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The Puzzle in Post-Listing Common Stock Returns

JOHN J. McCONNELL and GARY C. SANGER*

ABSTRACT

Prior studies indicate that common stocks tend to earn negative returns immediately following listing on the NYSE. The authors document the phenomenon in detail and investigate a number of possible explanations. No full explanation is discovered, although several are ruled out.

A NUMBER OF STUDIES have examined common stock returns around the time at which the stocks became listed on a major stock exchange. These studies cover a variety of time periods and employ a variety of empirical methodologies, but they reveal two common patterns in stock returns. First, stocks appear to rise in price immediately prior to listing. Second, stock prices appear to decline immediately thereafter. For example, Ule [26] examines a sample of twenty-nine over-the-counter (OTC) stocks that listed on the New York Stock Exchange (NYSE) or the Curb Exchange over the period 1934 through 1937. He compares monthly stock price changes with changes in an appropriate industry index over a six-month period prior to and following listing. Ule reports that the prices of the stocks in his sample increased relative to their respective industry indexes prior to listing and fell off subsequently. Merjos [16, 17, 18], Van Horne [27], Goulet [9], and Ying, Lewellen, Schlarbaum, and Lease [30] examine various different samples of stocks that became listed on the NYSE or the American Stock Exchange (AMEX) during the 1960's. Although these authors use a variety of analytic techniques, they obtain results that are similar to those of Ule. Finally, Sanger and McConnell [22] investigate a comprehensive sample of 319 over-the-counter stocks that listed on the NYSE over the period 1966 through 1977. In addition to analyzing the full time period, they divide their sample into pre- and post-NASDAQ (i.e., pre- and post-February 1971) subsets. Regardless of the time period considered or the methodology used, they document that stocks, on average, earn positive abnormal returns prior to listing and negative abnormal returns over the four- to six-week period immediately following listing.

The documented positive abnormal returns prior to listing typically are attributed to the 'value' associated with a major stock exchange listing.[1] However, no

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[1] Sanger and McConnell [22] find that stocks earn positive abnormal returns over a 52-week period prior to the announcement of an impending listing. They attribute this run-up in price to an ex post selection bias—companies that do well decide to have their stocks listed. They also find that stocks earn positive abnormal returns in the announcement week and over the period between the announcement of the impending listing and the actual listing week. They attribute these excess returns to the value associated with a listing on the NYSE. The value associated with a major exchange listing typically is attributed to the greater 'liquidity' that supposedly accompanies such a listing.

satisfactory explanation has been offered for the negative stock returns that occur over the four- to six-week period following listing, even though this pattern of negative abnormal stock returns has been observed in every previous study of stock exchange listings.

At least superficially, the negative stock returns following listing clearly are incompatible with any version of the efficient capital market hypothesis. The knowledge that a stock is about to become listed on an exchange is widely known at least several weeks and sometimes several months before listing actually occurs, and evidence of the negative returns following listing appeared in print almost fifty years ago.

In this paper, we examine further the puzzling pattern in post-listing common stock returns. We first investigate the extent to which the post-listing negative stock returns have persisted through time and across different classes of securities. We find that the negative stock returns immediately following listing are pervasive. For 2482 stocks that listed on the NYSE over the period 1926 through 1982, the average raw return over the first full month following listing is −0.78% and the average market-adjusted return is −1.45%. Furthermore, with the exception of the period 1976 through 1980, the average first-month market-adjusted return is negative over every nonoverlapping five-year interval from 1926 through 1980 and over the two-year period 1981 through 1982.

We then investigate several possible explanations for the observed pattern of stock returns and, although we fail to discover a satisfactory explanation for the results, several possible explanations are ruled out. First, the results are not time period specific, and they are not due to a few outlier observations. Second, the negative returns immediately following listing are not due to the original trading locale of the newly listed stocks; OTC, Curb/AMEX, and regional-exchange-listed stocks all exhibit negative average returns immediately after listing on the NYSE. Third, the results are not due to the peculiarities of the exchange on which the stocks become listed. Over-the-counter stocks initially earn negative average returns whether they become listed on the NYSE or the AMEX. Fourth, the negative post-listing returns are not due to the issuance of new stock immediately following listing. The evidence indicates that companies that issue new stock following listing tend to be those that experience positive returns immediately after listing. Fifth, the negative returns are not due to insiders 'dumping' the stock after listing. Indeed, for the period 1973 through 1978, in those companies in which insider sales exceeded insider purchases, the average first-month (raw and market-adjusted) return was positive. Finally, the results do not appear to be due to the 'correction' of an 'overreaction' that occurred on the announcement of the impending listing. The correlation between returns immediately prior to and immediately after listing is not significantly different from zero.

The remainder of the paper is organized as follows. Section I presents the methodology, data, and initial results. Section II examines explanations for negative post-listing returns that stem from data peculiarities. Section III examines several ad hoc explanations for negative post-listing stock returns. Finally, Section IV briefly concludes the paper.

I. Methodology, Data, and Initial Results

In the analysis that follows, we examine the returns of common stocks following the date on which they become listed on either the NYSE or the AMEX. For results based upon monthly returns, except where noted, the sample includes all common stocks that became listed on the NYSE over the period January 1926 through December 1982. In this analysis, securities' returns are obtained from the monthly returns file constructed at the Center for Research in Security Prices (CRSP) at the University of Chicago. For results based upon daily returns, the sample includes all common stocks that became listed on either the NYSE or the AMEX over the period July 1962 through December 1982. The CRSP daily returns file provides the data used here.

Securities' returns are analyzed over time periods defined relative to the date of listing on an exchange. We first examine average raw returns. The average raw return for time period t following listing is computed as

$$R_t = \sum_{i=1}^{N_t} R_{it}/N_t, \qquad t = 1, \cdots, T, \tag{1}$$

where

R_{it} = return on common stock i in period t following listing and

N_t = number of stocks with valid returns in period t following listing.

For the purpose of testing hypotheses, we employ the market-adjusted-returns procedure described in Brown and Warner [5, 6]. Average market-adjusted returns are computed as

$$MAR_t = \sum_{i=1}^{N_t} (R_{it} - R_{mti})/N_t \qquad t = 1, \cdots, T, \tag{2}$$

where R_{mti} = return on a market index in period t following listing of stock i, and R_{it} and N_t are defined as above. To adjust monthly security returns for market movements, we use an equally weighted index that includes all NYSE common stocks. To adjust daily returns for market movements, we use an equally weighted index that includes all NYSE and all AMEX common stocks.[2]

The statistical significance of the average market-adjusted return in each event-related month is determined by a cross-sectional t-statistic defined as

$$t_t = \frac{MAR_t}{\left(\sum_{i=1}^{N_t} \frac{(R_{it} - R_{mti})^2}{N_t - 1}\right)^{1/2}} \times (N_t)^{1/2}, \tag{3}$$

where all terms are as defined previously.

Table I displays the average monthly raw returns and the average monthly market-adjusted returns for the first twelve months following listing for 2482

[2] An equally weighted index is employed because Brown and Warner [5] show that, for a randomly selected portfolio of securities, market-adjusted returns are upward biased when a value-weighted index is used as a benchmark.

Table I

Average Monthly Raw Returns and Average Monthly Market-Adjusted Returns following Listing for 2482 Common Stocks That Listed on the NYSE over the Period 1926–1982

Number of Months following Listing	Average Raw Return (Percent)	Average[a] Market-Adjusted Return (Percent)	*t*-Statistic[b]
1	−0.78	−1.45	−7.02*
2	0.12	−0.59	−2.99*
3	0.51	−0.07	−0.35
4	0.22	−0.54	−2.79*
5	0.36	−0.25	−1.31
6	0.71	−0.14	−0.70
7	0.72	−0.18	−0.86
8	0.52	−0.10	−0.47
9	0.40	−0.11	−0.54
10	0.67	−0.12	−0.61
11	0.24	−0.18	−0.90
12	0.19	−0.22	−1.10

[a] In this and subsequent tables, the market-adjusted return is calculated according to equation (2) using the appropriate equally weighted market index.

[b] *t*-Statistic tests the null hypothesis that the average market-adjusted return is equal to zero.

* Significant at the .01 level.

common stocks that listed on the NYSE over the period 1926 through 1982.[3] Because the CRSP monthly file contains month-end prices only, the first-month returns reported in Table I include the first full-calendar-month return following listing. The returns exclude any partial-month return following listing that occurred prior to the first full calendar month following listing.

The average raw return over the first month following listing is −0.78%. This is the only negative monthly raw return over the first year following listing, and, in fact, the next negative average raw return does not occur until the 340th month following listing! By that month, the sample has declined to 540 stocks and the raw return is −0.08%. Thus, the negative average raw return in the first month following listing is unusual in both its incidence and its magnitude.

It is conceivable, although highly unlikely, that the negative first-month

[3] New listings on the NYSE were identified by their appearance in the CRSP monthly files. In Table I and those that follow, actual sample sizes for individual months vary slightly from the sample size reported in the table. Variations occur for two reasons. First, some stocks have missing returns in certain months. For example, in the first month following listing, 17 of the total sample of 2482 stocks had missing returns, leaving 2465 for the actual calculations. Second, stocks may drop out of the sample either because their record ends (e.g., by merger or delisting) or because they listed on the NYSE within 12 months of December 1982, when the returns series ends. (For example, firms listed in November 1982 appear in the sample for the first month following listing but then drop out in subsequent months.) Variations in actual sample sizes are minor over the first 12 months following listing. To conserve space in the tables that follow, only the initial total sample sizes are reported.

average raw return is due to overall negative market movements that, by happenstance, may have occurred following listing. However, the negative market-adjusted returns reported in Table I indicate that that is not the case. The first-month average market-adjusted return is −1.45%.

With a *t*-statistic of −7.02, the null hypothesis of a zero-average market-adjusted return in the month following listing is strongly rejected. The initial negative returns experienced by stocks following listing are not due to negative overall market movements.[4] Interestingly, Table I also indicates that the average market-adjusted returns in both months 2 and 4 following listing are statistically significantly negative, although their magnitudes are much smaller than the magnitude of the negative average return in the first month. After the fourth month, the average market-adjusted returns continue to be predominantly negative, but none are statistically negative at usual levels of significance.

It is possible that the test statistics are biased due to a lack of independence among returns. We examine 2482 securities that listed on the NYSE over a 685-month period, for an average of 3.6 listings per month. Although the listings do not cluster heavily in calendar time, we employed the Jaffe [13]-Mandelker [14] calendar-time portfolio procedure to verify the results reported in Table I. The average market-adjusted returns for the first and second months following listing are −1.45% and −0.51%, respectively. The corresponding *t*-statistics are −7.41 and −2.33. Results for subsequent months are similar to those reported in Table I. Hence, a lack of independence among security returns is not a problem for our data.

II. Explanations for Negative Post-Listing Stock Returns: Data Peculiarities

The data indicate that, over the entire period 1926 through 1982, average stock returns have been negative over the period immediately following listing on the NYSE. We now turn to some possible explanations of this phenomenon. These explanations can be grouped into two broad categories. The first category encompasses explanations having to do with peculiarities, inaccuracies, or errors in the data. These explanations, if they are sustained by the data, imply that the observed negative post-listing stock returns are still consistent with the concept of an efficient capital market because they preclude the existence of a profitable trading rule. The second category encompasses explanations that have their origins in ad hoc theorizing or 'streetlore.' These explanations may be sustained

[4] Under the null hypothesis of no abnormal performance, market-adjusted returns are assumed to be drawn independently from a normal distribution with a zero mean. The market-adjusted-return technique makes no explicit adjustment for risk differences among securities. Implicitly, this technique assumes that all securities have betas equal to unity. In previous studies of stock exchange listings, Sanger and McConnell [22] and Reints and Vandenberg [21] have shown the systematic risks of newly listed stocks to be relatively stable with sample average betas slightly greater than one. Thus, the use of market-adjusted returns, if anything, biases post-listing abnormal returns upward and biases *t*-statistics toward zero. One advantage of not adjusting for systematic risk is the avoidance of introducing a survivorship bias by requiring a time series of post-listing returns for the purpose of computing betas.

by the data, but they are still inconsistent with the concept of an efficient capital market because they leave intact an apparently profitable trading rule. In this section, we consider explanations that fall into the former category. In the following section, we consider explanations that fall into the latter category.

A. Negative Returns Are Due to a Few Peculiar Subperiods

One possible explanation for the negative average stock returns immediately following listing is that they are due to a single (or a few) unusual time period(s). To consider this possibility, average monthly returns following listing were calculated over every nonoverlapping five-year interval from January 1926 through December 1980 and over the two-year interval from January 1981 through December 1982. The average raw returns and the average market-

Table II

Average Monthly Raw Returns and Average Monthly Market-Adjusted Returns following Listing for 2482 Common Stocks That Listed on the NYSE during Various Subperiods over the Period 1926–1982

Time Period	Sample Size	Number of Months following Listing	Average Raw Return (Percent)	Average Market-Adjusted Return (Percent)	t-Statistic[a]
1926–1930	339	1	−0.84	−0.44	−0.66
		2	−0.86	−0.39	−0.66
1931–1935	68	1	−0.14	−1.47	−0.95
		2	1.36	−2.70	−1.66
1936–1940	136	1	−2.13	−1.81	−2.02*
		2	−2.50	−1.83	−1.73
1941–1945	100	1	0.22	−2.79	−3.47**
		2	2.72	0.52	0.49
1946–1950	179	1	−1.50	−1.26	−1.99*
		2	−0.96	−1.11	−2.17*
1951–1955	106	1	−0.39	−1.10	−1.54
		2	0.66	−0.96	−1.48
1956–1960	176	1	−1.69	−1.98	−3.15**
		2	0.42	0.00	0.00
1961–1965	303	1	−0.63	−2.24	−4.44**
		2	0.44	−0.71	−1.40
1966–1970	358	1	−1.23	−1.72	−3.17**
		2	0.58	−0.10	−0.20
1971–1975	348	1	−1.57	−2.11	−3.46**
		2	−0.66	−0.54	−1.00
1976–1980	261	1	2.15	0.30	0.46
		2	1.37	−0.58	−0.99
1981–1982	108	1	−1.39	−1.47	−1.36
		2	1.23	−0.43	−0.41

[a] t-Statistic tests the null hypothesis that the average market-adjusted return is equal to zero.

*Significant at the .05 level.

**Significant at the .01 level.

adjusted returns for the first two months following listing are displayed in Table II along with the sample size for each subperiod examined.

The average raw return in the first month following listing is negative in ten of the twelve periods examined. The two exceptions are the periods 1941 through 1945 and 1976 through 1980. The average market-adjusted return is negative in all but the period 1976 through 1980. The *t*-statistics indicate that the average market-adjusted return is statistically significantly negative in seven of the twelve periods. Thus, it appears that negative initial returns are not due to an unusual time period; rather it is unusual for the first monthly average return to be positive.

The same prevalence of negative returns is not quite as apparent in the second month following listing. In the second month following listing, four of the twelve average raw returns are negative and ten of twelve market-adjusted returns are negative. The *t*-statistics indicate that one of the average market-adjusted returns is negative at the .05 level of significance.

The evidence indicates that the negative returns in the first month following listing are not due to a single (or a few) unusual time period(s). The evidence is not quite as strong in the second month following listing, but it does suggest that the below-market performance of stocks following listing is not limited to the first month following listing, even though negative average raw returns following listing are unusual after the first month.

B. Negative Returns Are Due to a Few Outlier Observations

Although negative average returns following listing are not restricted to a few subperiods, it is still possible that negative average returns are due to a relatively small number of large negative outlier returns that are spread randomly throughout the time period analyzed. To consider this possibility, we recomputed average raw and market-adjusted returns following listing after deleting returns greater than +20% and less than −20%. For the first month following listing, 195 securities with large outlier returns were dropped from the full set of 2482 securities. This procedure reduced the average raw return from −0.78% to −1.34%. Similar reductions in average returns are observed in subsequent months following listing. Returns adjusted for market movements behave similarly. Apparently, then, it is positive outlier returns that outweigh negative outlier returns.

As a second method of determining the pervasiveness of negative post-listing returns, we computed the percentage of negative raw and market-adjusted returns in the months immediately following listing and also in a 'comparison period' that encompasses months 13 through 72 following listing. Table III presents the results.

According to the table, 56% of the raw returns and 62% of the market-adjusted returns are negative in the first month following listing. Additionally, if we assume that the comparison period reflects 'normal' returns for our sample of securities, the first two months following listing contain more negative returns than expected under the null hypothesis of equal performance in the post-listing and comparison periods. To test the significance of these results, a nonparametric generalized sign test described in Bradley [4, pp. 167–70] is employed. In this

Table III

Fraction of Negative Raw Returns and Negative Market-Adjusted Returns following Listing for 2482 Common Stocks That Listed on the NYSE over the Period 1926–1982

Number of Months following Listing	Fraction of Negative Raw Returns	Fraction of Negative Market-Adjusted Returns[a]
1	0.56	0.62**
2	0.52	0.57**
3	0.50	0.55
4	0.50	0.56*
5	0.49	0.53
6	0.48	0.56*
7	0.48	0.53
8	0.49	0.53
9	0.50	0.54
10	0.48	0.53
11	0.50	0.54
12	0.51	0.55
13–72	0.47	0.54

[a] Test statistic tests the null hypothesis that the fraction of negative returns in a sample month is equal to the fraction of negative returns during a comparison period. See Bradley [4] for a description of the test.

*Significant at the .05 level.

**Significant at the .01 level.

test, the fraction of negative returns observed in the comparison period is used as a benchmark of normal behavior. The test statistic employed is asymptotically normally distributed.

The value of the test statistic for the first month following listing is −7.97. For the second month following listing, the test statistic is −2.99. Thus, negative performance over these two months, when measured by percentage of negative market-adjusted returns, is highly significant. The fraction of negative returns in months 3 through 12 is closer to the fraction estimated for the comparison period. Over this period, the null hypothesis can be rejected at the .05 level of significance in the fourth and sixth months following listing. Thus, the nonparametric test results also indicate that the negative average post-listing returns are not due to a few outlier observations.

C. Negative Returns Are Due to Biases in the First Trading Price

It could be that the apparent negative returns following listing are due to biases in the initial trading price that is recorded after a stock becomes listed. For example, it could be that the exchange specialist initially inflates his or her ask price as a protective mechanism until he or she determines the equilibrium trading range of the stock. Once the market maker gets a 'feel' for the market, the price immediately drops to its normal trading range. If this were true, it could

explain negative returns immediately following listing. The problem with this explanation is that, for any stock that trades reasonably actively, the adjustment period should be reasonably short, requiring at most a few days, whereas the data that we have analyzed to this point encompass the first full calendar month of trading following listing. Prior to the first full calendar month of trading, most stocks already have been trading for several days or weeks on the exchange.

This explanation does, however, beg the question as to what stock returns were over the first partial month following listing but prior to the first full calendar month following listing. This issue can be examined with the CRSP daily returns data. Beginning in July 1962, the CRSP daily returns file contains daily returns for each trading day following listing for each stock that listed on either the NYSE or the AMEX. With these data, we calculated the first partial-month return for each stock that listed on the NYSE over the period July 1962 through December 1982. This return is calculated from the first (closing) trade price after a stock becomes listed on the exchange through the end of the calendar month in which the listing occurs. Market-adjusted returns also are calculated for each stock for the first partial month following listing. The average of the first partial-month returns is then computed for 1224 stocks that listed on the NYSE over the period July 1962 through January 1982.[5]

The average number of trading days in the first partial month is 10.34. In a typical month there would be approximately twenty to twenty-two trading days. If new listings were spread uniformly over the month, the average number of trading days would be approximately ten or eleven in the first partial month. Apparently, then, new listings do not cluster near the beginning or the end of the listing month.

The average first partial-month raw return is −1.34%, and the average market-adjusted return is −1.55%. With a t-statistic of −6.43, the null hypothesis of a zero market-adjusted return can be rejected at the .01 level of significance.[6] If the first partial-month return is combined with the first full-month return in Table I, the results indicate that stocks, on average, lose approximately 2.1% of their value in the first four to eight weeks following listing. In comparison with the market return, stocks lose approximately 3.0% in the first four to eight weeks following listing.

[5] For stocks that became listed on the last day of a given calendar month, the first return in the CRSP monthly file includes the first daily return following listing. Hence, for this subset of new listings, there is no first partial-month return. Over the period July 1962 through December 1982, 1224 of the 1295 NYSE listings had first partial-month returns before being picked up in the CRSP monthly file.

[6] The number of days in the first partial month differs across securities. Thus, the average first partial-month return can be interpreted as the return to a portfolio that invests equal amounts in each newly listed stock on the day of listing and sells each stock on the last day of the calendar month of listing. The cross-sectional t-statistic, computed as follows, avoids heteroscedasticity by adjusting sample variances for differences in the number of days in each security's partial month:

$$t = \frac{(1/N)\sum_{i=1}^{N}\sum_{t=1}^{T_i}(R_{it} - R_{mti})/T_i^{1/2}}{\left(\sum_{i=1}^{N}\frac{(R_{it} - R_{mti})^2}{N-1}\right)^{1/2}} \times N^{1/2},$$

where T_i is the number of days in the first partial month for security i and all other terms are as defined above.

Of course, examination of the first partial month does not rule out the possibility that some form of market-maker adjustment occurs during the first day or the first few days following listing. To consider that possibility, average daily returns were computed for the first thirty days following listing. There is no obvious pattern in the daily returns. As an example, average daily raw returns and average daily market-adjusted returns are presented in Table IV for the first ten trading days following listing for all stocks that listed on the NYSE over the period July 1962 through December 1982.

The first daily raw return is negative, but the market-adjusted return is not statistically significantly different from zero. The second daily raw return is positive, but, again, the market-adjusted return is not statistically significantly different from zero. Over the next eight days, each of the average raw returns is negative, and, on seven of the eight days, the market-adjusted returns are negative and statistically significantly different from zero. Additionally, over the first thirty trading days following listing, twenty-one of the average raw returns are negative. These results buttress further the point (if it is needed) that negative post-listing returns are not due to a market-maker adjustment during the first few days following listing.

III. Explanations for Negative Post-Listing Stock Returns: Streetlore

A. Negative Post-Listing Stock Returns Are Due to the Loss of Market-Maker Support

One explanation for negative returns immediately following listing, which has been offered by supporters of the over-the-counter market, is that these returns result from the loss of market-maker support that occurs when an OTC stock

Table IV

Average Daily Raw Returns and Average Daily Market-Adjusted Returns following Listing for 1295 Stocks That Listed on the NYSE over the Period July 1962–December 1982

Number of Days following Listing	Average Raw Return (Percent)	Average Market-Adjusted Return (Percent)	t-Statistic[a]
1	−.0117	−.0453	−0.53
2	.1545	.0793	0.90
3	−.2455	−.3104	−4.20**
4	−.1585	−.2155	−2.72**
5	−.3110	−.3222	−4.61**
6	−.2594	−.2958	−4.25**
7	−.0840	−.1347	−1.94
8	−.1148	−.1558	−2.24*
9	−.1122	−.1768	−2.58**
10	−.1538	−.1955	−2.94**

[a] t-Statistic tests the null hypothesis that the average market-adjusted return is equal to zero.

*Significant at the .05 level.

**Significant at the .01 level.

becomes listed on an exchange. This argument has its origin in the difference in market structure between the organized exchanges and the over-the-counter market. When a stock is listed on an exchange, transactions are handled by a single specialist who is responsible for making a market in the security. In the OTC market, an unlimited number of brokers and dealers may make a market in the security. It has been argued that the OTC market makers support the price of the stock until it becomes listed. When this support disappears, the stock price falls. While this argument is convenient for supporters of the OTC market system, it does not explain how the OTC market makers manage to support the price above its "equilibrium" price, and it does not identify the forces that cause the price to fall once the OTC market makers no longer make a market in the stock.

Nevertheless, to determine the validity of this argument, the sample of new listings on the NYSE was classified according to whether the stock was previously traded in the OTC market, was listed on the Curb/AMEX exchange, or was listed on one of the regional exchanges.[7] Average monthly returns were calculated for each subsample for all NYSE listings over the period 1926 through 1982. Additionally, the average first partial-month return was calculated for all OTC-to-NYSE listings and for all AMEX-to-NYSE listings over the period July 1962 through December 1982. Because there were only thirty-one regional-to-NYSE listings over the period 1962 through 1982, first partial-month returns were not computed for this sample. The results are reported in Table V.

In each sample, the average first partial-month raw return and the average first full-month raw return are negative, and the average market-adjusted return is statistically less than zero at the .01 level of significance for both AMEX-to-NYSE listings and OTC-to-NYSE listings. The first-month market-adjusted returns are not statistically significantly negative, however, for the regional-exchange-to-NYSE listings, even though the raw return for this sample is slightly more negative than is the raw return for the other two samples. The lack of significance of the negative return for the regional-exchange-to-NYSE sample may be due to the much smaller sample size employed. For all three samples, average monthly market-adjusted returns tend to be negative over the first full year following listing, but typically they are not statistically different from zero.

Because transactions on the Curb/AMEX and the regional exchanges are conducted through a specialist in a manner similar to the NYSE, the results in Table V indicate that negative post-listing stock returns occur regardless of whether the stock loses OTC market-maker support.[8] More interestingly, per-

[7] A search was made to establish the prior trading locale for the 2482 NYSE listings. Source documents for this search included the *Bank and Quotation Record*, the *Commercial and Financial Chronicle*, *Standard and Poor's Monthly Stock Guide*, *Moody's Manuals*, and the *Wall Street Journal*. Original trading locations could not be determined for all stocks in the sample. Thus, the total number of securities that are identified as being previously traded on the OTC, AMEX, or regional exchanges is less than the total sample of 2482. Some relatively large privately held firms may 'go public' and immediately be granted listed status. (This is relatively infrequent, but Communications Satellite Corp. is an example of one such company.) Some new listings result from spinoffs. Foreign listings and technical listings make up the balance of the discrepancy.

[8] In Table V, the sum of the first partial-month and first full-month market-adjusted returns for the OTC-to-NYSE sample is −3.59 percent, as compared with −2.56 percent for the Curb/AMEX-

Table V

Average Monthly Raw Returns and Average Monthly Market-Adjusted Returns following Listing for 1139 Over-The-Counter Stocks, 940 Curb/AMEX Stocks, and 154 Regional Exchange Stocks That Listed on the NYSE over the Period 1926–1982

Number of Months following Listing	Average Raw Return (Percent)	Average Market-Adjusted Return (Percent)	t-Statistic[a]
A. 1139 OTC Stocks That Listed on the NYSE			
First Partial[b]	−1.52	−1.79	−5.77**
1	−1.09	−1.80	−6.11**
2	0.39	−0.50	−1.73
3	0.48	0.02	0.08
4	0.58	−0.22	−0.83
5	0.39	−0.26	−0.99
6	1.43	0.26	0.92
7	1.19	0.07	0.24
8	0.80	0.03	0.11
9	0.56	0.04	0.13
10	0.56	−0.08	−0.30
11	0.82	0.21	0.75
12	0.63	−0.05	−0.17
B. 940 Curb/AMEX Stocks That Listed on the NYSE			
First Partial[b]	−1.23	−1.35	−2.75**
1	−0.68	−1.21	−3.60**
2	−0.05	−0.51	−1.55
3	0.30	−0.41	−1.28
4	−0.49	−0.87	−2.82**
5	0.06	−0.42	−1.22
6	0.12	−0.43	−1.25
7	0.49	−0.15	−0.41
8	−0.22	−0.55	−1.60
9	0.00	−0.39	−1.14
10	1.00	0.09	0.26
11	−0.54	−0.65	−1.98
12	−0.09	−0.35	−1.02
C. 154 Regional Stocks That Listed on the NYSE[c]			
1	−1.14	−1.08	−1.20
2	−0.15	−0.72	−1.10
3	1.46	0.88	0.89
4	−0.20	−1.46	−1.84
5	−0.22	−0.78	−1.15
6	−2.23	−1.77	−2.47*
7	−1.94	−2.15	−3.02**
8	0.30	−0.51	−0.64
9	0.17	−0.28	−0.32
10	−0.04	−0.76	−1.04
11	0.67	0.90	0.88
12	−1.44	−0.20	−0.27

[a] t-Statistic tests the null hypothesis that the market-adjusted return is equal to zero.

[b] First partial-month returns are calculated only for new listings over the period July 1962–December 1982. For OTC-to-NYSE listings, $N = 693$. For AMEX-to-NYSE listings, $N = 414$. Stocks that became listed on the last day of a calendar month do not have first partial-month returns and are thus not included in these samples.

[c] Because of the small sample size, the average first partial-month return was not calculated for regional-exchange-to-NYSE listings.

*Significant at the .05 level.

**Significant at the .01 level.

haps, the data indicate that negative average post-listing stock returns occur regardless of the original trading locale of the stock. Hence, the negative returns are not likely to be caused by minor differences in the institutional characteristics of the original market.

B. Negative Post-Listing Stock Returns Are Due to Peculiarities of the NYSE

Another possible explanation for the negative post-listing returns is that they are not just due to the event of becoming listed on an exchange, but rather they are caused by some peculiarity of the NYSE. To investigate that possibility, monthly returns and first partial-month returns following listing were calculated for 1537 stocks that became listed on the AMEX over the period July 1962 through December 1982. This shorter time period is used to investigate new listings on the AMEX because the CRSP returns file contains AMEX returns for this period only. Monthly returns and first partial-month returns for each AMEX listing were computed by compounding daily returns. The results are reported in Table VI. These results are very similar to those reported for the NYSE listings. Both the first partial-month and the first full-calendar-month average raw returns are negative, and, for both periods, the average market-adjusted return is statistically significantly less than zero. Apparently, then, negative stock returns following listing are not due to peculiarities associated

Table VI

Average Monthly Raw Returns and Average Monthly Market-Adjusted Returns following Listing for 1537 Common Stocks That Listed on the AMEX over the Period July 1962–December 1982

Number of Months following Listing	Average Raw Return (Percent)	Average Market-Adjusted Return (Percent)	t-Statistic[a]
First Partial[b]	−1.06	−1.41	−4.23**
1	−0.81	−1.87	−3.45**
2	0.45	−0.54	−1.51
3	1.17	0.18	0.49
4	0.13	−1.01	−3.06**
5	0.40	−0.66	−2.06*
6	0.38	−0.68	−2.08*
7	0.70	−0.45	−1.28
8	0.87	−0.55	−1.80
9	0.13	−0.89	−2.61**
10	0.57	−0.65	−2.00*
11	0.21	−0.99	−3.02**
12	0.19	−1.04	−3.22**

[a] t-Statistic tests the null hypothesis that the market-adjusted return is equal to zero.

[b] First partial-month results are based on the 1467 AMEX listings that did not list on the last trading day of the month.

*Significant at the .05 level.

**Significant at the .01 level.

with the NYSE. Negative returns occur immediately following listing regardless of the exchange on which the stocks become listed.

C. Negative Stock Returns Are Due to Issues of New Stock Shortly after Listing

It is possible that managers believe that improved liquidity for the firm's stock in the secondary market is accompanied by a reduction in the issuance cost of new equity. Consequently, managers of firms that qualify for listing may decide to attain listed status prior to issuing additional shares. Indeed, in a survey of corporate managers, Goulet [9] discovered that one of the frequently mentioned motives for obtaining an exchange listing was the desire to issue new shares. Studies by Asquith and Mullins [1], Hess and Bhagat [11], Mikkelson and Partch [19], and Masulis and Korwar [15] report that announcements of new stock issues are associated with negative returns for the issuing company's common stock. The two leading explanations for this phenomenon are (a) that new equity issues signal negative information about the firm's prospects and (b) that the additional shares create an excess supply of securities that leads to downward pressure on the company's stock price.[9] In either case, if companies typically do issue new shares soon after achieving an exchange listing, this could explain the negative post-listing returns (although it would not explain the failure of market participants to forecast the new stock issues).

To examine the new-issues explanation of the negative post-listing stock returns, we examine stock returns conditional on changes in the number of new shares outstanding following listing. Firms are classified as having had a new issue (or not) if the number of shares outstanding reported in the CRSP monthly returns file increased by 50,000 or more (less than 50,000) within a twelve-month period following listing. A twelve-month time interval is used because CRSP updates annually the number of shares outstanding. Thus, for example, if a company issued new shares in February, the CRSP record would not indicate a change in shares outstanding until December of that year. Thus, using this procedure with the entire sample of 2482 firms that became listed on the NYSE over the period 1926 through 1982, post-listing returns are examined for two samples: those that are classified as having new issues and those that are classified as not having new issues.

The results are presented in Table VII. The table contains average raw returns and average market-adjusted returns for the first and second months following listing, along with the average monthly returns for the third through twelfth month following listing. Sample sizes also are reported.

Two interesting results are apparent in the table. The first is the relatively small number of companies that are classified as having new stock issues following listing. The second is that, contrary to the new-issues explanation of the negative post-listing returns, those firms classified as having new issues earn positive

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to-NYSE sample. It can be argued that this difference weakly supports the hypothesis that selling pressure by OTC market makers depresses post-listing prices.

[9] Harris and Gurel [10] and Schleifer [23] find evidence consistent with price pressure when stocks are added to or deleted from the S&P 500 Stock Index.

Table VII

Average Monthly Raw Returns and Average Monthly Market-Adjusted Returns following Listing for 2482 Common Stocks That Listed on the NYSE over the Period 1926–1982 Categorized by New Issue Activity following Listing

Time Interval following Listing	More than 50,000 New Shares Issued within 12 Months following Listing (Sample Size = 293)		Less than 50,000 New Shares Issued within 12 Months following Listing (Sample Size = 2189)	
	Average Raw Return (Percent)	Average Market-Adjusted Return[a] (Percent)	Average Raw Return (Percent)	Average Market-Adjusted Return[a] (Percent)
First Month	1.80	0.14 (0.22)	−1.13	−1.66 (−7.63)**
Second Month	1.49	−0.20 (−0.35)	−0.06	−0.64 (−3.06)**
Third through Twelfth Months	1.24	0.09 (0.42)	0.35	−0.23 (−2.02)*

[a] *t*-Statistic to test the null hypothesis that the average market-adjusted return is equal to zero is contained in parentheses.

*Significant at the .05 level.

** Significant at the .01 level.

average raw and market-adjusted returns in the first month following listing, and those companies classified as not having new issues experience statistically significant negative market-adjusted returns in both the first and second months following listing and over the third through twelfth months following listing. In other replications of this test not reported here, the definition of new issues was varied to include increases in shares outstanding ranging from 10,000 to 100,000. In no case were the basic conclusions changed.

The virtue of our procedure for examining the new-issues explanation of negative post-listing returns is its simplicity. This procedure allows us to examine all new listings over the period 1926 through 1982 relatively easily. It could be argued, however, that this procedure obscures the result that we are searching for because it does not identify specifically companies that announced new issues over the four- to six-week period following listing. However, given the pervasiveness of the effect, the relatively small number of firms experiencing significant increases in shares outstanding suggests that new issues cannot explain the negative post-listing stock returns. Nevertheless, to provide a more precise test of this conjecture, we searched the *Wall Street Journal Index* for public announcements of new stock issues or share authorizations by companies that became listed on the NYSE over the period 1973 through 1982. Of the 525 companies that became listed over this period, only forty-two announced new issues of stock or share authorizations over the two-month interval surrounding the date of listing. Average raw returns and average market-adjusted returns were calculated for the forty-two companies with announcements and for the 483 companies without announcements. The results are similar to those in Table

VII. For companies with announcements, the average first-month raw return is 1.16% and the average first-month market-adjusted return is 1.20% (t-statistic = 0.61). For companies without announcements, the average first-month raw return is 0.33% and the average first-month market-adjusted return is −0.96% (t-statistic = −1.82). Thus, the evidence is strongly contrary to the conjecture that new issues of common stock explain the post-listing puzzle in common stock returns.

D. Negative Stock Returns Are Due to Insiders 'Dumping' the Stock

A variation on the new-issues explanation is that 'insiders' with large holdings postpone sales of large blocks until the stock becomes listed. Insiders may be concerned that they will be required to offer substantial price concessions in order to sell a large block of stock in a relatively 'illiquid' market. In anticipation of the stock becoming listed, the insiders defer portfolio rebalancing until listing occurs. They then 'dump' their stock in the supposedly more liquid market that comes about as a result of the stock becoming listed on a major exchange. The sale of the large block creates excess supply, which, in turn, creates downward pressure on the stock's price.[10] If this line of reasoning were correct, it could explain the negative post-listing stock returns although it could not explain the inability of the market to anticipate this behavior on the part of insiders.

To investigate the insider-dumping explanation of negative post-listing returns, information on insider transactions was collected from the *Official Summary of Security Transactions and Holdings* for the 305 stocks that listed on the NYSE over the period January 1973 through December 1978.[11] Insider transactions were recorded for a period from one month before the month of listing through one month after the month of listing. Firms were then classified as having had net insider purchases or net insider sales over the three-month interval surrounding listing. A firm was placed in the net-insider-sales (purchases) category if the sum of shares sold (purchased) over the sample period exceeded the sum of all shares purchased (sold).[12] Post-listing returns were then analyzed for the two groups. The results are summarized in Table VIII.

Of the 305 firms examined, only forty-eight were classified as having net insider sales, while sixty-six were classified as having net insider purchases. Almost two thirds (191) of the companies experienced no insider trading activity whatsoever. Contrary to the insider-'dumping' explanation of negative post-listing returns, for the 'net-insider-sales' group, the first- and second-month

[10] Indeed, if large-block holders have some control over the firm, they may seek listing for the primary purpose of liquidating all or part of their holdings. Mikkelson and Partch [19] lend some credibility to this motivation for listing and to the argument that insider sales may cause downward price pressure. They find a significant negative stock return associated with secondary stock issues.

[11] The earliest year of the *Official Summary* that was available to us was 1973. Because data collection from this source is tedious, we arbitrarily stopped the search in 1978.

[12] A firm was classified as having no insider transactions even though a trade of 100 to 200 shares was reported on the actual listing date. It is common for company officers to participate in a ceremony on the exchange floor in which they make the first nominal trade in the stock on the day of listing. According to SEC rules, these trades must appear in the *Official Summary*, but they are unlikely to be of any significance.

Table VIII

Average Monthly Raw Returns and Average Monthly Market-Adjusted Returns following Listing for 305 Common Stocks That Listed on the NYSE over the Period 1973–1978 Categorized According to Volume of Insider Trading

Time Interval following Listing	Sample in Which Insider Sales Exceeded Insider Purchases (Sample Size = 48)		Sample in Which Insider Purchases Exceeded Insider Sales (Sample Size = 66)		Sample in Which No Insider Trades Were Reported (Sample Size = 191)	
	Average Raw Return (Percent)	Average Market-Adjusted Return[a] (Percent)	Average Raw Return (Percent)	Average Market-Adjusted Return[a] (Percent)	Average Raw Return (Percent)	Average Market-Adjusted Return[a] (Percent)
First Month	1.94	0.62	0.64	−1.33	−1.34	−2.04
		(0.33)		(−0.79)		(−2.46)*
Second Month	1.68	1.47	−1.22	−2.75	1.42	0.41
		(1.00)		(−2.11)*		(0.57)
Third through Twelfth Months	0.29	−0.63	1.32	0.29	0.87	0.02
		(−1.22)		(0.56)		(0.77)

[a] t-Statistic to test the null hypothesis that the average market-adjusted return is equal to zero is contained in parentheses.
*Significant at the .05 level.

average raw and market-adjusted returns are positive although not statistically significant. For the 'net-insider-purchases' group, the first-month average raw return is positive, while the second-month average raw return is negative and both the first- and second-month market-adjusted returns are negative. Only the second-month market-adjusted return is statistically significantly different from zero. Finally, only the 'no-insider-trading' group exhibits a negative average raw return in the first month following listing, and only for this sample is the market-adjusted return statistically significantly different from zero.

The results of this analysis lend no support to the insider-dumping explanation of negative post-listing stock returns. To the contrary, of the firms examined here, those that experienced net insider selling earned higher average returns following listing than those firms with either net insider purchases or no insider activity whatsoever. Although the sample sizes examined are relatively small and the calendar time period covered is limited, the simple preponderance of cases that experienced no insider trading activity indicates that insider selling cannot explain negative post-listing stock returns.[13]

E. Negative Stock Returns Are Due to a 'Correction' of an Initial Market 'Overreaction'

A common belief among practical market observers is that investors often overreact to the announcement of major corporate events. This initial 'overreaction' is then followed by an inevitable 'correction,' in which the security's price settles to its 'proper' level. The pattern of observed security prices around listing dates, in which stocks earn positive excess returns prior to listing and negative excess returns following listing, is, at least on average, consistent with this view of the world. The average pattern, however, is not sufficient to support this conjecture against the alternative explanation that stocks systematically increase in price prior to listing because of the benefits of listing, but then fall off randomly following listing. A more direct linkage between pre-listing excess returns and post-listing excess returns is required. That is, if the negative stock returns following listing represent a correction of the market's overreaction to the initial announcement, then stocks that earn the largest (smallest) price increases prior to listing should experience the largest (smallest) price declines following listing.

To test the correction-of-an-overreaction explanation of the negative stock returns following listing, pre-listing stock returns are regressed against post-listing stock returns for two samples: (a) 319 OTC-to-NYSE listings that occurred over the period January 1966 through December 1977 and (b) 446 AMEX-to-NYSE listings that occurred over the period July 1962 through December 1982.

The OTC-to-NYSE sample is described in Sanger and McConnell [22]. For this sample, pre-listing returns are measured over a time period that begins with the week in which a company applies for a NYSE listing and ends with the

[13] Sanger and McConnell [22] suggest that the sell-off of inventories by OTC market makers once listing occurs may be a cause of post-listing price declines. Since OTC market makers must report net changes in inventories to the SEC for publication in the *Official Summary*, the evidence here also does not support this explanation of negative post-listing stock returns.

listing week. The number of weeks encompassed by this interval varies across firms. On average, eight weeks elapse between the date on which a company applies for listing and the date on which it becomes listed. Post-listing returns are measured over the eight-week period following listing. The AMEX-to-NYSE sample was obtained directly from the CRSP daily returns file and includes all AMEX stocks with sufficient returns that listed on the NYSE over the period July 1962 through December 1982. For this sample, pre-listing returns are measured over the forty trading days up to and including the day of listing, and post-listing returns are measured over the forty trading days following listing. Both cumulative raw returns and cumulative market-adjusted returns are calculated for both samples.

The regression results are presented in Table IX. In no case are the post-listing returns significantly related to pre-listing returns. Additionally, in other regressions not reported here, pre- and post-listing returns were measured over various other intervals, and the regressions were re-estimated. In no case was the regression coefficient significantly different from zero at the .05 level.

As a further test of the overreaction hypothesis, securities were classified according to whether their cumulative returns prior to listing were positive or negative. This procedure is a crude way of separating securities that are most likely to have experienced a positive 'overreaction' to the news of an impending listing from those that are not. Pre-listing cumulative returns were calculated for

Table IX

Statistical Results for the Regression of Post-Listing Stock Returns on Pre-Listing Stock Returns for 446 AMEX Stocks That Listed on the NYSE over the Period July 1962–December 1982 and for 319 OTC Stocks That Listed on the NYSE over the Period January 1966–December 1977. Estimated Equation: Post-Listing Return = $A + B$ (Pre-Listing Return) + Error

Variable[a]	A	B	R^2	F[b]
A. OTC-to-NYSE Listings (N = 319)[c]				
Raw Returns	−0.033	0.002	0.000	0.002
	(−3.40)*	(0.04)		(0.968)
Market-Adjusted Returns	−0.042	−0.019	0.000	0.120
	(−5.17)*	(−0.35)		(0.730)
B. AMEX-to-NYSE Listings (N = 446)[d]				
Raw Returns	−0.005	−0.028	0.001	0.281
	(−0.52)	(−0.53)		(0.598)
Market-Adjusted Returns	−0.034	0.059	0.003	1.300
	(−4.64)*	(1.14)		(0.256)

[a] t-Statistics are in parentheses.

[b] Degrees of freedom = (1, N − 2); p-values are in parentheses.

[c] For OTC-to-NYSE listings, pre-listing returns are measured over the period that begins with the week in which an application for an exchange listing is filed and ends with the week of listing, and post-listing returns are measured over the eight-week period following the week of listing.

[d] For AMEX-to-NYSE listings, pre-listing returns are measured over the period from 39 trading days before listing through the listing day, and post-listing returns are measured over the period from the day following listing through 40 trading days following listing.

*Significant at the .01 level.

the sample of OTC-to-NYSE listings and for the sample of AMEX-to-NYSE listings over the same intervals as reported in Table IX. For each sample, cumulative returns were then calculated over the eight-week period following listing. The results are presented in Table X.

According to the 'correction-of-an-overreaction' explanation of negative post-listing stock returns, those securities that experience an overreaction prior to listing should decline in price following listing, whereas those securities that do not experience an overreaction prior to listing should earn non-negative returns following listing. For OTC-to-NYSE listings, the average post-listing cumulative returns, both raw and market-adjusted, are negative regardless of whether the pre-listing returns were positive or negative. For AMEX-to-NYSE listings, the post-listing cumulative raw return is negative only for the sample in which the average pre-listing cumulative return is positive. However, once returns are adjusted for market movements, the average post-listing cumulative return is negative regardless of whether the pre-listing cumulative return is positive or negative. In sum, none of the various tests performed provide much support for

Table X

Average Cumulative Raw Returns and Average Cumulative Market-Adjusted Returns for the First Eight Weeks following Listing for 319 OTC Stocks That Listed on the NYSE over the Period January 1966–December 1977 and for 446 AMEX Stocks That Listed on the NYSE over the Period July 1962–December 1982

Sample	Raw Returns		Market-Adjusted Returns	
	Sample Size	Post-Listing Cumulative Return (Percent)	Sample Size	Post-Listing Cumulative Return (Percent)
A. OTC-to-NYSE Listings[a]				
Stocks with Positive Cumulative Returns Prior to Listing	212	−3.52	202	−4.65
Stocks with Negative Cumulative Returns Prior to Listing	107	−2.71	117	−3.79
B. AMEX-to-NYSE Listings[b]				
Stocks with Positive Cumulative Returns Prior to Listing	298	−1.67	289	−3.05
Stocks with Negative Cumulative Returns Prior to Listing	147	1.32	156	−3.11

[a] For OTC-to-NYSE listings, pre-listing cumulative returns are measured over the period that begins with the week in which an application for listing is filed and ends with the week in which listing occurs.

[b] For AMEX-to-NYSE listings, pre-listing cumulative returns are measured over the period from 39 trading days before listing through the listing day. Returns were missing for one stock for the 40-day period following listing.

the correction-of-an-overreaction explanation for the puzzle in post-listing stock returns.[14]

IV. Conclusion

On average, stocks that became listed on a major exchange have experienced negative returns over the four- to six-week period following listing since at least 1926. This pattern of returns is vexing because of its persistence and because the data are not consistent with any obvious explanation. Unlike other security return anomalies, the puzzling pattern in post-listing stock returns cannot be due to the improper specification of an asset-pricing model. In the four- to six-week period following listing, stock prices, on average, actually decline in value. This pattern of returns is anomalous given any specification of the return-generating process.

[14] As a final look at the data, we investigated the relationship between post-listing stock returns and two other empirical regularities that previously have been observed in stock returns: the turn-of-year-effect and the size effect. We find that new stock listings do not cluster in January and that initial post-listing stock returns are negative regardless of the market values of the companies considered. An interesting ancillary result of this analysis is that newly listed companies are not necessarily 'small.' Approximately 40% of the companies listed on the NYSE over the period 1962 through 1982 ranked in the largest 50% of all NYSE companies at the time of listing.

REFERENCES

1. Paul Asquith and David W. Mullins. "Equity Issues and Stock Price Dilution." *Journal of Financial Economics* 15 (January/February 1986), 61–90.
2. *Bank and Financial Manual.* New York: Standard and Poor's, 1926–1982.
3. *Bank and Quotation Record.* New York: Dana, 1926–1982.
4. J. Bradley. *Distribution-Free Statistical Tests.* Princeton, NJ: Prentice Hall, 1968.
5. Stephen J. Brown and Jerold B. Warner. "Measuring Security Price Performance." *Journal of Financial Economics* 8 (June 1980), 205–58.
6. ———. "Using Daily Stock Returns: The Case of Event Studies." *Journal of Financial Economics* 14 (March 1985), 3–31.
7. *Commercial and Financial Chronicle.* New York: Dana, 1926–1982.
8. Richard Furst. "Does Listing Increase the Price of Common Stocks?" *Journal of Business* 49 (April 1970), 174–80.
9. Waldemar Goulet. "Price Changes, Managerial Actions and Insider Trading at the Time of Listing." *Financial Management* 3 (Spring 1974), 30–36.
10. Lawrence Harris and Eitan Gurel. "Price and Volume Effects Associated with Changes in the S&P 500: New Evidence for the Existence of Price Pressures." *Journal of Finance* 41 (September 1986), 815–29.
11. Alan C. Hess and Sanjay Bhagat. "A Test of the Price Pressure Hypothesis Using Announcement Data." Working Paper, University of Utah, 1985.
12. *Industrial Manual* New York: Moody's, 1926–1982.
13. Jeffrey F. Jaffe. "Special Information and Insider Trading." *Journal of Business* 47 (July 1974), 410–28.
14. Gershon Mandelker. "Risk and Return: The Case of Merging Firms." *Journal of Financial Economics* 1 (December 1974), 303–35.
15. Ronald W. Masulis and Ashok N. Korwar. "Seasoned Equity Offerings: An Empirical Investigation." *Journal of Financial Economics* 15 (January/February 1986), 91–118.

16. Anna Merjos. "Going on the Big Board: Stocks Act Better before Listing than Right Afterward." *Barron's* 43 (January 29, 1962), 5ff.
17. ———. "Like Money in the Bank: Big Board Listing, the Record Suggests, Is a Valuable Asset." *Barron's* 43 (July 8, 1963), 2.
18. ———. "Up on the Curb." *Barron's* 47 (May 1, 1967), 9ff.
19. Wayne H. Mikkelson and Megan Partch. "Valuation Effects of Security Offerings and the Issuance Process." *Journal of Financial Economics* 15 (January/February 1986), 31–60.
20. *Official Summary of Security Transactions and Holdings.* Washington, DC: U.S. Securities Exchange Commission, 1973–1978.
21. William Reints and Paul A. Vandenberg. "The Impact of Changes in Trading Location on a Security's Systematic Risk." *Journal of Financial and Quantitative Analysis* 10 (December 1975), 881–90.
22. Gary C. Sanger and John J. McConnell. "Stock Exchange Listing, Firm Value and Security Market Efficiency: The Impact of NASDAQ." *Journal of Financial and Quantitative Analysis* 21 (March 1986), 1–25.
23. Andrei Schleifer. "Do Demand Curves for Stocks Slope Down?" *Journal of Finance* 41 (July 1986), 579–90.
24. *Security Owner's Stock Guide.* New York: Standard and Poor's, 1933–1982.
25. *Transportation Manual.* New York: Moody's, 1926–1982.
26. Maxell G. Ule. "Price Movements of Newly-Listed Common Stocks." *Journal of Business* 10 (September 1937), 346–69.
27. James C. Van Horne. "New Listings and Their Price Behavior." *Journal of Finance* 25 (September 1970), 783–94.
28. *Wall Street Journal Index.* New York: Dow-Jones, Inc., 1973–1982.
29. *Weekly Bulletin.* New York: New York Stock Exchange, 1966–1977.
30. Louis K. W. Ying, Wilbur G. Lewellen, Gary G. Schlarbaum, and Ronald C. Lease. "Stock Exchange Listing and Securities Returns." *Journal of Financial and Quantitative Analysis* 12 (September 1977), 415–32.