequency with which the two signs occur (increases and decreases in volume after listing) is significantly different. A matched-pairs t -test is used to determine if the mean difference in the pre- and post-volume or volume ratio differs from zero for each volume group. A Wilcoxon matched-pairs signed-ranks test is used as an alternative measure to decide if the relative size and direction of the volume or volume ratio differ within the pairs. These related samples tests are useful because they examine differences in volume or volume ratios before and after listing for individual stocks.

Using the same three tests mentioned directly above, shifts in risk between pre- and post-listing also are examined by comparing the betas between $t_{list} = -210$ to -51 and $t_{list} = +1$ to $+50$. These tests are conducted for the full sample and the lower and upper thirds based on the scaled transaction volume ratio.

Finally, other contemporaneous announcements might affect the CAR patterns or the application announcement results. The *Wall Street Journal Index* is used to check if the high and low volume firms exhibit patterns of other major firm announcements, from three months before to three months after listing. When such cases are found, they are tallied, classified into groups, and then used to help explain the underlying CAR patterns.

III. Empirical Results and Discussion

A. Full Sample

The first research issue focuses on identifying the general pattern of market behavior of AMEX-to-NYSE transfers by examining the ARs and CARs around three event dates. Exhibit 1 summarizes the findings of the event analyses around the application announcement, approval announcement, and listing date. The ARs are significantly positive on $t_{apply} = 0$ (+0.533%) at the ten percent level. The result of the sign test and a review of the distribution of ARs suggests that the t -test is not influenced by a few outliers on this date. As expected, none of the ARs is statistically significant around the approval announcement and listing date, except $t_{list} = +4$. The sign test shows that the percentage of positive ARs differs significantly from 50% on several dates surrounding both the approval announcement and listing date, but these results do not correspond to significant ARs, except $t_{list} = +4$. Overall, the evidence suggests that the application announcement

is the critical event date and, on average, the market responds positively to this event.

Panel A of Exhibit 2 shows the CARs for ± 50 trading days around the listing date for the full sample.¹⁸ The CARs begin to increase before the listing date, which may partially reflect news of the application and approval announcements. The stock price run-up effect in Panel A of Exhibit 2 also can represent a survivorship bias. That is, the NYSE is unlikely to approve firms experiencing significant stock price declines just before listing. The CARs peak on $t_{list} = -2$ at 4.075%. As Panel B of Exhibit 2 shows, the CARs decline steadily during the post-listing period.¹⁹

Exhibit 3 presents the CARs and t -statistics for the pre-listing, post-listing, and full test periods for the AMEX-to-NYSE transfers. The pre-listing intervals $t_{list} = -20$ to -1 and $t_{list} = -10$ to -1 correspond roughly to the average number of days between the application announcement and listing (21.7 days) and the approval announcement and listing (9.1 days).

The CARs are not significantly different from zero during any pre-listing interval, but they are significantly negative for each post-listing interval. The portfolio of AMEX-to-NYSE transfers loses, on average, -3.315% of its value from $t_{list} = 0$ to $+10$, -3.823% from $t_{list} = 0$ to $+20$, and -7.510% from $t_{list} = 0$ to $+50$. The post-listing experience suggests that an investor who buys these stocks on the listing day and sells them during the post-listing period would experience a significant decrease in portfolio value. Over the total test period, the negative post-listing CARs more than offset the generally positive pre-listing CARs, but differ significantly from zero only during $t_{list} = -10$ to $+10$.

The evidence is similar to the historical pattern of returns reported in previous studies involving initial listing. That is, stock prices rise before the listing date but

¹⁸Brown and Warner [11, p. 32] note "when the timing of the abnormal performance is not uniform over the period under study, the precise pattern of estimated abnormal returns is conveniently summarized by a CAR plot: the pattern can provide useful information beyond that given by the value of the CAR at the end of an arbitrary 'cumulation period.'"

¹⁹Although not shown, the CARs also are examined for 50 trading days around the application and approval announcements. The CARs begin to rise about five weeks before the application announcement. Therefore, the initial price run-up begins before the public announcement of the listing application. A common explanation for this pattern is that firms decide to list only after a period of strong performance. The CARs continue their upward trend for several weeks after the application announcement and peak two days after the approval announcement. The CARs continue to decline rapidly from shortly after the approval announcement to ten weeks after listing. Thus, the pattern of negative abnormal returns begins before the actual listing date.

Exhibit 1. Abnormal Returns for AMEX-to-NYSE Transfers from 1982 to 1989 Around Three Event Dates — Full Sample and Low and High Volume Groups

Trading Days Around the Event Date	Full Sample			Bottom Third Low Volume Group			Top Third High Volume Group			Two-Sample <i>t</i> -statistic Low Versus High ARs %
	ARs %	<i>z</i> -value	% +	ARs %	<i>z</i> -value	% +	ARs %	<i>z</i> -value	% +	
Application Announcement										
-2 day	0.117	0.533	40.6	-0.543	-1.138	30.0	0.395	1.140	40.0	-1.052
-1 day	0.117	0.381	50.0	-0.147	-0.270	44.4	-0.118	-0.139	47.6	0.259
0 event day	0.533	1.916*	59.7	-0.064	-0.214	42.1	0.738	1.395	65.2	-1.058
1 day	0.324	1.326	51.5	0.465	1.534	63.6	0.911	1.689	58.3	-0.509
2 day	-0.089	-0.547	47.0	0.729	1.284	63.6	-0.411	-0.958	37.5	1.410
3 day	0.161	0.964	40.6	0.729	1.284	63.6	0.222	0.527	45.8	-0.036
4 day	0.133	0.656	63.3	0.193	0.796	35.0	-0.156	-0.291	56.5	1.489
Approval Announcement										
-2 day	0.148	0.554	46.3	-0.076	-0.193	52.2	0.582	1.200	52.2	-0.948
-1 day	-0.220	-1.143	38.1**	-0.325	-0.810	34.8	-0.255	-0.657	27.3**	-0.116
0 event day	0.169	0.385	42.2	-0.336	-0.746	39.1	0.518	1.005	45.5	-1.320
1 day	0.270	1.125	44.9	-0.023	-0.252	52.2	-0.124	-0.288	41.7	0.132
2 day	-0.155	-0.315	47.7	0.295	0.386	45.5	-0.194	-0.004	57.1	0.758
3 day	-0.115	-0.655	43.8	0.186	0.263	45.5	0.003	0.357	42.9	0.182
4 day	-0.180	-0.675	39.7**	0.591	1.128	47.6	-0.243	-0.422	42.9	1.012
Listing Date										
-2 day	-0.468	-1.524	48.4	1.324	2.435**	61.9	-2.634	-5.000***	40.9	1.614
-1 day	-0.062	-0.107	37.7**	-0.693	-1.045	27.8**	0.658	1.468	52.2	-1.797**
0 event day	-0.233	-0.794	48.4	0.278	0.447	50.0	-1.148	-2.489**	33.3	1.968*
1 day	0.005	0.285	47.6	-0.463	-0.873	44.4	-0.316	-0.655	39.1	-0.209
2 day	-0.433	-1.279	40.3**	-0.046	-0.144	40.0	-1.009	-1.926*	28.8**	1.398
3 day	-0.107	-0.491	37.5**	0.725	1.501	42.9	-0.621	-1.337	36.4	0.509
4 day	-0.941	-3.526***	26.9*	-0.510	-0.592	42.9	-0.927	-2.111**	20.8***	-1.687*

Notes:

*Significant at the 10% level for a two-tailed test.

**Significant at the 5% level for a two-tailed test.

***Significant at the 1% level for a two-tailed test.

underperform in the post-listing period. As discussed before, one economic explanation for the pre-listing results centers on expectations of improved liquidity and signaling, but the rationale for the post-listing results remains puzzling. Another possible explanation is a survivorship bias. That is, firms could list when they have a temporary run-up in prices and then go back to normal after the listing has occurred. For the AMEX-to-NYSE transfers, the CARs begin to rise before the application announcement and begin to decline shortly after the approval announcement, not after listing. The evidence also suggests that AMEX-to-NYSE transfers have some negative short-term wealth implications for current shareholders.

B. Low and High Volume Groups

Another research issue is whether the pattern of market behavior differs for AMEX stocks with low versus high

volume around the switch to the NYSE. As noted earlier, differential market reaction is hypothesized between the two volume groups because low transaction volume AMEX stocks are expected to have more to gain by moving to the NYSE than their high volume counterparts. Prior empirical research on initial listing suggests that the market responds differently to firms with different pre-listing liquidity.

Exhibit 1 shows that none of these ARs for the low volume group is significant around the three event dates, except $t_{list} = -2$ (+1.324%). On the other hand, the high volume group shows significantly negative abnormal returns of -2.634%, -1.148%, -1.009%, and -0.927% on $t_{list} = -2, 0, +2$, and $+4$, respectively. The two-sample *t*-tests show that the abnormal returns differ significantly only on $t_{list} = -1, 0$ and $+4$, but are significantly positive only on the listing date.

Exhibit 2. Cumulative Abnormal Returns for AMEX-to-NYSE Transfers from 1982 to 1989 — Full Sample

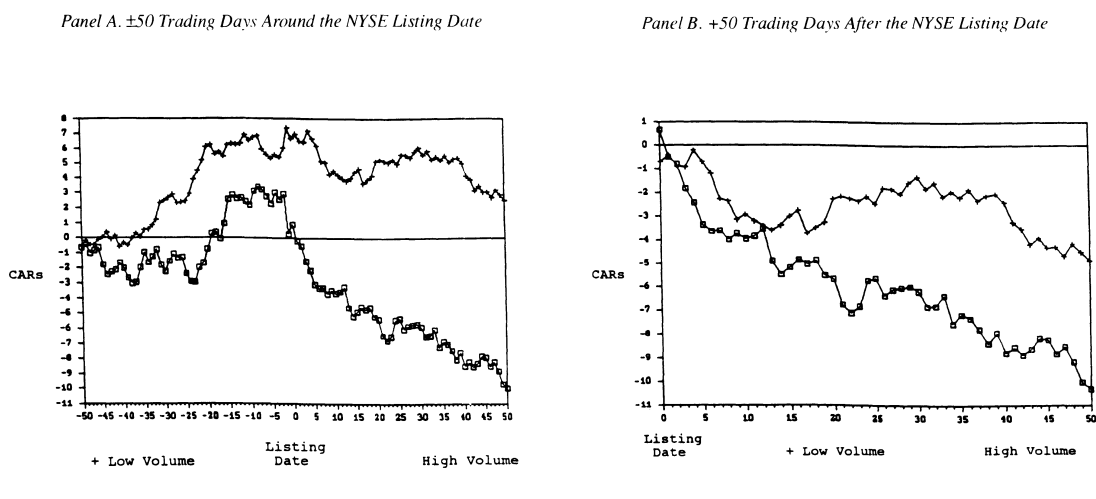


Exhibit 3. Cumulative Abnormal Returns for AMEX-to-NYSE Transfers from 1982 to 1989 Around the Listing Date — Full Sample and Low and High Volume Groups

Test Periods	Full Sample		Bottom Third Low Volume Group		Top Third High Volume Group		Two-Sample <i>t</i> -statistic Low Versus High CARs %
	CARs %	<i>t</i> -value	CARs %	<i>t</i> -value	CARs %	<i>t</i> -value	
Pre-Listing							
-50 to -1	3.607	1.511	7.376	1.898*	0.296	0.063	5.385***
-20 to -1	2.438	1.527	2.222	1.059	1.966	0.554	0.290
-10 to -1	-0.086	-0.068	0.483	0.345	-2.135	-0.735	3.791***
Post-Listing							
0 to +10	-3.315	-3.359***	-2.918	-1.730*	-3.941	-2.202**	1.948**
0 to +20	-3.823	-2.779***	-2.156	-1.041	-5.660	-2.198**	4.685***
0 to +50	-7.510	-3.647***	-4.889	-1.575	-10.299	-2.593**	5.046***
Total							
-10 to +10	-3.401	-2.127**	-2.435	-1.111	-6.076	-1.780*	4.275***
-20 to +20	-1.385	-0.657	-0.050	-0.017	-3.695	-0.842	3.178***
-50 to +50	-3.903	-1.238	2.496	0.502	-10.003	-1.623	7.405***

Notes:
 All tests are two-tailed, except the two-sample *t*-test which is one-tailed.
 *Significant at the 10% level.
 **Significant at the 5% level.
 ***Significant at the 1% level.

Panel A of Exhibit 4 shows the CARs for ±50 trading days around the NYSE listing date for AMEX stocks with low and high volume before listing. For the low volume group, the CARs are positive for 91 of the 101 trading days. The CARs drift upward and reach their highest point on $t_{list} = -1$ at +7.376% and then decline. For the high volume

group, the CARs are negative for 82 of the 101 trading days. They begin to rise about four trading weeks before the listing date and peak on $t_{list} = -4$ at 3.418%. Panel B of Exhibit 4 shows that both volume groups have negative CARs after listing but the decline is greater for the high volume group.

Exhibit 4. Cumulative Abnormal Returns for AMEX-to-NYSE Transfers from 1982 to 1989 — Low and High Volume Groups

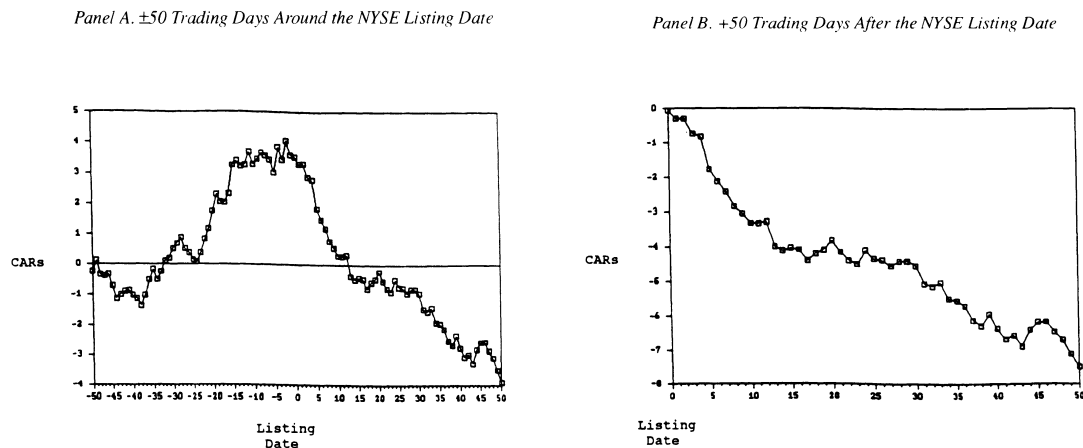


Exhibit 3 presents the CARs and t -statistics for the pre-listing, post-listing, and total test periods for both volume groups. The results for all three test periods show that the market responds more favorably to AMEX stocks with low volume that list on the NYSE.

During the pre-listing period, the CARs are significantly positive for the low volume group for $t_{list} = -50$ to -1 (7.376%). The t -tests do not differ significantly from zero during the three pre-listing test periods for the high volume group. The two-sample t -tests show that the CARs of the low volume group are significantly greater than those of the high volume group for $t_{list} = -50$ to -1 and -10 to -1 .

During the post-listing period, the CARs of the low volume group are significantly negative at the ten percent level only for $t_{list} = 0$ to $+10$ (-2.918%). By contrast, the CARs of the high volume group are significantly negative at the five percent level for $t_{list} = 0$ to $+10$ (-3.941%), 0 to $+20$ (-5.660%), and 0 to $+50$ (-10.299%). Therefore, the post-listing anomaly applies mainly to high volume AMEX stocks that move to the NYSE. The two-sample t -tests show that the CARs of the low volume group are significantly greater than those of the high volume group for the three intervals at the one percent level.

Over the total test period, none of the CARs differs significantly from zero for the low volume group. For the high volume group, the CARs are significantly negative at the ten percent level during $t_{list} = -10$ to $+10$ (-6.076%). Of

particular interest are the results for the $t_{list} = -50$ to $+50$. The low volume group has a return of 2.496% versus -10.003% for the high volume group, but these returns do not differ significantly from zero. The CARs of the low volume group are significantly greater than those of the high volume group for all three intervals at the one percent level.

C. Volume Changes

One economic explanation for the low volume stocks performing better than their high volume counterparts involves increased visibility and market interest after listing on the NYSE. If this hypothesis is correct, the low volume group should experience a relatively greater increase in volume after switching to the NYSE than the high volume group. To test this proposition, changes in both the average daily transaction volume and the scaled transaction volume ratio are compared between $t_{list} = -210$ to -51 and $t_{list} = 1$ to $+50$ for the low and high volume groups.

For the low volume group, Panel A of Exhibit 5 shows an increase in pre- to post-listing average daily transaction volume of +69.1% from 9,369 shares to 15,843 shares. For the high volume group, the average daily transaction volume increased by only +25.1% from 45,760 shares to 57,566 shares. These results may be misleading because it is easier for low volume stocks to show a higher increase in percentage terms than high volume stocks. Using the

Exhibit 5. Pre- and Post-Listing Changes in Average Daily Transaction Volume and Scaled Transaction Volume Ratio for AMEX-to-NYSE Transfers From 1982 to 1989 — Low and High Volume Groups

<i>Panel A. Volume Measurements</i>								
Volume Group	Average Daily Share Volume				Scaled Transaction Volume Ratio			
	Pre-NYSE	Post-NYSE	Post - Pre Difference	% Change	Pre-NYSE	Post-NYSE	Post - Pre Difference	Relative Change
Bottom third	9,369	15,843	+6,474	+69.1	0.001	0.002	0.001	1.00
Top third	45,760	57,566	+11,806	+25.8	0.005	0.007	0.002	0.40

<i>Panel B. Statistical Tests</i>								
Statistical Test	Average Daily Share Volume				Scaled Transaction Volume Ratio			
	Bottom Third Low Volume Group		Top Third High Volume Group		Bottom Third High Volume Group		Top Third Low Volume Group	
	Number	%	Number	%	Number	%	Number	%
<i>Sign test</i>								
Post-NYSE < Pre-NYSE (-)	7	29.2	11	44.0	6	25.0	11	44.0
Post-NYSE > Pre-NYSE (+)	17	70.8	14	56.0	17	70.8	14	56.0
Ties	0	0.0	0	0.0	1	4.2	0	0.0
Binomial probability (<i>p</i>)		0.06		0.69		0.04		0.69
Matched pairs <i>t</i> -test <i>t</i> -statistic		2.49**		1.97*		2.53**		1.95*
Wilcoxon matched-pairs signed-ranks test <i>z</i> -statistic		2.23**		1.65*		2.40**		1.49

Notes:

*Significant at the 10% level for a two-tailed test.

**Significant at the 5% level for a two-tailed test.

scaled transaction volume ratio, the relative increase in this ratio is greater for the low volume group than the high volume group.

Panel B of Exhibit 5 presents the statistical tests for the changes in average daily share volume and the scaled transaction volume ratio for each volume group. The sign test shows that the percentage of positive changes in both volume measures after NYSE listing is significantly greater than 50% only for the low volume group. The matched pairs *t*-test says that the difference in both pre- and post-listing volume measures are significantly different from zero for both volume groups. Yet, the low volume group has a higher level of statistical significance. The Wilcoxon matched-pairs signed-ranks test shows that the direction and size of the volume change are statistically significant and positive for the low volume group using both measures. For the high volume group, the Wilcoxon test is barely significant at the ten percent level using average daily share volume, but insignificant at the same significance level using the scaled transaction volume ratio. The results are similar using both volume measures.

The results suggest that switching from the AMEX to the NYSE increases visibility and interest in a firm's stock, especially for AMEX stocks with low volume. This evidence also provides a rationale for the returns of low volume stocks being significantly greater than those of high volume stocks around NYSE listings. The findings appear to contradict the notion that the NYSE specialist's incentive to service and provide liquidity for small, low volume stocks may not be great.

D. Additional Analyses

Two additional steps are taken to find if other explanations for the announcement effect differences exist. The first step involved examining whether the betas change between pre- and post-listing. According to Bhandari, Grammatikos, Makhija, and Papaioannou [9], a stock's risk characteristics may change because of listing. Post-listing performance should be evaluated on the new risk level. A decrease in risk immediately after listing should lead to lower returns. Failing to recognize lowered risk would make the returns appear abnormally low. Therefore,

Exhibit 6. Pre- and Post-Listing Changes in Beta for AMEX-to-NYSE Transfers from 1982 to 1989 — Full Sample and Low and High Volume Groups

<i>Panel A. Betas</i>						
Volume Group	Pre-NYSE	Post-NYSE	Post - Pre Difference			
Full sample	1.020	0.947	-0.073			
Bottom third	0.817	0.577	-0.240			
Top third	1.183	1.228	+0.045			

<i>Panel B. Statistical Tests</i>						
Statistical Test	Full Sample		Bottom Third Low Volume Group		Top Third High Volume Group	
	Number	%	Number	%	Number	%
<i>Sign test</i>						
Post-NYSE < Pre-NYSE (-)	36	50.7	15	65.2	9	36.0
Post-NYSE > Pre-NYSE (+)	35	49.3	8	34.8	16	64.0
Binomial probability (<i>p</i>)	1.00		0.21		0.23	
Matched pairs <i>t</i> -test <i>t</i> -statistic	0.73		1.54		0.22	
Wilcoxon matched-pairs signed-ranks test <i>z</i> -statistic	0.27		1.41		1.01	

Notes:

*Significant at the 10% level for a two-tailed test.

**Significant at the 5% level for a two-tailed test.

negative abnormal returns may result from decreases in market risk estimates during the post-listing period.²⁰

Exhibit 6 shows that the beta for the full sample decreases from 1.020 to 0.947 between pre- and post-listing. Although this change is not statistically significant, it shows that the average beta of AMEX-to-NYSE transfers adjusts toward lower values in the period immediately after listing. The average beta of the low volume stocks declines after listing but increases slightly for the high volume stocks. Neither of these changes in systematic risk is statistically significant at the ten percent level.

The beta changes between pre- and post-listing have several implications. A decrease in the post-listing beta suggests that the required return should also decrease, which should positively affect stock prices. Although the

lower return required due to the decrease in the market risk of the low volume group is small, it makes the post-listing returns seem abnormally low. Therefore, at least part of these negative returns may be explained away because the risk during post-listing is lower than during the estimation period. That is, using the post-listing beta in the market model to estimate abnormal returns should lead to higher or less negative abnormal returns during post-listing. By contrast, the greater riskiness of the newly listed stocks with high volume requires an extra return, which makes the post-listing anomaly somewhat worse than reported for this group. Overall, however, the slight shift in pre- and post-listing betas only has a minimal impact on the results.

The second step was to check if the high and low volume firms exhibit patterns of other major firm announcements, either before or after listing, that might affect their observed CAR patterns or their application announcement results. Examining the *Wall Street Journal Index* for three months before and after the listing date, a period corresponding roughly to the total test period of $t_{list} = -50$ to $+50$, produced several findings. The most common announcements were net income and cash dividends.

²⁰Studies by Reints and Vandenberg [30], Fabozzi and Hershkoff [16], Ying, Lewellen, Schlarbaum, and Lease [36], McConnell and Sanger [26], and Sanger and McConnell [32] show that betas remained unchanged when comparing long pre- and post-listing periods. Bhandari, Grammatikos, Makhija, and Papaioannou [9] find that risk is greater immediately after listing than in later periods. This evidence suggests that stocks undergo a seasoning process after listing.

These announcements generally reflected increases for both volume groups, but the announcements did not coincide with the application announcement. Two other common firm announcements were common stock filings or offerings and stock distributions, mainly stock splits.

For the high volume group, eight of 25 companies either filed with the SEC to sell stock or had a public offering within three months after listing. No firms issued common stock during the three months before listing. Such offers would lower the firms' financial leverage and their stock betas. As Exhibit 6 shows, the beta of this group increased after listing. Without these common stock offerings, the betas of the high volume group probably would have been higher. Only three of 24 stocks in the low volume group announced plans to issue additional common stock within the three months after listing, but none made such announcements immediately before listing. News of new stock offerings produce, on average, a negative impact on stock prices. Therefore, the observed price decline after listing is consistent with at least some price decline to be expected because of the new issue announcements.

Another major announcement was stock distributions (stock splits or large stock dividends). Grinblatt, Masulis, and Titman [20] report that stock prices, on average, react positively to stock dividend and stock split announcements that are uncontaminated by other contemporaneous firm-specific announcements. Five firms in the high volume group announced stock distributions within three months before listing and four announced them within three months after listing. Two companies in the low volume group issued stock splits during the three months before listing and four companies had stock distributions during the three months after listing.

The review of major announcements from the *Wall Street Journal Index* from three months before to three months after listing shows that the news announcements are mainly favorable for the two volume groups. Most newly listed firms had rising earnings and dividends, which, in turn, should positively affect stock prices. More than 30% of the two volume groups had stock distributions during the period extending from three months before to three months after listing. About 22% of them announced stock offerings after listing. These positive news announcements provide a few clues to the differences in CAR patterns, especially during post-listing, between the high and low volume groups.

These other announcements suggest another explanation of the price effects of listing, besides the liquidity benefits of listing. That is, the results may partly stem from an ex-post selection bias. It is possible that a larger fraction

of the full sample than the population-at-large announces good news (i.e., cash dividend increases) before listing, and bad news (new stock offerings) after listing. This pattern of announcement could explain the observed pattern of price. Managers may delay negative announcements until the listing application is approved. Also, the market may be able to anticipate some of these listing announcements to a greater extent than others. For example, stocks with heavy AMEX volume would be likely targets for NYSE listing.

IV. Conclusions

This study examines the market behavior of 72 common stocks moving from the AMEX to the NYSE from 1982 to 1989. Using event study methodology, the evidence for the full sample shows that the market has a significantly positive response on the day the NYSE announces the firm's application for listing. AMEX stocks behave similarly to OTC or NASDAQ stocks that initially list on the AMEX or NYSE. That is, the CARs rise during pre-listing for both OTC and AMEX stocks listing on the NYSE. Unlike OTC stocks, however, the CARs for the AMEX-to-NYSE transfers begin to decline shortly after the approval date, not after listing. Although the post-listing losses offset the pre-listing gains, the difference is statistically significant only during the interval $t_{list} = -10$ to $+10$.

There are two broad explanations for these results. One explanation is that price effects of listing are associated with the liquidity benefits of exchanges. A second explanation is an ex-post selection bias in which firms in the sample are doing other things that generate good news before listing and somewhat bad news after listing. Although both explanations have merits, the evidence favors the former explanation.

Somewhat different results occur by splitting the sample using a scaled transaction volume ratio and repeating the analysis. The CARs of the low volume group are significantly greater than those of the high volume group for all test periods except one. The low volume group also shows relatively greater increases than the high volume group in both the average daily transaction volume and scaled transaction volume ratio after NYSE listing. Also, the beta of the low volume group decreases after listing but the beta of the high volume group increases. The market's more favorable reaction to the low volume group may reflect not only greater visibility and market interest but also temporary increases in information flows, expectations of liquidity gains, and reduced systematic risk. Therefore, the value implications differ for AMEX-to-

NYSE transfers with low versus high transaction volume. Although this study does not fully explain the listing anomalies, it does show that these anomalies apply more to some stocks than to others. Specifically, the significant underperformance of AMEX-to-NYSE transfers during the post-listing period holds mainly for stocks with high transaction volume while on the AMEX.

The evidence suggests that managers of AMEX-listed firms should consider carefully the circumstances under which transferring to the NYSE might yield favorable results. The prospects for AMEX stocks with low transaction volume appear more favorable than for their high volume counterparts. An avenue for future research is to examine other pre-listing attributes besides volume that may help to explain market behavior around listing.

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