

What Do They Know & When Do They Know It?
A Closer Look at Value Line Rank Changes

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Abstract

We investigate the stock price effects of upgrades in Value Line ranks around the time of earnings announcements. Contrary to the suggestion of previous work, Value Line rank upgrades often take place in the period preceding earnings announcements. These “leading” upgrades are associated with immediate stock price reactions and post-upgrade drifts that are at least as large as those for upgrades which quickly follow earnings announcements (i.e., “trailing” upgrades), even though the nearby earnings surprises are much smaller. The leading upgrades convey information useful in predicting the upcoming earnings surprise. They also appear to convey additional information that affects stock prices, but is separate from the earnings surprise. The post-upgrade drift associated with leading upgrades is not strongly correlated with the earnings surprise, suggesting that it is a separate phenomenon from post-earnings drift. We speculate that the Value Line upgrade serves as a certifying mechanism that testifies to the credibility and quality of the earnings stream of the upgraded firm.

The Value Line enigma, the tendency of stocks with high timeliness rankings from the Value Line Investors Survey to outperform stocks with low ranks, has long been interpreted as evidence that the Survey uncovers systematically useful information. More recently, Affleck-Graves and Mendenhall (1992) have suggested that Value Line rank revisions are a reaction to recent earnings surprises, and thus the enigma is merely a manifestation of post-earnings drift.¹ Peterson (1995) presents further evidence on the question of the Value Line’s usefulness for investors by examining the Survey’s “stock highlight” announcements, which do not tend to follow on the dates of earnings announcements. Stock highlights announcements, which are issued for only one stock each week, are associated with positive statistically-significant abnormal returns.

Taken together, Petersen’s (1995) and Affleck-Graves and Mendenhall’s (1992) evidence suggests that the broad set of Value Line recommendations may not provide independent information for investors,

¹ See Ball and Brown (1968), Bernard and Thomas (1989) among others.

but that more focused subsets of the Survey's recommendations could be useful. Given that Value Line's apparent success in predicting returns has long been regarded as a challenge to market efficiency, it is important to clarify whether the Value Line enigma is completely explained by the information in earnings.

To sort out this issue, we study two samples of Value Line timeliness rank revisions. We contrast the performance of rank-upgrade samples that are very likely and very unlikely, respectively, to be prompted by the public information in earnings announcements. The first sample is comprised of upgrades that occur shortly after an earnings announcement. These are almost certainly occasioned by that announcement, judging from Value Line's own statements.² We use the term "trailing" upgrades to refer to this sample. In contrast, the second sample is comprised of upgrades that occur shortly before earnings announcements, which we refer to as "leading" upgrades. These might be occasioned by Value Line's analysis or private information about the upcoming earnings announcement, but they cannot be direct reaction to the announcement itself because the announcement has not yet occurred. It seems very unlikely that they are driven by the previous quarter's earnings announcement, now almost 90 days in the past. Since early downward revisions could be predicated on early profit warnings, which are public information, we focus on the information content of upward revisions.³

The existence of a sample of Value Line upgrades that precede earnings announcements is in contrast to the suggestion of Affleck-Graves and Mendenhall (1992) that Value Line upgrades follow earnings announcements. These leading upgrades are associated with immediate stock price reactions that are just as large as for the trailing upgrades. Whatever the case may be for trailing upgrades, our evidence indicates separately that leading upgrades do contain information.

² For example, in a website note accompanying a weekly list of notable rank upgrades, Value Line states: "We include mostly rank changes caused by fundamentals such as new earnings reports. Even when a significant change in earnings momentum has been forecast, the stock's rank will not be affected until the actual results, confirming that forecast, are reported."

³ In constructing our sample, we limit ourselves to upgrades from "2" to "1" because Stickel (1985) finds that these are associated with the largest price effects.

The earnings surprises after leading upgrades are fairly small relative to those associated with trailing upgrades. Nonetheless, the stock price drift in the 60-day period after the announcements averages about the same for the leading and trailing upgrade samples. Thus, the size of the post-upgrade drift for leading upgrades is much larger than the drift for trailing upgrades when measured relative to the earnings surprise. This pattern is not consistent with a post-earnings drift explanation for the Value Line enigma, since the post-earnings drift is generally larger for larger surprises.

The stock price reactions to leading upgrades are statistically significant predictors of the upcoming earnings surprise. It thus appears that Value Line is effective in anticipating the information in the upcoming earnings surprises. Moreover, other evidence presented later in this paper suggests that leading upgrades may convey additional information, possibly related to the quality of earnings. Finally, post-upgrade stock-price drifts are not strongly correlated with earnings surprises (which are relatively small in any case). Based on this evidence, we conclude that leading upgrades are informative and associated with a post-upgrade drift different from the typical post-earnings drift.

Concerning the trailing upgrades, which are temporally associated with earnings announcements, we provide evidence of a significant stock price reaction. The magnitude of this reaction is correlated with the stock price reaction to earnings, suggesting that the market sees trailing Value Line upgrades as corroboration of the information in earnings and thus as incrementally useful.

Overall, our study of leading and trailing Value Line rank upgrades provides strong evidence that the Survey does more than merely reflect the information in earnings surprises, and that the Value Line enigma is not completely coincident with post-earnings drift.

The remainder of this paper is organized as follows. Section I describes our data and methodology, as well as providing some background on the Value Line enigma. Section II describes the timing of the Value Line upgrades in our sample. Section III catalogs the stock price reactions at the time of Value Line upgrades, and the longer-term stock price drifts that follow. Section IV provides evidence that leading upgrades are informative and associated with a characteristic post-upgrade drift, and Section V studies the information content of trailing upgrades. Section VI concludes.

I. Methodology and Data

The *Value Line Investors Survey*, which publishes weekly reports on a 1700-stock universe, provides an up-to-date “timeliness” rank for each covered stock. The timeliness rank purports to predict stock price performance over the next year. In contrast to the claims of other investment advisories, this claim has been upheld in independent research [Black (1973), Holloway (1981), Copeland and Mayers (1982), Huberman and Kandel (1987)]. Similarly, changes in Value Line ranks result in abnormal returns and apparently contain information [Stickel (1985) and Petersen (1987)]. More recently, Affleck-Graves and Mendenhall (1992) show that changes to Value Line timeliness ranks are most common in the period immediately subsequent to earnings announcements. Further, post-upgrade abnormal returns are mainly associated with Value Line rank changes in that period.

Affleck-Graves and Mendenhall establish that the Value Line enigma must be understood in the context of the post-earnings drift puzzle. The post-earnings drift puzzle refers to the tendency for surprisingly strong earnings announcements to be followed by strong stock price performance. The phenomena was first noted by Ball and Brown (1968), and has been documented in many subsequent studies. If the immediate and longer-term stock price reactions to Value Line upgrades are substantially due to their occurring during a period of strong post-earnings drift, then there is no distinct Value Line enigma.

We focus on Value Line timeliness rank upgrade announcements that occur shortly before versus those that occur shortly after quarterly earnings announcements. Our objective is to obtain contrasting samples that are, respectively, very unlikely or very likely to be driven by earnings surprises. We refer to the former as “leading” upgrades and to the latter as “trailing” upgrades.

For each covered stock and for each fiscal quarter, we collect data on upgrade announcements that occur within a sampling window around the earnings announcement. Following the practice of earlier studies, an upgrade in timeliness rank is considered to occur on the Friday of the publication week of the Value Line Survey issue in which it is announced.

The sampling window begins 15 calendar days prior to the end of the quarter. Upgrades announced after this date but before the earnings announcement comprise the leading upgrade sample. These upgrades occur more than 75 days since the end of the previous fiscal quarter, and so are very unlikely to be driven by the previous quarter's earnings announcement. Moreover, they cannot be occasioned by the current quarter's earnings announcement, for that lies in the future relative to the upgrade date.

The sampling window ends on the second Friday following the earnings announcement in *The Wall Street Journal*.⁴ Upgrades announced after the earnings announcement but before the end of the sampling period comprise the trailing upgrade sample. Based on the enforced temporal association, the trailing upgrades comprise the sample of upgrades most likely occasioned by earnings announcements.

Value Line intends that subscribers receive the issues on Friday, but occasionally they are available as early as Thursday or as late as Saturday. Therefore, we follow the practice of earlier studies to measure announcement period abnormal returns over a three-trading-day window from Thursday to Monday [denoted in event time as (UPG-1,UPG+1) where the upgrade Friday is UPG0]. Also following earlier studies, abnormal returns associated with earnings announcements in the *Wall Street Journal* are measured over a two-day window including the announcement day and the previous day [denoted in event time as (EPS-1, EPS0)]. Post-upgrade stock price drift is measured over a 60-trading-day window commencing on the Tuesday following trailing upgrades. For leading upgrades, the drift following the upgrade is measured over a 60-trading-day period commencing the day following the earnings announcement. This prevents any earnings-announcement period effect from being impounded. To sort out the possibly-separate information content of Value Line upgrades and earnings announcements, we enforce

⁴ Affleck-Graves and Mendenhall (1992) also identify upgrades that closely follow an earnings announcement, using an 8 calendar day window. This window includes all upgrades announced in the first weekly Value Line issue that follows the earnings announcement by more than one day. We use a slightly longer window because, as documented later in the paper, an 8 day window excludes all upgrades that follow Monday and Tuesday earnings announcements.

a three-day window between the periods over which event-period abnormal returns are measured. Thus there are a minimum of three trading days between (UPG-1,UPG+1) and (EPS-1,EPS0) for both leading and trailing upgrades. This eliminates 125 upgrade observations that would otherwise be in the sample.

The data for this investigation was hand-collected from weekly issues of the Value Line Investors Survey for the period 1989 through 1995. To economize on data collection efforts while obtaining an appropriate sample, we study exclusively stocks that experience upgrades in timeliness rank from 2 to 1. Stickel (1985) finds that these upgrades are associated with the largest price effects. A rank of 1 corresponds to the Survey's strongest expectation of capital gains over the next year. The lowest rank is 5.

Value Line announced 660 qualifying timeliness rank upgrades from 2 to 1 during the sample period. Of these 12 are discarded because of insufficient stock price data and 3 are discarded because the Value Line earnings estimates are negative, leaving a final sample of 645 upgrade events. The average length of the sampling window is 37 trading days. The shortest sampling window is 18 trading days (for a stock whose earnings announcement occurred exactly at the quarter end). The longest sampling window is 78 trading days (for a stock that announced its earnings with about a two month lag).

To measure abnormal returns associated with upgrades and earnings, we adopt a size-adjusted approach to measuring both the announcement-period stock price reaction and the post-announcement drift. Specifically, the abnormal return for a subsample is the buy-and-hold return on an equally-weighted portfolio less the buy-and-hold return on an equally-weighted portfolio of NYSE and AMEX stocks in the same size decile based on the market value of equity. The use of size-adjusted returns facilitates comparisons with earlier Value Line studies, including Affleck-Graves and Mendenhall (1992) and Stickel (1985). In addition, the buy-and-hold approach avoids any biases due to cumulating daily abnormal returns, which are especially relevant since many Value Line upgrades involve small stocks [Blume and Stambaugh (1983), and Canina, et al (1998)].

II. Timing of Upgrade Announcements

In this section, we detail the timing of the upgrade announcements in the sample and establish the appropriateness of this sample for an investigation of the Value Line enigma in the context of post-earnings announcement drift.

Table 1 displays the sample composition by year. The frequency of rank upgrades varies from a high of 110 in 1992 to a low of 75 in 1994. Though somewhat fewer upgrades occur in the later years, the sample is not concentrated in any particular period.

Of the 645 upgrades in the sample, 129 occur before the nearby earnings announcement and 516 occur after the nearby earnings announcement. Leading upgrades comprise at least 16 percent of the sample in each year and more than 20 percent of the sample for each of three years. The proportion of leading upgrades is slightly higher in the later years. Overall, leading upgrades comprise just over 20 percent of all Value Line upgrades in the sample. Even if one supposes that trailing upgrades are always a simple reflection of the earnings announcement, these leading upgrades suggest that Value Line is attempting to convey additional, or at least prior, information for some stocks.

Table 2 displays the timing of Value Line upgrades relative to the weeks of the corresponding earnings announcements. The 516 trailing upgrades are observed on Friday of the week after the earnings announcement, similar to Affleck-Graves and Mendenhall (1992). The sample contains no trailing upgrades announced on Friday of the week in which earnings are announced due to our requirement of a three-day isolation gap between the earnings and upgrade event periods.⁵ Moreover, upgrades in the calendar week following earnings are those most likely to be occasioned by the earnings announcement, since Value Line goes to press about a week before mailing.

⁵ Value Line upgrades occur on Fridays, and the upgrade event window includes the previous day (since Value Line issues are sometimes available early). A three-day isolation gap between earnings and upgrade windows thus excludes any earnings announcements that occur on the Monday, Tuesday, or Wednesday just prior to the upgrade.

The 129 leading upgrades in the sample occur during the second to the eighth week before the next earnings announcements.⁶ They are most concentrated in the period 3-5 weeks before the earnings announcement. A smaller, but still sizable, share of the leading upgrades occur just prior to earnings (2nd week pre-earnings) or around the end of the fiscal quarter (6-8 weeks pre-earnings).

Given their timing, leading upgrades cannot be predicated on actual knowledge of the announcement. Keeping in mind that these upgrades always occur around or after the end of the calendar quarter, they do not seem to be associated with the previous quarter's earnings announcement either.

III. Stock Price Reactions

In this section we examine stock price changes around Value Line upgrades, nearby earnings announcements, and afterward. Table 3 displays mean returns, *t*-statistics, and the fraction of positive abnormal returns for these periods. The information in Table 3 is organized according to the proximity of each Value Line upgrade to the firm's nearby earnings announcement.

Panel A provides information on trailing upgrades. The upgrade announcement period (Column 1) and the corresponding previously-occurring earnings announcement period (Column 2) are each associated with highly statistically significant abnormal returns of about 1¾ and 3 percent, respectively.

Strictly speaking, it is impossible to tell whether the returns around trailing upgrades are due to Value Line revealing independent information or due to post-earnings drift. However, it is unlikely that post-earnings drift could account for such a large abnormal return over such a short upgrade-announcement window. Moreover, the average cumulative abnormal return over the gap between the earnings and subsequent upgrade event

⁶ The requisite three-day gap between upgrade and earnings event windows precludes sample upgrades in the week prior to earnings. The upgrade event window includes the Monday after the upgrade, and the gap accounts for the following Tuesday, Wednesday, and Thursday. The earnings event window includes the day prior to earnings, so earnings on the following Friday are ruled out of the sample.

windows is nearly zero (not reported in the table). This adds to our confidence that the abnormal return around the upgrade is due to the upgrade event *per se*, and not an extended reaction to the earnings announcement.

The mean earnings surprise (Column 3), measured as the proportional difference between the previously-published Value Line estimate and the actual earnings as reported in Value Line, is about 32 percent. The large earnings surprises and the strong abnormal returns around earnings are consistent with the notion that Value Line tends to upgrade stocks with demonstrated earnings momentum, as found in other studies.

Over the 60 trading days following the trailing upgrade announcement window, stock prices experience an average abnormal drift of more than 2 percent (Column 4). This finding, which is similar to that of Affleck-Graves and Mendenhall (1992), is indicative of the intertwined nature of the Value Line enigma and post earnings drift.

Panel B provides information on leading upgrades, and is a first indication that Value Line upgrades may have predictive power for returns that is independent of post-earnings drift. For the full subsample of leading upgrades, the mean announcement period abnormal return associated with the upgrade is significantly positive (Column 1), similar to the trailing upgrade case. However, in contrast to the case of trailing upgrades, the mean abnormal return associated with the subsequent nearby earnings announcement is very near zero and insignificant (Column 2), even though the mean earnings surprise (Column 3) is significantly positive. Considering that earnings surprises are measured relative to forecasts compiled before the upgrade event, this is a first indication that the upgrade foreshadows the upcoming earnings announcement, subsuming some of its information content.

Leading upgrades are associated with a subsequent mean abnormal drift of 2.8 percent over 60 days (Column 4). Value Line upgrades that precede earnings announcements are apparently useful in predicting stock prices.

This post-upgrade drift for leading upgrades is even larger than the one associated with trailing upgrades, though the difference is not statistically significant, even though the associated earnings surprises are only about one-third as large. The (negative) difference in earnings surprise is significant. Since larger post-earnings drifts are generally associated with

larger earnings surprises, the inverse ordering for leading upgrades is evidence that the post-upgrade drift is, at least partially, a separate phenomenon from post-earnings drift.

The lower rows of Panel B catalog these leading upgrades according to their proximity to earnings announcements, similar to the previous table. Upgrade announcement period and earnings announcement period abnormal returns are fairly similar across time periods.

Overall, leading upgrades are weakly statistically with a post-upgrade drift associated (i.e., at the 10 percent level). The reason for the weak statistical significance is that upgrades in the middle weeks of the sample are associated with almost no drift at all. However, the earliest leading upgrades (6-8 weeks pre-earnings) and the latest leading upgrades (2nd week pre-earnings) are associated with very large 60-day drifts of about 18 percent on average. These drifts are highly statistically significant, and are much larger than the approximately 2 percent average drift associated with lagging upgrades. In view of this, it seems difficult to attribute the large drift for leading upgrades completely to post-earnings drift.

The earnings surprise pattern in Column 3 does show some variation, with the largest mean earnings surprise associated with the earliest and latest leading upgrades. However, t-tests (not reported in the table) fail to reject the hypothesis that earnings are the same across the time periods, so the data do not suggest that level of the earnings surprise is a strong determinant of the drift. Moreover, even for the earliest and latest leading upgrades, the associated earnings surprise is, on average, only a third to a half as large as that for lagging upgrades. Thus it is all the more striking that the leading upgrades are associated with such large drifts.

To summarize the investigation to this point, we find that both leading and trailing Value Line upgrades are associated with positive stock price reactions and subsequent upward drifts in stock prices. Since pre-earning upgrade announcements cannot be conditioned on the earnings surprise, this is evidence that at least a subset of Value Line upgrades does provide useful information for investors. We find that Value Line leading upgrades tend to be followed by an upward drift in stock prices even though they are followed by small earnings surprises. For upgrades just before earnings and those occurring near the end of the fiscal quarter, the subsequent drifts seem too large to be completely explained as post-earnings drift.

This evidence is only descriptive at this point. The next two sections present formal tests concerning the information content of upgrades and the nature of the drift.

IV. The Nature of the Information in Leading Upgrades

In this section we use linear regressions to test three hypotheses, stated below in the form of questions.

1) Do leading Value Line upgrades effectively anticipate the information in subsequent earnings announcements? If upgrades are predictors of earnings surprises (where the surprise is calculated relative to a pre-upgrade earnings forecast), then at least part of the information implicit in the upgrades is to update previous earnings forecasts. We find that the market reactions to Value Line upgrades are effective predictors of the upcoming earnings announcements.

2) Do leading Value Line upgrades contain information in addition to an update of the previous earnings forecast? We find evidence that Value Line upgrades have additional information content, possibly information that confirms the quality of earnings.

3) Is the post-upgrade drift strongest when an upgrade is followed by a large earnings surprise? For leading upgrades, we find no statistical association between the earnings surprise and the drift. Since post-earnings drift has been found to be stronger for larger earnings surprises, this supports the notion of a distinct Value Line enigma.

The following subsections detail the evidence on each of these questions.

A. Do Leading Upgrades Predict Earnings Surprises?

To begin, we estimate the following regression specification for leading upgrades:

$$ESURP = a_0 + a_1 LMVE + a_2 AR_{-1,+1}^{UPG}, \quad (1)$$

where

- ESURP* is the proportional earnings surprise, measured as the difference between the actual earnings reported by Value Line and the most recent Value Line estimate, divided by the estimate⁷;
- LMVE* is the log of the total market value of equity, measured five days before the Value Line upgrade announcement;
- $AR_{-1,+1}^{UPG}$ is the size-adjusted abnormal return over the three-day Value Line upgrade announcement period; and
- a_j for $j = 0, \dots, 2$, are regression coefficients.

If leading Value Line upgrades contain information for the future earnings announcement, then the coefficient on the Value Line upgrade abnormal return, $AR_{-1,+1}^{UPG}$, should be positive. A firm size measure is included in the regression to allow for the possibility that smaller firms, which may have less analyst coverage, are more prone to earnings surprises [Stickel (1985)].

The results are reported in Panel A of Table 4. The coefficient associated with the Value Line upgrade abnormal return is positive and highly statistically significant, a strong indication that leading Value Line upgrades are useful for predicting earnings.⁸

⁷ Philbrick and Ricks (1991) report that the information content of earnings surprises is greatest when measured using Value Line forecast and reported earnings. They also find that earnings forecast errors are minimized when measured this way. Their results suggest that matching Value Line forecasts and reported earnings measures earnings surprises in the way that matters most to the market and has the least noise. Thus, we use Value Line forecasts and reported earnings in calculating *ESURP*. Like Philbrick and Ricks, we normalize by stock price. We obtain very similar results using earnings as reported in *The Wall Street Journal*, provided one extreme outlier is removed from the sample.

⁸ This result does not depend on the precise definition of the dependent variable. We obtain very similar results using any of the following dependent variables: the proportional earnings surprise based on *The Wall Street Journal's* reported earnings, earnings surprises as a percentage of stock price based on either Value Line or *The Wall Street Journal's* reported earnings, or earnings surprise relative to absolute earnings as reported by Value Line. Results are similar but less statistically significant using the dollar amount of the earnings surprise based on either Value Line's or *The Wall Street Journal's*

B. Do Leading Upgrades Contain Additional Information?

Having established that leading Value Line upgrades help predict earnings surprises, we check whether the stock price reaction to those earning surprises is also related to the abnormal return at the time of the earlier Value Line upgrade.

If Value Line upgrades only update earnings expectations, and contain no additional qualitatively-different information, then the coefficient on the upgrade abnormal return should be negative. To see this, consider the following conceptual regression:

$$AR_{-1,0}^{EPS} = b_0 + b_1 LMVE + b_2 ESURP^{Best}, \quad (2)$$

where

$AR_{-1,0}^{EPS}$ is the size-adjusted abnormal return over the two-day earnings announcement period;

$LMVE$ is the log of the total market value of equity, measured five days before the Value Line upgrade announcement;

$ESURP^{Best}$ the earnings surprise calculated relative to a forecast that uses the best information available as of the leading Value Line upgrade date; and

b_j for $j = 0, \dots, 2$, are regression coefficients.

So long as earnings contain relevant information, the sign of b_2 is positive. Since $ESURP^{Best}$ uses the most up-to-date information as of the Value Line upgrade date, it can be written as⁹

$$ESURP^{Best} = ESURP - INNOVATION, \quad (3)$$

reported earnings, or earnings surprise relative to absolute earnings as reported by *The Wall Street Journal*.

⁹ All earnings and earnings forecast measures refer to variables expressed as a proportion of its Value Line forecast. The additional notation has been suppressed for simplicity.

where

$ESURP$ = the previously-defined observable earnings surprise, i.e. $EARN - FORECAST^{Early}$, where $EARN$ is actual earnings as recorded in Value Line and $FORECAST^{Early}$ is the Value Line forecast in effect at the time of the upgrade, and

$$INNOVATION = FORECAST^{Best} - FORECAST^{Early}.$$

Under the maintained hypothesis that Value Line upgrades reflect strictly an update of Value Lines previous earnings forecast, then the stock price reaction $AR_{-1,+1}^{UPG}$ is an observable proxy for $INNOVATION$. Using this proxy and substituting (3) into (2) yields

$$AR_{-1,0}^{EPS} = b_0 + b_1 LMVE + b_2 ESURP - b_2 AR_{-1,+1}^{UPG}, \text{ or}$$

$$AR_{-1,0}^{EPS} = b_0 + b_1 LMVE + b_2 ESURP + b_3 AR_{-1,+1}^{UPG}, \quad (4)$$

where $b_3 = -b_2$. Recalling that b_2 is positive, the coefficient on the upgrade abnormal return should be negative and of the same absolute magnitude as the coefficient on the measured earnings surprise (unless leading upgrades do more than update the prior earnings forecast).

Panel B of Table 4 displays coefficient estimates of (4). Note that the coefficient on $AR_{-1,+1}^{UPG}$, the stock price reaction to the leading upgrade, is positive, though not statistically significant.¹⁰ Since the coefficient is not negative, the hypothesis that the leading upgrade is simply an implicit update of the earnings forecast is rejected.

In order to make the stronger statement that leading Value Line upgrades convey additional non-earnings information, a significant positive

¹⁰ Similar results are obtained using an earnings surprise regressor defined as the proportional earnings surprise based on *The Wall Street Journal's* reported earnings, or using earnings surprise as a percentage of stock price based on either Value Line or *The Wall Street Journal's* reported earnings.

coefficient would be required. An insignificantly-positive coefficient leaves this possibility open, but does not confirm it.

C. Characteristics of the Stock Price Drift Following Leading Upgrades

We have seen that leading Value Line upgrades are positively correlated with the upcoming earnings surprise. Thus, it could be the case that the post-upgrade drift is actually associated with strong earnings surprises, not with upgrades. Other research has established that post-earnings drift is strongest for stocks that have the largest earnings surprises.¹¹ If the drift following leading Value Line upgrades is not correlated with the earnings surprise, then the notion that post-upgrade drift is merely a manifestation of post-earnings drift becomes less plausible. This subsection reports results showing that this is the case: for leading upgrades, the subsequent drift is not at all tightly related to magnitude of the earnings surprise.

To investigate, we estimate the following regression:

$$DRIFT_{60}^{UPG} = c_0 + c_1 LMVE + c_2 ESURP \quad (5)$$

where the terms not previously defined are

$DRIFT_{60}^{UPG}$ = the size-adjusted abnormal return over the 60 post-earnings period following the upgrade; and
 c_j for $j = 0, \dots, 2$, are regression coefficients.

¹¹ For example, Foster, Olsen, and Shevlin (1984) state that “many studies have reported evidence that the sign *and magnitude* of security returns in the post-earnings announcement period are positively correlated with the sign *and magnitude* of the unexpected component of the earnings release” (italics added). In much of the literature, the metric for earnings surprises is standardized unexpected earnings, or *SUE*. Since calculation of *SUE* requires multiple forecasts, whereas only the Value Line forecast is relevant in this study, one could question whether the general result holds for earnings surprises measured by *ESURP*. Foster, Olsen, and Shevlin find that the general results holds for several measures of ex-ante earnings surprises. We have checked that our qualitative results are unchanged for some other earnings surprise metrics.

$DRIFT_{60}^{UPG}$ is measured to exclude the return between the upgrade and earnings date, since at least part of the return over this period is due to the information in earnings.

Panel C of Table 4 shows that the relation between the drift and the earnings surprise is not statistically significant. This is in contrast to the usual pattern in which post-earnings drift is increasing in the earnings surprise. We interpret this as evidence that post-upgrade drift is a separate phenomenon, at least for the case of leading upgrades.¹²

V. The Information in Value Line Upgrades that Follow Earnings Announcements

The information content of trailing Value Line upgrades remains an open question at this point. In this section, we formally test whether trailing upgrades contain additional information beyond that in the earnings announcement.

To do so, we estimate several versions of the following regression equation:

$$AR_{-1,+1}^{UPG} = c_0 + c_1 LMVE + c_2 ESURP + c_3 AR_{-1,0}^{EPS}, \quad (3)$$

where notation is as previously defined and, additionally,

$AR_{-1,+1}^{UPG}$ is the size-adjusted abnormal return over the three-day upgrade announcement period.

The purpose of these tests is to establish whether the trailing upgrade abnormal return is significantly positive after controlling for the information in earnings (as well as firm size, which has previously been shown to be related to upgrade price reactions). If there is no additional price reaction beyond one related to the earnings surprise or the earnings announcement abnormal return, then the upgrade price reaction may well

¹² For trailing upgrades, the usual relationship is present, though this result is sensitive to the exact form of the earnings surprise metric. Since trailing upgrades are triggered by earnings, it is not possible to separate the Value Line enigma from the post-earnings drift puzzle for these events.

be a manifestation of post-earnings drift, for post-earnings drift is related to the earnings surprise. However, if the upgrade abnormal return is not explained by earnings information, then it may plausibly be an independent effect.

Table 5 provides the results. Model 1 shows that trailing upgrade abnormal returns are negatively related to firm size, consistent with previous studies. The intercept for Model 1 provides a benchmark price reaction controlling for firm size but ignoring all earnings-related information.

Model 2 shows that the upgrade abnormal return is not related to the previously-revealed earnings surprise. Model 3 substitutes the earnings abnormal return regressor for the earnings surprise regressor. The slope coefficient associated with the earlier earnings abnormal return is significantly positive, evidence that the market considers the Value Line upgrade to be confirmatory of the earnings signal.

Even so, the intercept in Model 3 is similar to that in Model 1: controlling for the stock price reaction to the earnings surprise does not entirely account for the upgrade reaction. The market apparently treats upgrades as information of independent value.

Model 4, which incorporates both the earnings surprise and the earnings announcement abnormal return as regressors, does not change any of the conclusions above.

VI. Conclusion

The Value Line enigma, the tendency of stocks recommended by the Value Line Survey to exhibit superior subsequent performance, has long standing as a challenge to market efficiency. Recent evidence has shown that the Value Line enigma and post-earnings announcement drift are related, for Value Line timeliness rank upgrades are most frequent shortly after earnings announcements. This raises the possibility that there is no distinct Value Line enigma.

We focus on the period around earnings announcements to learn whether Value Line upgrades provide distinct and valuable information to investors, and whether these upgrades are associated with future superior stock price performance. Specifically, we study two samples of stocks: those

whose Value Line timeliness rankings are upgraded shortly before (leading upgrades) and shortly after (trailing upgrades) earnings announcements, respectively. The upgrades in the first sample cannot be motivated by knowledge of the future earnings announcement, and the most recent earnings announcement is far in the past. The upgrades in the latter sample, in contrast, are most likely to be motivated by an earnings announcement. About 20 percent of the upgrades that occur around the time of earnings announcements actually occur before the associated earnings announcement, suggesting that Value Line does more than follow-on to previous earnings announcements.

Leading upgrades elicit strong stock price reactions and are associated with post-upgrade drifts just as large as the drift associated with trailing upgrades. Arguably this result establishes that leading upgrades contain information and that they are associated with subsequent stock price performance. Further, leading upgrades anticipate the information in subsequent earnings, and the evidence suggests that they may convey additional information. The drift following leading upgrades does not exhibit the typical pattern of post-earnings drift in that it is not strongly correlated with the earnings surprise (which is rather small in any case). Finally, trailing upgrades provide incremental information, judging by the stock price reactions.

Overall, our evidence establishes that Value Line provides valuable information independent of earnings, and suggests that Value Line upgrades are associated with future stock price increases separate from post-earnings drift.

We speculate that the Value Line upgrade serves as a certifying mechanism that testifies to the credibility and quality of the earnings stream of the upgraded firm. Given the inherent flexibility of accounting numbers and the associated potential for manipulation of corporate earnings, this external validation mechanism fulfills a useful economic function.

References

Affleck-Graves, John, and Richard Mendenhall, 1992, The relation between the Value Line enigma and post-earnings-announcement drift, *Journal of Financial Economics* 31, 75-96.

Ball, Ray and Philip Brown, 1968, An empirical evaluation of accounting income numbers, *Journal of Accounting Research* 6, 159-178.

Bernard, Victor and Jacob Thomas, 1989, Post-earnings announcement drift: delayed price response or risk premium? , *Journal of Accounting Research (Suppl.)* 27, 1-36.

Black, Fischer, 1973, Yes, Virginia, there is hope: Tests of the Value Line ranking system, *Financial Analysts Journal* 29, 10-14.

Blume, Marshall, and Robert Stambaugh, 1983, Biases in computed returns: An application of the size effect, *Journal of Financial Economics* 12, 387-404.

Canina, Linda, Roni Michaely, Richard Thaler, and Kent Womack 1998, Caveat Compounder: A warning about using the CRSP Equal-weighted Index to compute long-run returns, *Journal of Finance* 53, 403-16.

Copeland, Thomas and David Mayers, 1982, The Value Line enigma (1965-1978): A case study of performance evaluation issues, *Journal of Financial Economics* 10, 289-322.

Holloway, Clark, 1981, A note on testing an aggressive investment strategy using Value Line ranks, *Journal of Finance* 36, 711-719.

Huberman, Gur and Shmuel Kandel, 1987, Value Line rank and size, *Journal of Business* 60, 577-589.

Peterson, David, 1987, Security price reactions to initial reviews of common stock by the Value Line Investment Survey, *Journal of Financial and Quantitative Analysis* 22, 483-94

Peterson, David, 1995, The informative role of the Value Line Investment Survey: Evidence from stock highlights, *Journal of Financial and Quantitative Analysis* 30, 607-18.

Stickel, Scott, 1985, The effect of Value Line Investment Survey rank changes on common stock prices, *Journal of Financial Economics* 14, 121-143.

Table 1**Frequency of Value Line Upgrades from Timeliness Rank 2 to Rank 1**

The sample spans the period from 1989 through 1995, and is collected from issues of the Value Line Investors Survey. For trailing upgrades, the Value Line upgrade date occurs by the second Friday after the earnings for the quarter are announced in the *Wall Street Journal*. For leading upgrades, the Value Line upgrade occurs prior to the quarterly earnings announcement in *The Wall Street Journal* but no earlier than 15 days prior to the end of the fiscal quarter. Numbers in parentheses are the relative frequency of each upgrade type.

Year of Upgrade	Trailing Upgrades	Leading Upgrades	Total Number of Rank Upgrades
1989	87 (0.821)	19 (0.179)	107
1990	89 (0.839)	17 (0.161)	106
1991	63 (0.778)	18 (0.222)	81
1992	90 (0.826)	19 (0.174)	110
1993	71 (0.772)	21 (0.228)	92
1994	54 (0.720)	21 (0.280)	75
1995	62 (0.816)	14 (0.184)	76
Total	516 (0.800)	129 (0.200)	645

Table 2

Timing of Value Line Upgrades from Timeliness Rank 2 to Rank 1

The sample spans the period from 1989 through 1995, and is collected from issues of the Value Line Investors Survey. Value Line expects new issues to reach subscribers on Friday of each week. The table shows the frequency of upgrades in each publication week relative to the earnings announcement for the upgraded firm.

Week of Upgrade relative to Week of Earnings	Frequency	Percentage Frequency
1 st week post-earnings	516	79.9
2 nd week pre-earnings	43	6.8
3-5 weeks pre-earnings	74	11.4
6-8 weeks pre-earnings	12	1.9
Total	645	100.0

Table 3

**Associated Abnormal Returns and Earnings Surprises for Value Line
Upgrades from Timeliness Rank 2 to Rank 1**

The sample spans the period from 1989 through 1995, and is collected from issues of the Value Line Investors Survey. The sample consists of 645 separate upgrade events. The table provides averages of the size-adjusted abnormal returns over various time spans for upgrades announced in specific windows relative to the nearby earnings announcement. The upgrade announcement period is defined as the three-day window surrounding the Friday publication date of the upgrade. The earnings announcement period is defined as the two-day window that includes the announcement date and the previous trading day. The post-upgrade period for trailing upgrades is defined as the 60-trading-day period following the upgrade announcement period. The post-upgrade period for leading upgrades is defined as the 60-trading-day window following the earnings announcement, in order to avoid including the earnings announcement effect. The earnings surprise is measure as the proportional difference between the earnings announcement as recorded in Value Line and the prior Value Line earnings estimate. Figures in parentheses are *t*-statistics, and figures in brackets indicate the numbers of positive returns/sample size.

	(1)	(2)	(3)	(4)
Week of Upgrade relative to Week of Earnings	Upgrade Announcement Period Abnormal Return	Earnings Announcement Period Abnormal Return	Earnings Surprise	Post-Upgrade Period Abnormal Return [†]
<u>Panel A. Trailing upgrades</u>				
1 st week post-earnings	0.017 (8.36) ^{***} [334/516]	0.029 (10.92) ^{***} [349/516]	0.319 (14.47) ^{***} [458/516]	0.022 (2.88) ^{**} [285/516]
<u>Panel B. Leading upgrades</u>				
All leading upgrades	0.014 (3.52) ^{***} [79/129]	-0.0008 (-0.19) [71/129]	0.100 (4.40) ^{***} [81/129]	0.028* (1.76) [79/129]
2 nd week pre-earnings	0.017 (2.91) ^{***} [26/43]	0.004 (0.89) [25/43]	0.132 (3.15) ^{***} [29/43]	0.179 (3.40) ^{***} [30/43]
3-5 weeks pre-earnings	0.016 (1.15) [47/74]	-0.003 (-0.45) [40/74]	0.073 (2.51) ^{**} [43/74]	-0.006 (-0.325) [39/74]
6-8 weeks pre-earnings	0.014 (1.25) [6/12]	-0.006 (-0.30) [6/12]	0.153 (2.15) ^{**} [9/12]	0.181 (2.17) ^{**} [10/12]

[†] for leading upgrades, the return in the period prior to earnings is excluded.

* indicates statistical significance at the 10 percent level or better.

** indicates statistical significance at the 5 percent level or better.

*** indicates statistical significance at the 1 percent level or better.

Table 4

Cross-sectional analysis of earnings surprises and abnormal stock returns for leading Value Line upgrade sample

The sample spans the period from 1989 through 1995, and is collected from issues of the Value Line Investors Survey. The full sample is defined by the occurrence of a Value Line Timeliness upgrade from Rank 2 to Rank 1 in the period from eight weeks before to one week after a firm's earnings announcement. The leading upgrade sample consists of 129 observations. The table reports ordinary least squares regressions. Variables involved in these regressions are defined as follow:

- ESURP* is the earnings surprise, measured as the difference between the earnings recorded in Value Line and the most recent Value Line estimate, divided by the estimate;
- LMVE* is the log of the total market value of equity, measured five days before the Value Line upgrade announcement;
- $AR_{-1,+1}^{UPG}$ is the size-adjusted abnormal return over the three-day Value Line upgrade announcement period;
- $AR_{-1,0}^{EPS}$ is the size-adjusted abnormal return over the two-day earnings announcement period, and
- $DRIFT_{60}^{UPG}$ is the size-adjusted abnormal return over the 60 post-earnings period following the upgrade.

Figures in parentheses are *t*-statistics unless otherwise noted.

<u>Panel A.</u>					
$ESURP = a_0 + a_1 LMVE + a_2 AR_{-1,+1}^{UPG}$					
Coefficients for:	Intercept	<i>LMVE</i>	$AR_{-1,+1}^{UPG}$	Adjusted R^2 (p-value for F statistic)	
	0.386	-0.022	1.25	0.070	
	(1.63)	(-1.31)	(2.35)**	(0.004)***	
<u>Panel B.</u>					
$AR_{-1,0}^{EPS} = b_0 + b_1 LMVE + b_2 ESURP + b_3 AR_{-1,+1}^{UPG}$					
Coefficients for:	Intercept	<i>LMVE</i>	<i>ESURP</i>	$AR_{-1,+1}^{UPG}$	Adjusted R^2 (p-value for F statistic)
	-0.080	0.005	0.055	0.033	0.081
	(-1.66)*	(1.54)	(3.04)***	(0.304)	(0.014)**
<u>Panel C.</u>					
$DRIFT_{60}^{UPG} = c_0 + c_1 LMVE + c_2 ESURP$					
Coefficients for:	Intercept	<i>LMVE</i>	<i>ESURP</i>	Adjusted R^2 (p-value for F statistic)	
	0.252	-0.017	0.088	0.042	
	(1.63)	(-1.53)	(1.43)	(0.065)***	

** indicates statistical significance at the 5 percent level or better.

*** indicates statistical significance at the 1 percent level or better.

Table 5

Cross-sectional analysis of upgrade period abnormal stock returns for trailing Value Line upgrade sample

The sample spans the period from 1989 through 1995, and is collected from issues of the *Value Line Investment Survey*. The trailing upgrade sample consists of 516 observations. The table reports ordinary least squares regressions based on the model

$$AR_{-1,+1}^{UPG} = c_0 + c_1 LMVE + c_2 ESURP + c_3 AR_{-1,0}^{EPS},$$

where the variables are defined as follows:

- $AR_{-1,+1}^{UPG}$ is the size-adjusted abnormal return over the three-day upgrade announcement period;
- $LMVE$ is the log of the total market value of equity, measured five days before the Value Line upgrade announcement;
- $ESURP$ is the earnings surprise, measured as the difference between the earnings recorded in Value Line and the most recent Value Line estimate, divided by the estimate; and
- $AR_{-1,0}^{EPS}$ is the size-adjusted abnormal return over the two-day earnings announcement period.

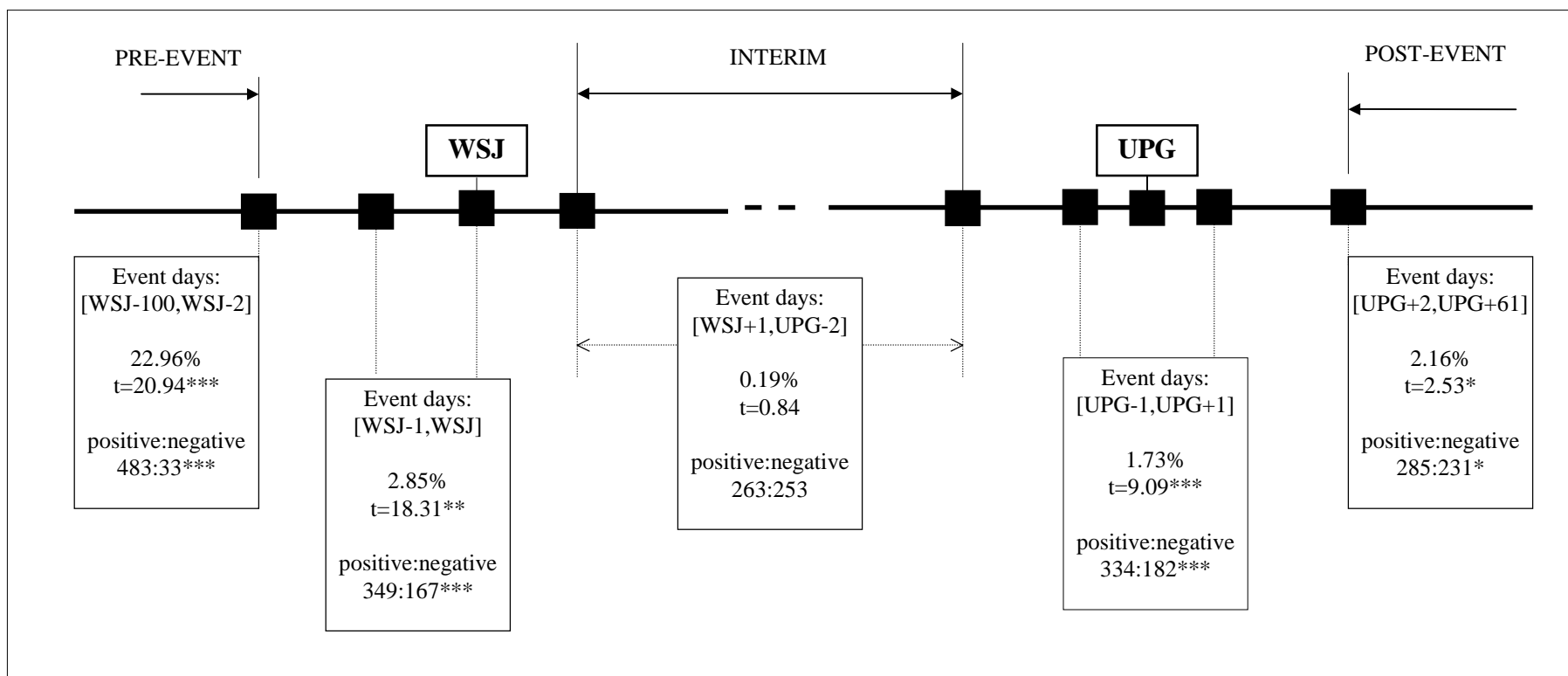
Figures in parentheses are *t*-statistics unless otherwise noted.

Coefficients on:	Intercept	LMVE	<i>ESURP</i>	$AR_{-1,0}^{EPS}$	Adjusted R^2 (F statistic)
Model 1	0.175 (10.05)	-0.011 (-9.11)			0.132 (82.96)
Model 2	0.173 (9.63)	-0.012 (-8.88)	0.002 (0.78)		0.133 (41.75)
Model 3	0.165 (9.48)	-0.011 (-8.78)		0.116 (3.79)	0.154 (49.68)
Model 4	0.165 (9.30)	-0.011 (-8.66)	0.0004 (0.14)	0.115 (3.71)	0.154 (33.06)

Figure 1: Cumulative average abnormal stock returns around trailing and leading Value Line Timeliness Rank upgrades

Cumulative average abnormal returns have been computed as size-adjusted returns. The computation follows that of Affleck-Graves and Mendenhall (1992). The significance level of the positive to negative abnormal returns is based on the generalized sign test as in Cowan (1992). In the figure below, WSJ represents the date that the earnings were reported in the Wall Street Journal, and UPG is the date on which the Value Line upgrade appeared.

Panel A: Trailing Upgrades (516 observations)

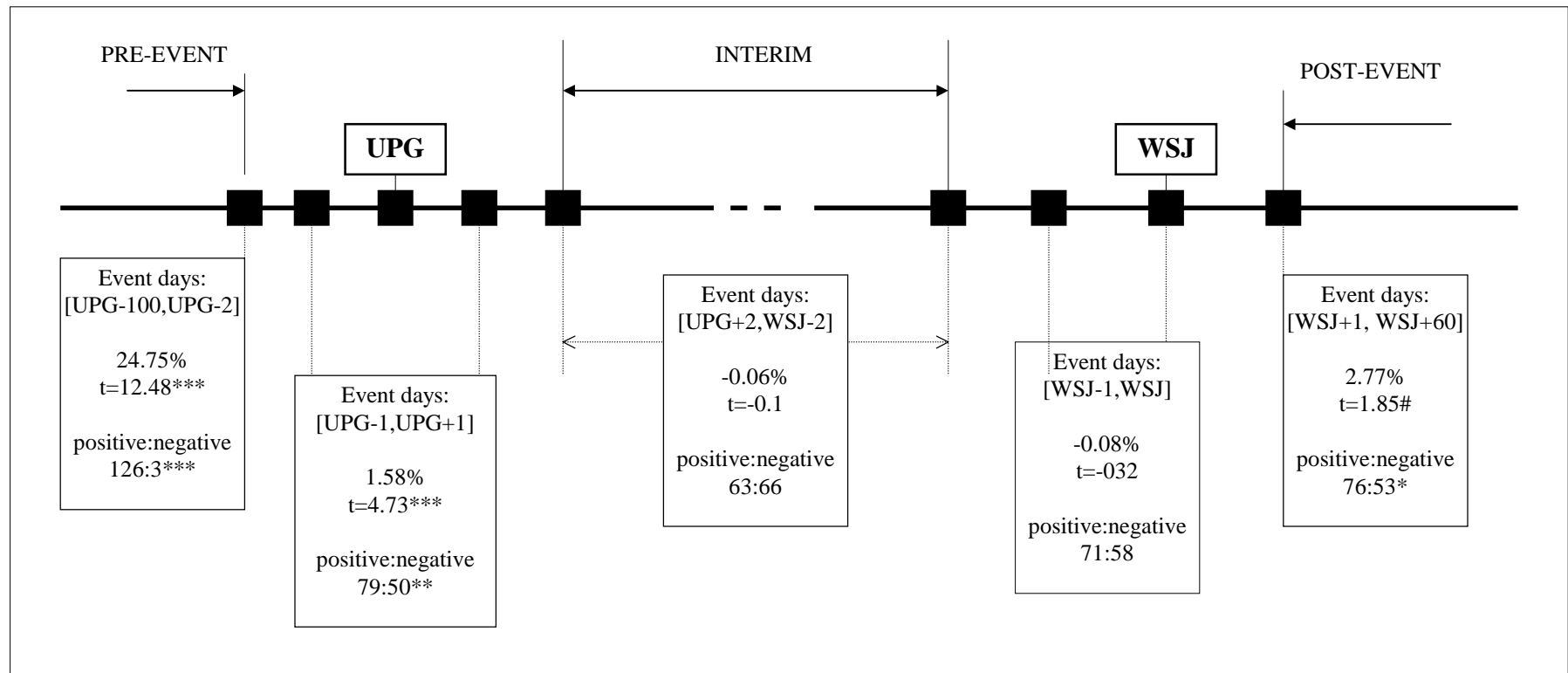


#, *, **, *** indicate significance at the 0.1, 0.05, 0.01, and 0.001 levels respectively

Figure 1: Cumulative average abnormal stock returns around trailing and leading Value Line Timeliness Rank upgrades (continued)

Cumulative average abnormal returns have been computed as size-adjusted returns. The computation follows that of Affleck-Graves and Mendenhall (1992). The significance level of the positive to negative abnormal returns is based on the generalized sign test as in Cowan (1992). In the figure below, WSJ represents the date that the earnings were reported in the Wall Street Journal, and UPG is the date on which the Value Line upgrade appeared.

Panel B: Leading Upgrades (129 observations)



#, *, **, *** indicate significance at the 0.1, 0.05, 0.01, and 0.001 levels respectively