Listing Changes and Visibility Gains

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This study examines whether visibility changes for firms moving from the AMEX to the NYSE from 1984 through 1993. The study uses four proxies to measure visibility: (1) the number of analysts estimating the firm's next fiscal year's earnings (NOA); (2) the number of institutional shareholders (NOI); (3) the percentage of shares held by institutions (POS); and (4) the number of citations in The Wall Street Journal (NOC). A control sample of firms that remained on the AMEX provides a basis for comparing changes in visibility.

The empirical evidence suggests a positive association between AMEX-to-NYSE transfers and visibility gains for each measure (except the three-month period immediately around listing for NOC). Regression analysis also supports a relationship between the listing change to the NYSE and increased visibility, especially in NOA and POS. Therefore, the evidence generally supports management's perceptions about the link between AMEX-to-NYSE switches and visibility gains.

Introduction

Each year many corporate managers decide to change the marketplace for trading their firms' securities. Firms often move their trading location from the Nasdaq Stock Market to a national exchange—either the American Stock Exchange (AMEX) or the New York Stock Exchange (NYSE). Some AMEX-listed firms also switch to the NYSE. Firms rarely choose to leave the NYSE voluntarily because of Rule 500. The

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rule, adopted in the late 1930s, effectively locks companies into the NYSE once they list.

For more than fifty years, researchers have studied the subject of initial exchange listing.[1] The listing decision may reflect both managerial preferences for a particular exchange and a tradeoff between the costs and benefits of making the change. Empirical research conducted by Sanger and McConnell (1987), Kadlec and McConnell (1994), and others shows that the market responds favorably to news about exchange listing. The increase in value associated with listing on a national exchange is associated with both economic and noneconomic factors. For example, Baker and Pettit (1982) and Baker and Johnson (1990) identify important motives given by managers of firms moving from Nasdaq to the AMEX or NYSE. These motives include the desire to improve visibility, gain prestige, and enhance liquidity. After firms move trading in their stock to the AMEX or NYSE, stock returns are generally poor, as documented by McConnell and Sanger (1986) and Edelman and Baker (1994). Not all newly listed stocks, however, have negative post-listing performance. Dharan and Ikenberry (1995) attribute the long-run negative drift of post-listing stock returns, specifically among smaller firms, to managers timing their firm's application for listing. That is, smaller firms often apply for listing while meeting exchange listing requirements but before their performance declines.

Few studies have examined either the effect of or the rationale for AMEX-to-NYSE switches. Two studies have examined the market impact of switching domestic auction markets. McConnell and Sanger (1987) investigate the post-listing returns of Curb/AMEX stocks that listed on the NYSE from 1926 to 1982 and find significant negative average market-adjusted returns in the month immediately after listing. In a study of AMEX-to-NYSE transfers from 1982 to 1989, Baker and Edelman (1991) report common stock returns are abnormally positive before the switch but abnormally negative after the switch.

Baker (1993) surveys managers to find why companies moved their trading location from the AMEX to the NYSE during the period 1982 through 1990. The study shows that the most important reasons for switching are to increase prestige and visibility. More than 96 percent of the respondents agree that listing on the NYSE increases a firm's visibility compared with remaining on the AMEX. Most respondents also agree that moving to the NYSE from the AMEX increases investor interest in a firm's stock (96.2 percent), increases institutional ownership of a firm's stock (84.6 percent), and increases research coverage by security analysts (82.4 percent). Increases in investor interest, institutional ownership, and research coverage can serve as proxies for increased visibility.

Although conventional wisdom suggests that listing on the NYSE offers greater visibility than remaining on the AMEX, this managerial perception about switching

[1] Baker and Meeks (1991) provide a synthesis of the listing and delisting literature.

auction markets requires further empirical investigation. The purpose of the current study is to examine whether empirical evidence supports the perceived link between AMEX-to-NYSE switches and visibility gains. The primary goal is to test whether visibility increases after a firm moves its trading location from the AMEX to the NYSE. The study also investigates whether an association exists between visibility gains and a firm's size and past performance.[2] As used in this study, *visibility* refers to the extent to which analysts follow and institutions hold a firm's stock and to the amount of a firm's news coverage.

The study focuses on corporations that move the trading location of their stock from the AMEX to the NYSE primarily because few studies examine auction market switches. Most of the previous research focuses on initial listing on either the AMEX or the NYSE. The AMEX and NYSE, as auction markets, are more like each other than either is like a dealer market such as the Nasdaq. Yet, several differences exist between the AMEX and the NYSE that may influence management's decision to change auction markets. For example, the NYSE is a much larger market than the AMEX and has proportionally more institutional and member trading and less retail activity than the AMEX. NYSE listing requirements are also more stringent than those for the AMEX, which may signify a higher level of certification by an independent body.

Research by Merton (1987) provides the theoretical foundation for this study. As discussed later in more detail, Merton asserts that the public visibility of a stock can affect its rate of return in a market with incomplete information. Thus, an increase in the size of a firm's investor base will lower investors' expected return and increase the market value of the firm's shares. Further, he contends that listing on a national exchange is one way to increase base size. Following Merton's notion, the current study hypothesizes that visibility increases after AMEX firms switch to the NYSE.

The importance of the current study lies in providing empirical evidence about management's rationale for moving from the AMEX to the Big Board. To date, no empirical research tests whether AMEX-to-NYSE switches are associated with visibility gains. The current study expands, updates, and improves upon related research on initial listing and visibility. Therefore, the study adds incrementally to existing knowledge on factors related to exchange listing. The results should interest AMEX managers who are thinking about switching the trading location of their firm's stock to the NYSE, national exchanges competing for listings, and researchers interested in listing effects.

Importance of Visibility

Achieving visibility gains by moving the trading location of a firm's stock may be important to managers for several reasons. For example, news of listing may attract

[2] The study does not examine whether an association exists between switching domestic auction markets and abnormal returns or increases in market values because other researchers (McConnell and Sanger, 1987; and Baker and Edelman, 1991) previously have addressed this issue.

attention to the company in the investment community. Merton (1987) contends that the publicity associated with listing reaches some investors who were previously unaware of the security. Listing also may temporarily increase information availability due to increased interest, which, in turn, may reduce uncertainties about stock performance and riskiness and increase the stock's price. Barry and Brown (1986) view limited information as a source of risk.

Bhardwaj and Brooks (1992) believe that limited information creates greater information asymmetry between outside investors and both managers and insiders resulting from less monitoring of these stocks. Because of these information asymmetries, outside investors in such firms face higher monitoring costs and a greater chance of larger wealth transfers to managers and insiders than do outside investors in well-followed firms. Outside investors of such firms also face higher expected transaction costs. Thus, increasing visibility may benefit firms by enhancing the efficiency of the trading market in the stock.

Researchers such as Arbel (1985a, 1985b) refer to stocks with low informational content (quantity, quality, and availability) as *neglected stocks*. Neglected stocks have low visibility because they receive less scrutiny by financial analysts, institutional investors, and news services than other firms. Thus, the most neglected AMEX companies may find that switching exchanges has greater value in terms of visibility than the average AMEX stock that already receives sufficient attention and has no advantage in shifting exchanges.

Arbel and Strebel (1982, 1983) and Arbel, Carvell, and Strebel (1983) show that stocks neglected by analysts or by institutions outperform popular stocks, on a risk-adjusted basis, even after correcting for size.[3] Although a strong relationship exists between size and neglect (low visibility), this correlation is less than perfect. That is, neglected firms are usually small, but not always. In addition, large neglected companies perform better than small popular companies. The excess returns associated with neglected firms are not because they are small but because they are still to be discovered. Thus, their returns reflect an information deficiency premium rather than a size premium (Arbel, 1985b).

Until recently, the visibility or investor recognition explanation for the association between exchange listing and share price increases lacked both a rigorous analytical foundation and empirical support. Merton's (1987) model of capital market equilibrium with incomplete information provides an analytical foundation. Unlike the capital asset pricing model, Merton does not assume equal information across investors. Instead, he assumes that investors invest only in those securities of which they are aware. Merton shows that expected returns depend on other factors beside market risk. According to his model, all else equal, an increase in the size of a firm's investor base, which Merton

[3] For additional research on neglected firms, see Dowen and Bauman (1986), Edelman and Baker (1987), and Carvell and Strebel (1987).

calls the *investor recognition* factor, will lower investors' expected return. In turn, this change will lead to a lower cost of equity capital and will increase the market value of the firm's shares. Therefore, managers have an incentive to expand the firm's investor base by having its shares listed on a national exchange.

Kadlec and McConnell (1994) provide the first empirical test of Merton's model. They analyze 273 Nasdaq stocks that listed on the NYSE from 1980 to 1989. Evidence shows that, on average, listing firms experience a 19 percent increase in the number of registered shareholders and a 27 percent increase in the number of institutional shareholders. Kadlec and McConnell report a statistically positive association between the announcement effect for listing and changes in these visibility measures. Controlling for changes in bid-ask spreads, firms that experience the greatest increase in number of shareholders following listing also exhibit the greatest increase in stock price in response to the listing announcement. Although this finding appears to support Merton's (1987) model and to imply that the increased visibility improves shareholder wealth, the changes in the number of shareholders could result from differences in the microstructure of the two markets rather than visibility.

Kadlec and McConnell's failure to use a control sample, to provide statistical tests for changes in the visibility measures, and to use a consistent observation period may affect the interpretation of their results. For example, Kadlec and McConnell (1994, p. 618) note that "the average interval between the pre-listing and post-listing observations of registered shareholders is eight months with a minimum of one month and a maximum of fourteen months." Therefore, they are making comparisons involving changes in the number of shareholders based upon different comparison periods around the listing period. Such inconsistencies may affect the reliability and the ability to generalize their results. The current study avoids these potential limitations.

Literature Review

Although no previous research focuses on the relationship between AMEX-to-NYSE switches and visibility gains, several studies examine the issue of whether initial listing is associated with changes in visibility. For example, Baker and Spitzfaden (1982) examine differences in the number of news items appearing in *The Wall Street Journal* from 1978 to 1980 between listed and Nasdaq stocks. That is, their concern focuses on media visibility. Baker and Spitzfaden match their samples based on the standard industrial classification (SIC) code, asset size, and debt ratio. Their samples consist of 14 Nasdaq-to-AMEX and 15 Nasdaq-to-NYSE matched pairs. Using a Wilcoxon matched-pairs signed-ranks test, they conclude that AMEX-listed but not NYSE-listed stocks receive more news coverage than similar Nasdaq stocks. According to Baker and Spitzfaden, the differences in news coverage do not appear significant enough to reduce the perceived riskiness of listed stocks, to lower investors' rates of return, or to reduce the cost of equity capital.

Several limitations of the Baker and Spitzfaden study may temper their conclusions. These limitations include small sample sizes and an *after only* research design. The current study attempts to overcome these limitations by using a much larger sample size and a *before-after* research design.

Mayer (1990) examines whether analyst research coverage rises after AMEX listing. She uses a matched sample of 119 companies that transferred from Nasdaq to the AMEX over the 1983 to 1988 period and 119 companies that traded continuously on Nasdaq throughout this period. Mayer uses two measures of analyst research coverage: the number of sell-side security analysts (i.e., analysts engaging in marketing securities or research activities) following a company and the number of brokerage firms following a company. Over the two-year pre-listing to post-listing period, the average number of sell-side analysts per company for new AMEX listings and the Nasdaq peers increased 76 percent (from 1.37 to 2.41) and 28 percent (from 1.29 to 1.65), respectively. The difference in coverage gains between the two groups is statistically significant at the 0.01 level. Mayer reports similar results for the average number of brokerage firms following these companies. This evidence suggests an association between AMEX listing and an increase in analyst research coverage, which serves as a proxy for visibility.

Mayer's sample selection procedure may lead to at least two possible biases. First, she uses Nelson's *Directory of Wall Street Research* to identify the number of analysts for each firm. A selection bias could exist when drawing a sample from this source because it truncates firms not followed by the analysts in its pool. This truncation effect may limit generalizing her findings. Second, Mayer gathers the pre-listing data from the end of the calendar year before the listing. Therefore, the pre-listing data could be from one month before the listing to 12 months before the listing. The post-listing portion of the observation period ranges from just less than one year to just less than two years. The pre-listing and post-listing numbers should all be the same number of months from the listing date to improve comparability. Therefore, Mayer's data gathering procedure may weaken the results of her study. The current study tries to improve upon her research methodology by reducing these potential biases.

Research Methodology

Visibility Proxies and Data Sources

Because actual visibility cannot be accurately measured, this study uses four proxies to test whether visibility changes after firms move from the AMEX to the NYSE. These visibility proxies are:

1. The number of analysts estimating a firm's next fiscal year's earnings (NOA);
2. The number of financial institutions holding the stock (NOI);
3. The percentage of shares held by financial institutions (POS); and

4. The number of citations of a firm in a news article appearing in *The Wall Street Journal* (NOC).[4]

NOA measures a stock's popularity among analysts while NOI and POS measure visibility among financial institutions. NOC measures news or media coverage.

For the first proxy (NOA), I/B/E/S Inc. provided earnings per share forecast data through the *Institutional Brokers Estimate System Monthly Summary Data*.[5] The source of the next two proxies (NOI and POS) is *Standard & Poor's Stock Reports*. Both sources provide data monthly. The Dow Jones Information Retrieval Service Database is the source of the fourth visibility proxy (NOC). This service provides articles reported in *The Wall Street Journal (WSJ)*. The study uses a single news source rather than multiple sources (such as leading financial magazines like *Barron*□*F, Fortune, Business Week,* or *Forbes*) to avoid problems associated with similar stories reported by different sources. Making generalizations about media visibility based solely on *WSJ* citations requires some caution.

Sample

The study examines whether changes in each visibility proxy differ significantly between a group of switched (AMEX-to-NYSE) firms and a matched-pairs sample of firms continuously trading on the AMEX. For the first three proxies (NOA, NOI, and POS), the value of each proxy on the 12th month before (t_{-12}) the listing date is compared with the 12th month after (t_{12}) the listing date. Therefore, the pre-listing and post-listing data are all 12 months from the listing date.[6]

The research design excludes the period around listing when measuring institutional ownership to avoid any institutional trading effects. McConnell and Sanger (1984) note that institutions may buy stock of firms applying for NYSE listing to capture the abnormal, positive returns that accrue between application and listing. That

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4 These visibility proxies may be size proxies. Compared with small firms, large firms may have more analysts making earnings estimates, more institutions owning shares, a higher percentage of shares held by institutions, and more news coverage.

5 I/B/E/S data are preferred over such data found in Nelson's *Directory of Wall Street Research* for two reasons. First, I/B/E/S data are available monthly whereas Nelson's data are yearly. Second, I/B/E/S provides broader analyst coverage than does Nelson's.

6 Listing on the NYSE potentially involves three announcement dates: the public announcement of the application or "on file" date, the approval date, and the listing date. The NYSE *Weekly Bulletin* may report all or some of these announcements. Subscribers receive the *Weekly Bulletin*, which the NYSE publishes each Friday, early in the following week. The current study uses the actual listing date for several practical reasons. First, the *NYSE Weekly Bulletin* often does not report the application announcement or approval dates. Second, the period between the on file date and the actual listing is usually about a week or two. The study uses monthly and yearly data, not daily data, to examine the association between AMEX-to-NYSE switches and visibility gains. Therefore, the potential effect of using the listing date instead of the on file date or the announcement date is negligible or immaterial.

is, investors typically know of a firm's intention to list weeks before the listing occurs. Institutions also may speculate on the listing possibilities. Outside the period of several months directly before and after firms switch from the AMEX to the NYSE, institutional trading is probably unsystematic and, therefore, unlikely to bias the data gathering process. Although this observation period is arbitrary and includes only one month of pre-listing and post-listing data, it avoids the weakness of failing to use a consistent observation period found in studies by Mayer (1990) and Kadlec and McConnell (1994).

For the fourth proxy (NOC), the study compares the number of *WSJ* citations of a firm between two periods. These periods are three months before to three months after the switch (t_{-1} to t_{-3} compared with t_{+1} to t_{+3}) and nine months before t_{-3} to nine months after t_{+3} (t_{-4} to t_{-12} compared with t_{+4} to t_{+12}).

News about AMEX-to-NYSE switches may occur several weeks or months before the listing date as information becomes available about a firm's intention to list. For example, a firm must apply for listing and receive NYSE approval before listing occurs. The NYSE discloses this information in the *NYSE Weekly Bulletin*. Using the two periods can distinguish between listing-related and firm-related news coverage.

The research department of the NYSE provided data on all firms that listed on the NYSE between January 1, 1984 and December 31, 1993. The reason for choosing this period is because it includes enough AMEX-to-NYSE switches to provide an adequate sample size for statistical testing. Because the sample period also covers both up and down markets, the period chosen potentially reduces selection bias that might result from including only AMEX-to-NYSE switches that take place during a particular phase of the market cycle. During the ten-year sample period, 148 AMEX-to-NYSE switches occurred. A control sample is developed by matching each newly listed NYSE firm with a comparable firm that remained on the AMEX throughout the period.

The study uses a matched sample because a firm's visibility may change for reasons unrelated to listing. As Mayer (1990) notes, many small and mid-sized companies may become more visible through their normal course of maturation and growth. In addition, industry developments may cause an entire sector to move in or out of favor. Thus, the matching procedure tries to reduce differences due to extraneous variables by comparing the experience of firms switching from the AMEX to the NYSE with that of otherwise similar AMEX firms.

We develop matched pairs using COMPUSTAT based on two broad criteria: (1) industry type, as measured by the two-digit SIC code; and (2) size, as measured by the market value of equity.[7] That is, an AMEX firm closest in size and with the same SIC

[7] By comparison, Mayer (1990) matches her sample based on SIC code and size. Baker and Spitzfaden (1982) match their sample on SIC code, asset size, and debt ratio. The primary purpose of their paper, however, is to examine whether an association exists between listing and a firm's cost of equity capital.

code is matched to an AMEX-to-NYSE switched firm on the 12th month before (t_{-12}) the listing change.

Matching only industry and size at a specific time does not control for performance differences in such variables as trading activity, earnings growth rate, price changes, or dividends. Although these variables may affect changes in visibility, adding additional variables in the matching process would reduce the number of potential matching firms and would result in increasingly smaller sample sizes. In turn, having a smaller sample would affect the ability to generalize the findings. The decision to examine a larger sample size by matching only industry and size instead of including other variables reflects this tradeoff.

Table 1 presents the results of t-tests of difference in means after dividing the sample of 148 into three approximately equal groups (small, medium, and large) based on the market value of equity. The t-tests show no statistically significant differences at the 0.05 level for any size group. These results suggest that the switched and matched firms are similar in size.

Hypothesis

The study tests the visibility gains hypothesis. According to this hypothesis, visibility, as measured by the four visibility proxies, increases for the AMEX-to-NYSE switches (switched group) compared with the matched sample of firms remaining on the AMEX (matched group). If a relationship exists between switching from the AMEX to the NYSE and visibility gains, the switched firms should have significantly greater increases in NOA, NOI, POS, and NOC than their AMEX counterparts have.

Each data set is partitioned into three approximately equal size groups (small, medium, and large) based on the market value of equity to examine whether an association exists between size and visibility gains. Large firms moving from the AMEX to the NYSE are expected to experience less visibility gains than small-size or medium-size firms because large firms are likely to attract more attention from analysts, institutions, and the media despite their listing status on the AMEX or NYSE. Unlike large firms, small-size and medium-sized firms are expected to attract some investors who were previously unaware of the stock because of the prestige and publicity associated with NYSE listing.

To test the visibility gains hypothesis, a data set is used consisting of 148 matched pairs for the four visibility proxies. A value of zero is assigned to any missing values of the visibility proxies. For example, a value of zero is assigned to those firms that I/B/E/S does not follow. That is, the I/B/E/S database contained no analysts estimating the firm's next fiscal year's earnings either on the 12th month before or after the listing date. This approach removes the potential bias of dropping firms due to no analysts following or institutions owning the stocks during the specified period.

Table 1—Equity Value of Switched and Matched Samples 12 Months Before the NYSE Listing Date

This table shows the mean and standard deviation of the market value of equity for the switched (NYSE) and matched (AMEX) samples. The total sample is partitioned into three groups of about equal size. The t-value shows whether the switched and matched groups differ significantly in market value of equity using a two-tailed test

		Market Value of Equity				
		Switched (NYSE) (in millions $)		Matched (AMEX) (in millions $)		
Group Size	n	Mean	Standard Deviation	Mean	Standard Deviation	t-value
Small	49	$ 51.95	$ 14.34	$ 51.17	$ 18.68	0.23
Medium	49	114.83	24.84	106.14	47.51	1.13
Large	50	482.04	472.71	464.85	486.96	0.18
Total	148	218.07	333.47	209.13	337.62	0.23

None of the t-values is significant at the 0.05 level.

Testing the visibility gains hypothesis involves using two related-samples tests, the matched-pairs t-test and the Wilcoxon matched-pairs signed-ranks test, a nonparametric equivalent. Each test examines whether a difference of differences for each pair exists. That is, the two groups (switched and matched) are matched, pair by pair, and have pre-listing and post-listing measures for each group. The following mathematical expression is used to test relative changes in the visibility proxies between the switched and matched pairs.

$$(\text{Switched}_{\text{after}} - \text{Switched}_{\text{before}}) - (\text{Matched}_{\text{after}} - \text{Matched}_{\text{before}})$$

Using the matched-pairs t-test, the null hypothesis is that the mean of the pair-by-pair difference of differences is zero. These tests are one-tailed because the expectation is that an association exists between AMEX-to-NYSE switching and visibility gains.

Empirical Results

Changes in Visibility Proxies

Table 2 contains the before-to-after listing percentage changes for the switched and matched firms and the matched-pairs tests for changes in visibility (NOA, NOI, and POS) between the 12th month before (t_{-12}) and after (t_{+12}) the listing date. For the total sample, both the switched firms and their matched AMEX counterparts experience visibility gains over the before-listing to after-listing period using all three measures. For example, NOA increases 49.0 percent for the switched group compared with 12.4 percent for the matched group. Both matched-pairs tests (t-test and Wilcoxon) are positive and significant at the 0.01 level for NOA, NOI, and POS. Therefore, the evidence supports the hypothesis that the switched firms experience superior visibility gains compared with the matched firms.

Table 2—Matched-Pairs Tests for Changes in Analyst and Institutional Visibility (NOA, NOI, and POS) Before and After NYSE Listing for Firms Partitioned by Size

This table reports the results of the hypothesis that firm visibility, as measured by three proxies (NOA, NOI, and POS), increases for firms moving from the AMEX to the NYSE (switched group) compared with the matched sample of firms remaining on the AMEX (matched group). The table shows changes in firm visibility after partitioning the sample into three about equal size groups (small, medium, and large) based on the market value of equity. The matched-pairs tests show whether the mean percentage change on each of three visibility measures differs significantly for the switched and matched group between the 12th-month before and the 12th-month after NYSE listing. The test statistics are one-tailed and require a positive sign to be significant in the predicted direction

Group		Switched 12th Month		Matched 12th Month		% Change Before to After		Matched-Pairs Tests	
Size	n	Before	After	Before	After	Switched	Matched	t-value	Wilcoxon
Panel A: Number of Analysts Estimating the Next Fiscal Year's Earnings (NOA)									
Small	49	1.73	2.89	0.86	1.14	67.1	32.6	2.4**	2.3*
Medium	49	2.29	4.18	1.61	1.78	82.5	10.6	4.6**	3.9**
Large	50	5.24	6.76	4.48	4.90	29.0	9.4	2.2*	2.4**
Total	148	3.10	4.62	2.33	2.62	49.0	12.4	5.1**	5.0**
Panel B: Number of Institutional Shareholders (NOI)									
Small	49	15.29	31.35	13.65	18.39	100.1	34.7	4.4**	3.8**
Medium	49	27.47	49.76	24.37	28.43	81.1	16.7	5.3**	4.2**
Large	50	66.80	96.72	64.86	74.34	44.8	14.6	3.5**	3.0**
Total	*148*	*36.72*	*59.53*	*34.50*	*40.61*	*62.1*	*17.7*	*6.8***	*6.5***
Panel C: Percentage of Shares Held by Institutions (POS)									
Small	49	2.3	3.3	3.1	3.4	43.5	9.7	2.3*	2.0*
Medium	48	2.6	3.7	2.1	2.3	42.3	9.5	3.2**	3.1**
Large	49	3.0	3.6	2.6	2.7	20.0	3.8	1.7*	2.1*
Total	146	2.7	3.5	2.6	2.8	32.5	8.9	5.2**	4.1**

* Significant at the 0.05 level

** Significant at the 0.01 level

Note: The total sample size is 146 for the percentage of shares held by institutions (POS). Two pairs have missing observations for shares outstanding and are excluded. These firms have no shares outstanding for the observation date in either COMPUSTAT or CRSP

Dividing the sample into three size groups based on the market value of equity provides some insights about the relationship between visibility gains and size. Not surprisingly, Panels A and B of Table 2 show a direct association exists between the two visibility proxies (NOA and NOI) and size. That is, the number of analysts and institutional shareholders decreases from large-sized to medium-sized and from medium-sized to small-sized firms. This relationship exists for both the switched and matched firms for the period both before and after listing. Panel C also shows a direct association between the percentage change in POS and size. The before-to-after percentage change in POS is the highest for small-sized firms and the lowest for large-sized firms.

For each size group, the matched-pairs tests for NOA, NOI, and POS are all statistically significant at the 0.05 level or better.[8] Each size group experiences visibility gains associated with listing. Therefore, this evidence supports the visibility gains hypothesis after partitioning the sample into the three size groups.

Table 3 provides the results of the matched-pairs tests for the number of *WSJ* citations (NOC). For the three-month period before (t_{-1} to t_{-3}) and after (t_{-1} to t_{+3}) the AMEX-to-NYSE switches, none of the matched-pairs tests is statistically significant at the 0.05 level for either the total sample or any of the three size groups. NOC decreases for the small and medium switched firms compared with the matched firms. This evidence does not support the hypothesis involving an association between AMEX-to-NYSE switches and gains in media visibility for the period immediately around listing.

Table 3 also contains the results for the nine-month period before (t_{-4} to t_{-12}) and after (t_{+4} to t_{+12}) the AMEX-to-NYSE switches. Media visibility, as measured by NOC, increases significantly for the total sample and for the small group based on the t-tests. Using the Wilcoxon tests, media visibility increases significantly for the total sample and all three size groups. Rejecting the null hypothesis suggests that media visibility increases for the AMEX-to-NYSE switched firms compared with the matched sample of firms continuously remaining on the AMEX.[9]

Additional Analysis

Interpreting the results in Tables 2 and 3 requires caution because alternative explanations exist for the changes in the visibility proxies surrounding AMEX-to-NYSE switches. Although the preceding evidence suggests an association between listing and visibility gains, this does not necessarily imply causation. Listing may be serving as an appropriate *instrumental* variable representing visibility.

One possible explanation of this perceived association between listing and visibility gains involves high growth companies. Such companies may list and attract increased attention, not because of listing *per se*, but because of their growth or strong market performance. Thus, increases in visibility may occur coincidentally with listing. For

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[8] T-tests are used to test whether the average differences in percentage change (ADPC) in each of the visibility proxies. The mathematical expression used to measure relative percentage changes before and after listing for the switched (S) and matched (M) pairs follows:

$$ADPC = \frac{\sum_{i=1}^{n} [(S_{after_i} - S_{before_i})/S_{before_i} - (M_{after_i} - M_{before_i})/M_{before_i}]}{n}$$

The results show no significant differences at the 0.05 level between the small and medium, small and large, and medium and large groups for NOA, NOI, and POS.

[9] As discussed in footnote 8, t-tests between different size groups are also conducted for NOC. The results show no significant differences at the 0.05 level between small and medium, small and large, and medium and large groups for NOC for either the three-month or nine-month period.

Table 3—Matched-Pairs Tests for Changes in Media Visibility (NOC) Before and After NYSE Listing for Firms Partitioned by Size

This table reports the results of the hypothesis that media visibility, as measured by the number of citations in *The Wall Street Journal (NOC)*, increases for firms moving from the AMEX to the NYSE (switched group) compared with the matched sample of firms remaining on the AMEX (matched group). The table presents statistics for NOC for a three-month period before (t_{-1} to t_{-3}) and after (t_{+1} to t_{+3}) AMEX listing and the nine-month period before (t_{-4} to t_{-12}) and after (t_{+4} to t_{+12}) NYSE listing. The total sample is partitioned into three groups of about equal size (small, medium, and large) based on the market value of equity. The matched-pairs tests are one-tailed and require a positive sign to be significant in the predicted direction

		Switched		Matched		% Change			
Number of		Three Month Period		Three Month Period		Before to After		Matched-Pairs Tests	
WSJ Cites	n	Before	After	Before	After	Switched	Matched	t-value	Wilcoxon
Small	49	2.10	1.57	0.53	0.37	-25.2	-30.2	-1.0	-1.1
Medium	49	2.22	1.49	1.71	1.57	-32.9	-0.8	-1.2	-1.1
Large	50	3.24	3.78	3.42	2.96	14.8	-13.5	1.6	1.2
Total	148	2.53	2.27	1.89	1.64	-10.3	-13.2	0.0	-0.4

		Switched		Matched		% Change			
Number of		Nine Month Period		Nine Month Period		Before to After		Matched-Pairs Tests	
WSJ Cites	n	Before	After	Before	After	Switched	Matched	t-value	Wilcoxon
Small	49	3.55	4.69	2.37	1.18	32.11	-50.21	2.4**	1.9*
Medium	49	3.49	5.27	6.10	4.55	51.00	-25.41	1.5	2.3*
Large	50	9.42	10.10	7.88	7.10	7.22	-9.89	1.3	1.8*
Total	148	5.51	6.71	5.47	4.29	21.78	-21.57	3.0**	3.5**

* Significant at the 0.05 level

** Significant at the 0.01 level

example, Sanger and McConnell (1986), Cowan, Carter, Dark, and Singh (1992), and Dharan and Ikenberry (1995) find that firms often initially list after a period of abnormally strong market performance. Thus, part of the observed increases in the visibility proxies may be related to strong market performance, not to listing.

To test the notion, two different growth measures are used: a one-year growth measure and a five-year average growth measure. The first growth measure is a single year change measure of earnings per share (EPS), which is constructed for each company using data obtained from *Standard & Poor's Stock Reports*.[10] The growth in annual earnings is EPS_{post}/EPS_{pre} -1, where pre is the period t_{-24} to t_{-12} months before listing and post is the period t_{+1} to t_{+12} months after listing. For NOA, NOI, and POS, GROWTH represents the latest annual earnings available to analysts and institutions.[11]

[10] Another possibility is to use market-adjusted returns to measure performance. Peterson and Peterson (1982), among others, show that a linear relationship exists between returns and changes in mean forecasted earnings. Therefore, returns are a proxy for future growth. Using the earnings growth rate is a more appropriate performance measure than using market-adjusted returns because the current study focuses on past growth, not future growth.

[11] *Standard & Poor's Stock Reports* list company numbers in the issue after receiving the numbers. In addition, companies may not produce earnings numbers immediately. Therefore, annual earnings per share (EPS) is the sum of the last four quarterly EPS figures available *two*

The second growth measure is a five-year average EPS measure provided in the I/B/E/S database. This growth rate is based on a least squares calculation of a moving average of four quarters of actual earnings for the latest 20 quarters immediately before the listing month, t = 0.

These growth measures involve several tradeoffs. For example, using a five-year average EPS growth measure rather than a raw annual growth rate for a shorter period reduces the influence of outliers because shorter growth periods result in greater variability of growth factors. A one-year change measure is clearly noisier than a five-year average. Thus, the five-year growth measure provides a better measure of sustained growth than the one-year growth measure. Using the five-year average EPS growth measure compared with the one-year EPS growth measure results in fewer matched pairs, however, 53 versus 98, respectively. That is, the sample decreases 65.2 percent using the five-year measure but only 33.8 percent using the one-year measure. The truncated sample based on the five-year EPS growth measure also suffers from a size bias because it contains mainly larger, more established firms, which analysts tend to have followed. Although we discuss our regression results using both growth measures, we only present the results using the one-year EPS growth measure in Table 4.

Two regression models are used. One set of regressions uses only GROWTH as the independent variable while in the other set includes GROWTH, EXCHANGE, and SIZE. In these regression models, the dependent variable is the percentage change in the visibility proxy (%ΔVISIBILITY), not the actual differences, because larger companies often have greater visibility than smaller companies. The multiple regression equation is shown below.

$$\%\Delta \text{VISIBILITY}_i = \beta_0 + \beta_1 \text{GROWTH}_i + \beta_2 \text{EXCHANGE}_i + \beta_3 \text{SIZE}_i$$

where:

%ΔVISIBILITY	=	Percentage change in the visibility proxy (NOA, NOI, POS, and NOC) for firm i from pre-listing to post-listing;
GROWTH_i	=	The growth rate in earnings per share for firm i from one year before to one year after listing based on earnings data from *Standard & Poor's Stock Reports*;
EXCHANGE_i	=	A dummy variable where the value is 1 if firm i is listed on the NYSE and 0 if the firm is listed on the AMEX; and
SIZE_i	=	The market capitalization of firm i, as measured by the market value of equity on the 12th month before the listing date.

Table 4 reports the results of the regressions for those observations where the corresponding switched and matched firms have GROWTH available. For the simple regressions, the annual EPS growth measure (GROWTH) is not statistically significant

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months before the observation month for NOA, NOS, and POS. Therefore, the EPS numbers used represent those that would have been available to analysts and institutions as of the date of the visibility measure.

Table 4—Regression of the Percentage Change in the Visibility Proxies Against the Annual EPS Growth Measure, Exchange Dummy Variable, and Size

This table examines whether the percentage change in visibility is attributable primarily to listing. Included are all stocks that have both the switched and matched GROWTH available (99 switched firms and 99 matched firms). The table reports the regression results for the following equation. The t-values are in parentheses.

$$\%\Delta \text{VISIBILITY}_i = \beta_0 + \beta_1 \text{GROWTH}_i + \beta_2 \text{EXCHANGE}_i + \beta_3 \text{SIZE}_i$$

Visibility Measure	n	β_0	Growth β_1	Exchange β_2	Size β_3	Adjusted R^2
Panel A: Number of Analysts Estimating the Next Fiscal Year's Earnings (NOA)						
NOA	198	0.58	-0.005			-0.004
		(5.42)**	(-0.43)			
NOA	198	0.28	-0.002	0.71	-0.0003	0.048
		(1.69)	(-0.19)	(3.46)**	(-0.839)	
Panel B: Number of Institutional Shareholders (NOI)						
NOI	198	1.96	-0.050			-0.003
		(2.92)**	(-0.66)			
NOI	198	1.06	-0.037	2.47	-0.002	0.007
		(1.01)	(-0.54)	(1.85)	(-0.74)	
Panel C: Percentage of Shares Held by Institutions (POS)						
POS	198	1.05	-0.008			-0.005
		(4.99)**	(-0.02)			
POS	198	0.60	-0.003	1.13	-0.001	0.030
		(1.85)	(-0.164)	(2.73)**	(-0.858)	
Panel D: Number of Citations in The Wall Street Journal (3-Month Period)						
NOC3	198	-0.01	-0.004			-0.010
		(-0.09)	(-0.248)			
NOC3	198	-0.04	-0.004	-0.10	0.0004	-0.010
		(-0.20)	(-0.251)	(-0.37)	(0.87)	
Panel E: Number of Citations in The Wall Street Journal (9-Month Period)						
NOC9	198	0.36	-0.02			-0.002
		(1.48)	(-0.76)			
NOC9	198	-0.12	-0.02	0.74	0.0006	0.002
		(-0.31)	(-0.624)	(1.52)	(0.64)	

* Significant at the 0.05 level

** Significant at the 0.01 level

$\%\Delta\text{VISIBILITY}_i$ = Percentage change in the visibility proxy for firm i from pre- to post-listing. Visibility proxies are NOA, NOI, and POS

GROWTH_i = Growth rate in earnings per share for firm i based on earning data from *Standard & Poor's Stock Reports*

EXCHANGE_i = A dummy variable where the value is 1 if firm i is listed and 0 if the firm is not listed

SIZE_i = Market capitalization (i.e., the market value of equity) for firm i on the 12th month before the listing change

at normal levels for any visibility proxy. An implication of this finding is that the observed increase in the visibility measure is not due to firm performance before listing,

at least based on the EPS growth measure used in this study. For the multiple regressions, the t-values for the exchange dummy variable (EXCHANGE) are statistically significant at the 0.01 level for both NOA and POS.[12] This finding lends support to the previously observed relationship between the listing change to the NYSE and increased visibility NOA and POS. Neither GROWTH nor SIZE is statistically significant at normal levels for any visibility measure. Again, GROWTH is not significant in explaining changes in visibility. Although Table 2 shows a direct association between several visibility measures (NOA, NOI, and POS) and size, an implication based on the regression results is that this relationship is not linear.[13]

Although not reported in Table 4, the regressions are rerun based on the five-year EPS growth measure. The results show that the exchange parameter is statistically insignificant for all dependent variables. The five-year EPS growth measure is also statistically significant at normal levels only for those regressions using NOI as the dependent variable.[14]

To test whether the different sample size or change in growth measure is driving the differences in the results, additional regression analysis is conducted. The sample is limited to those observations that are included in the smaller sample, but use the annual EPS growth as the growth measure. For the NOI regressions, the one-year EPS growth measure is insignificant, which contrasts with a statistically significant NOI using the alternative five-year average EPS growth measure. Using either EPS growth measure for NOI, however, the exchange parameter is positive but insignificant. The evidence suggests that differences in the statistical significance of the exchange parameter using the one-year EPS growth measure is attributable to differences in sample size, not model misspecification.

Summary and Conclusions

This study examines whether switching national exchanges is related to increases in visibility. Although managers of AMEX firms cite improved visibility as an important motive for switching to the NYSE, no empirical research exists on this topic. This study provides evidence that changes in the visibility proxies differ significantly

12 NOI is statistically significant at the 0.10 level.

13 Another proxy measure used in the regression analysis is a prior-to-change market-to-book (M/B) ratio. Using the M/B ratio instead of the annual EPS growth measure results in a smaller sample size (188 versus 198). The results of the regressions using these different growth measures are qualitatively similar in most respects. For the simple regressions, the M/B ratio is not statistically significant at the 0.05 level, except POS. For the multiple regressions, the M/B ratio is also not statistically significant at normal levels for any of the visibility proxies. EXCHANGE is statistically significant at the 0.01 level for NOA and NOC9, at the 0.05 level for NOS, and at the 0.10 level for NOI. SIZE is not statistically significant at normal levels for any visibility proxy. These results are available from the authors upon request.

14 The regression results using the five-year average growth measure are available from the authors upon request.

between firms moving from the AMEX to the NYSE and the matched sample of firms remaining on the AMEX. For the total sample, AMEX-to-NYSE switches are related to visibility gains in terms of the number of analysts estimating the firm's next fiscal year's earnings (NOA), the number of institutions owning shares in the firm (NOI), the percentage of shares held by institutions (POS), and the number of citations of a firm in a news article appearing in *The Wall Street Journal* (NOC) for the nine-month period (t_{-4} to t_{-12} compared with t_{+4} to t_{+12}) around the listing ($t = 0$).

Dividing the sample into matched pairs of small, medium, and large firms, as measured by the market value of equity, provides additional insights. Firms in all three size groups experience significant increases in NOA, NOI, and POS. Media visibility (NOC) also increases for the three size groups between the nine-month period before (t_{-4} to t_{-12}) to after (t_{+4} to t_{+12}) the AMEX-to-NYSE switches. This finding does not necessarily imply that the news coverage is favorable. The regression results, however, suggest that the relationship between size and changes in visibility is not strictly linear.

Other explanations exist for increases in visibility surrounding listing besides the actual listing. The regression results do not support the alternative explanation that past performance, as measured by the annual EPS growth measure, helps to explain the visibility gains associated with listing. The regression statistics show a significant relationship between the exchange variable and visibility gains in NOA and POS, but not NOI and NOC.

The empirical evidence provides some support for the conventional wisdom that listing on the NYSE offers greater visibility than remaining on the AMEX, especially when measuring visibility by NOA and POS. Such evidence may help managers make better decisions about moving their firm's trading location from the AMEX to the NYSE. This study also adds to the modest amount of academic research on auction market switches.

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