

Missing Out

Why access to real-time analyst model revisions matters

Ihsan Erman Saracgil, PhD
Data Scientist

I. INTRODUCTION

While sell-side analyst estimates of high-level financial metrics, such as revenue or EPS, have been available for many years, deeper-level forecasts of the critical line items that drive company performance have only recently become available in any systematic way. Revisions to these analyst estimates of operating metrics, segment or brand revenues, detailed financial line items, etc. are highly sought after by many investor relations officers (IROs). Most who go to such trouble obtain them one of two ways:

1. **Collecting and ingesting analyst spreadsheet models directly**
2. **Processing the analyst models through third-party service providers**

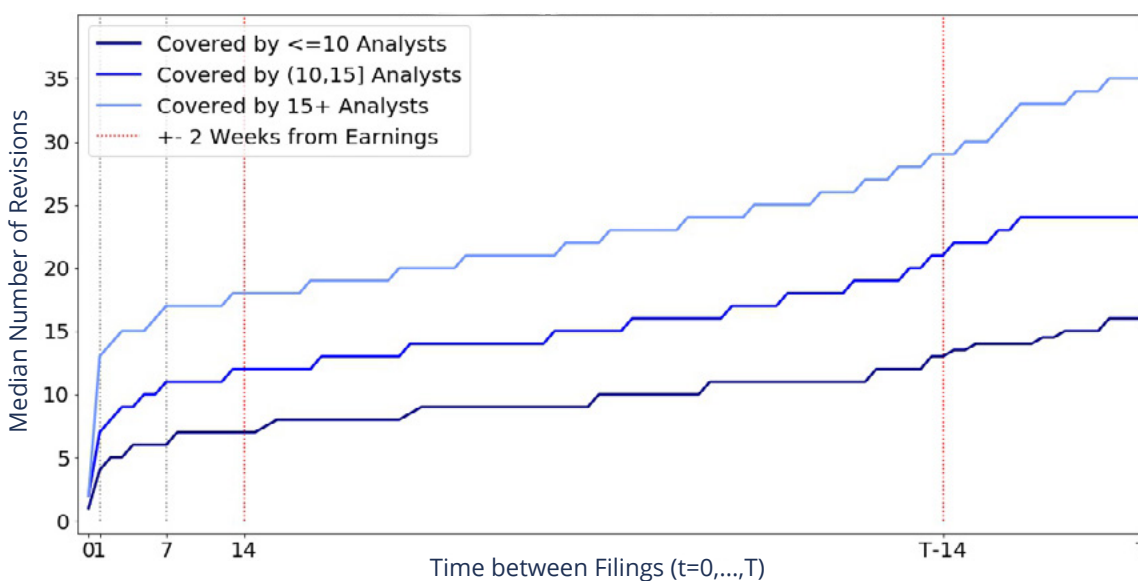
In both methods, IROs receive snapshots of analyst and consensus estimates typically one to two weeks after earnings, summarizing how analysts have revised their estimates based on the release of new earnings, and a second snapshot one to two weeks prior to the next earnings announcement, reflecting their latest expectations for upcoming earnings.

We argue that investor relations professionals are missing critical information with this snapshot approach to capturing analyst revisions of deep estimates.

We argue that investor relations professionals are missing critical information with either approach to capturing analyst revisions of deep estimates. Using Visible Alpha's data,¹ we set out to understand when and how often analysts revise estimates across companies in the S&P 500 during a fiscal quarter. We focus on the last reported fiscal quarter and count how many revisions were captured day-by-day from the beginning to the end of each company's quarter. We group S&P 500 companies into three groups by the size of their analyst coverage on Visible Alpha Insights™.² We estimate an average path of revisions for all companies covered by less than 10 analysts, 10 to 15 analysts and more than 15 analysts. We also explore how these revisions impacted point-in-time and daily consensus data.³

We find that there is a continuous flow of both analyst and consensus revisions that cannot be summarized by stale snapshots. Information flow is fastest during the first day through the first week, and then becomes steady but positive throughout the rest of the quarter, petering out only at the very end.

FIGURE 1.
Analysts Revisions by Coverage Size
S&P 500 Companies in Last Quarter



¹ Visible Alpha aggregates analyst estimates into consensus from 80+ brokers on over 4,700 publicly-listed firms across the globe. For each company, Visible Alpha tracks an average of 157 consensus rows, all of which are available in a point-in-time database. The number of consensus rows across all companies is 700,000+ and over 13 million rows if counted at the analyst model level.

² See **Figure 8** in the Appendix for a breakdown of the number of companies by their broker coverage count. Instead of five groups as displayed in the chart, we combine the lowest and highest groups in this analysis to have three approximately equal size groups. The final sample has 146 companies with coverage of a minimum of two analysts and at most 10 analysts; 181 companies with coverage of at least 11 and at most 15 analysts; and 171 analysts with coverage of at least 16 analysts. The maximum number of analysts covering a company in this sample is 38. These groups are colloquially referred to in the text body as "less than 10," "10 to 15" and "more than 15."

³ Visible Alpha captures and processes every analyst model contributed to the platform on a point-in-time basis. Consensus refers to the average estimate for analysts contributing models to Visible Alpha. In this study, we limit ourselves to analysts whose models are included in consensus at some point during each company's quarter. Even though analyst model revisions are published on the platform every time a new model from the same analyst and same company is processed, consensus might have been recalculated by incorporating analyst model revisions in batches. This can often be seen around earnings announcements and major corporate events when many analysts send revised models to Visible Alpha at the same time. As a result, the number of new analyst models and the number of consensus revisions may not be the same. For example, 10 new analysts models on the same day can result in two consensus revisions during the day, with each revision incorporating five new analyst models in their order of arrival/processing. Visible Alpha users refreshing consensus estimates either on the platform, in the Excel add-in or using the API during the day would see the latest revision, even though the consensus revision history counts this example as one consensus revision for the day. However, point-in time consensus updates are available to users via Visible Alpha's Data Feed; in this example, the user would receive a new file or a delta file for all consensus revisions that were processed during the day.

Figure 1 illustrates how disadvantageous it is to substitute point-in-time analyst revisions with stale snapshots taken at around two weeks before and after earnings announcements. By the end of the first week of a new quarter, at least half the companies covered by 10 to 15 analysts, the largest group, receive up to 11 analyst revisions, seven of which are published by the first day.⁴ Two weeks prior to the end of the quarter, half of the same group of companies receive up to 21 analyst revisions, with a quarter total of 25 analyst revisions.⁵

Figure 1 also illustrates that after the first week and until two weeks prior to the end of the quarter, analyst revisions trickle in approximately every week or bi-weekly. Keeping track of analyst models at this frequency throughout the quarter is challenging for any IRO. To get a sense of the magnitude of the challenge, for a typical company Visible Alpha will revise and update around 160,000 datapoint estimates each year.⁶

The next section argues that having a self-collection process or third-party provider take detailed snapshots two weeks before and after earnings announcements does not address the challenge that half of all analyst revisions take place by the time the IROs receive an update, and another 36% of analyst revisions are missed while waiting for the next snapshot. Information losses at these orders of magnitude can prove consequential.

⁴ These numbers reflect the median number of revisions in a given group of companies by a certain common date in the quarter. In comparison, 7 and 18 analyst revisions are published by the second week for companies covered by less than 10 and more than 15 analysts, respectively. We computed a comparable statistic for daily consensus revisions. Median consensus revisions by the second week total: three for companies covered by less than 10, and five for companies covered by 10 to 15 analysts or by more than 15 analysts.

⁵ In comparison, respectively, 12 and 25 analyst revisions are published by two weeks prior to quarter end for companies covered by less than 10 and more than 15 analysts. We computed a comparable statistic for daily consensus revisions. Median consensus revisions by two weeks prior to quarter end total: eight for companies covered by less than 10 analysts, 12 for companies covered by 10 to 15 analysts, and 28 for companies covered by more than 15 analysts.

⁶ This estimate was derived using the following assumptions: The consensus templates Visible Alpha prepares for each company have a median of 161 rows. The analyst models we receive typically include quarterly estimates for the near term and annual estimates for 5 years or more. Updating 10 forecast periods (a reasonable combination of quarterly and annual forecast periods) for 161 rows, 25 times per quarter (typical number of analyst models received in a 90 day period for a company covered by 10-15 analysts) adds up to 40,250 data points that Visible Alpha updates and revises every quarter or 161,000 per year. This conservative calculation does not take into account historical data or past revisions to current forecasts.

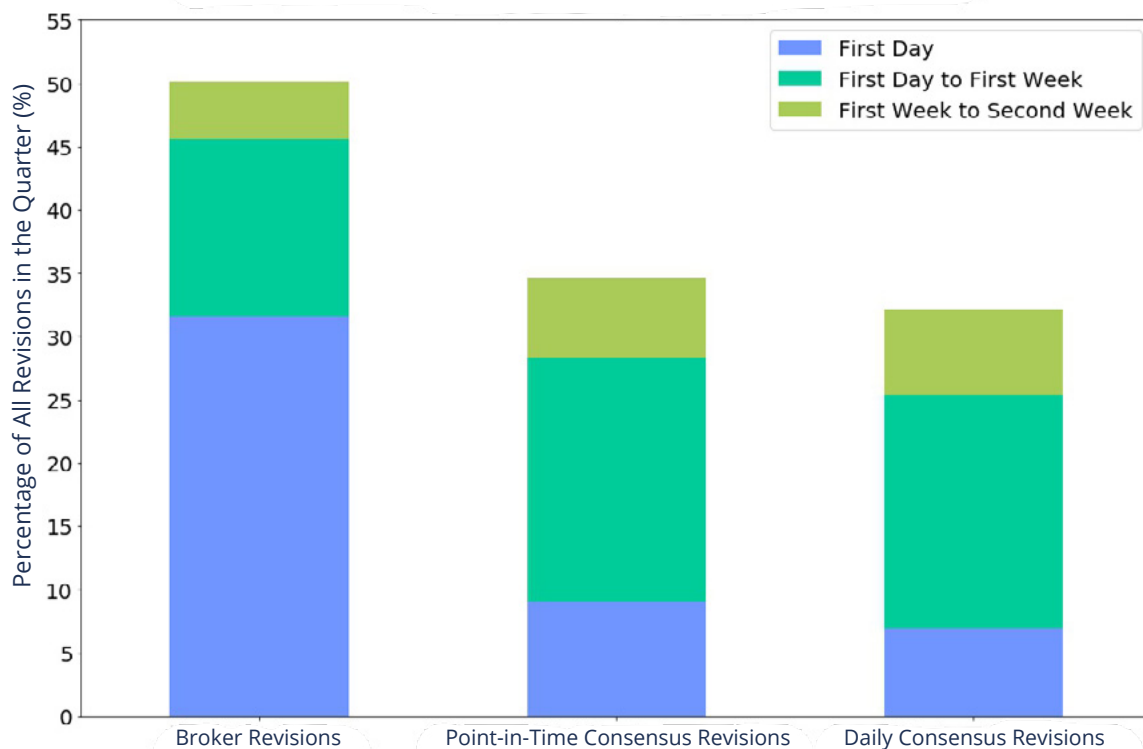
II. FINDINGS

The key findings are illustrated in a series of figures. We find that on average, 32% of all analyst revisions recorded for a company during its entire quarter happen within a day of the earnings announcement.⁷

Figure 2 shows that on average this number reaches 46% within the first week of the earnings announcement. Therefore, any snapshot that takes longer than one week—or even longer than the first day—puts an IRO at an informational disadvantage.

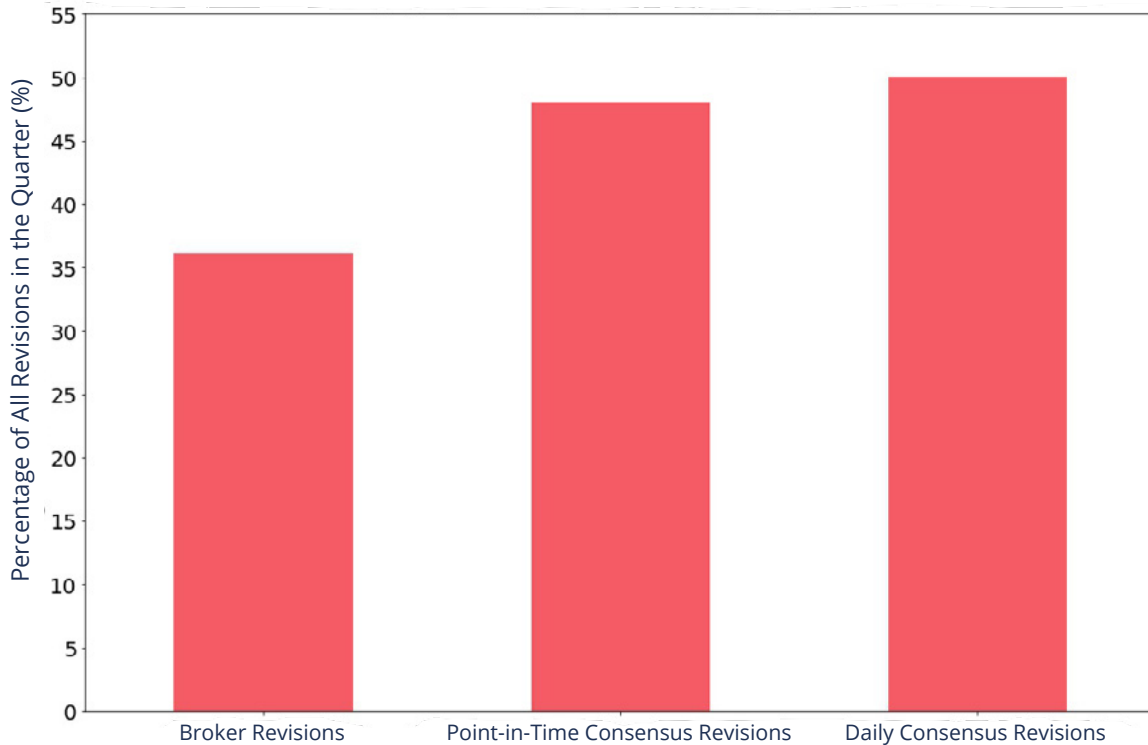
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FIGURE 2.
Average Distribution of Revisions for S&P 500 Companies in Last Quarter
Revisions in the First 2 Weeks



⁷ See the Appendix for a detailed description of the metric discussed here and full documentation of the methodology.

FIGURE 3.
Average Distribution of Revisions for S&P 500 Companies in Last Quarter
Revisions between First and Last 2 Weeks



We also find that the flow of information from analysts to the market continues at a steady pace during the rest of the quarter. **Figure 3** shows that almost 50% of all consensus revisions in the entire quarter are captured between two weeks after an earnings announcement and two weeks prior to the next.⁸ On an analyst revision basis, 36% of all revisions occur during this time period.

These findings depict an active analyst community producing new forecasts throughout the quarter, even after the big wave of information from an earnings announcement wanes. A snapshot two weeks prior to the end of the quarter would summarize this information long after it has become impounded in market prices, again leaving an IRO at an information disadvantage.⁹

Almost 50% of all consensus revisions in the entire quarter are captured between two weeks after an earnings announcement and two weeks prior to the next.

⁸Since the quarter end date (T) and hence the last two weeks marker (T-14) differ across companies, **Figures 1, 4, and 5** mark the median T-14 date. The statistics in **Figure 3** do not rely on where we choose to mark (T-14) on other plots. We use the exact dates for each company to compute how much of the revisions occur between the first and last weeks of a quarter before aggregating the results.

⁹**Figure 2** does not explicitly show the percentages for the last two weeks prior to the end of the quarter. These numbers can be calculated as 100 minus the sum of the bars in **Figures 2 and 3**. For convenience, the percentages for the last two weeks prior to the end of the quarter are as follows: broker revisions, 13.8%; point-in-time consensus revisions, 17.4%; daily consensus revision, 17.8%.

Figures 4 and 5 depict the average time path of analyst and daily consensus revisions for the full quarter day by day.¹⁰ Drop lines in these charts mark the same time windows that are shown in **Figures 2 and 3**.¹¹ We choose these time frames because they approximately mark the rate at which revisions occur during the quarter.

FIGURE 4.
Cumulative Distribution of Analyst Revisions
S&P 500 Companies in Last Quarter

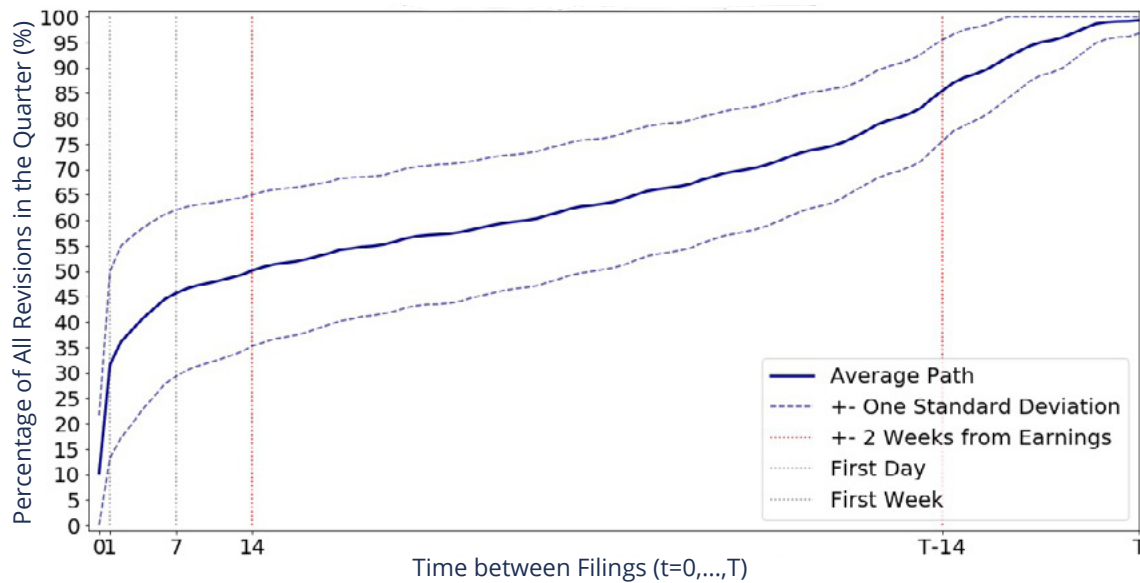
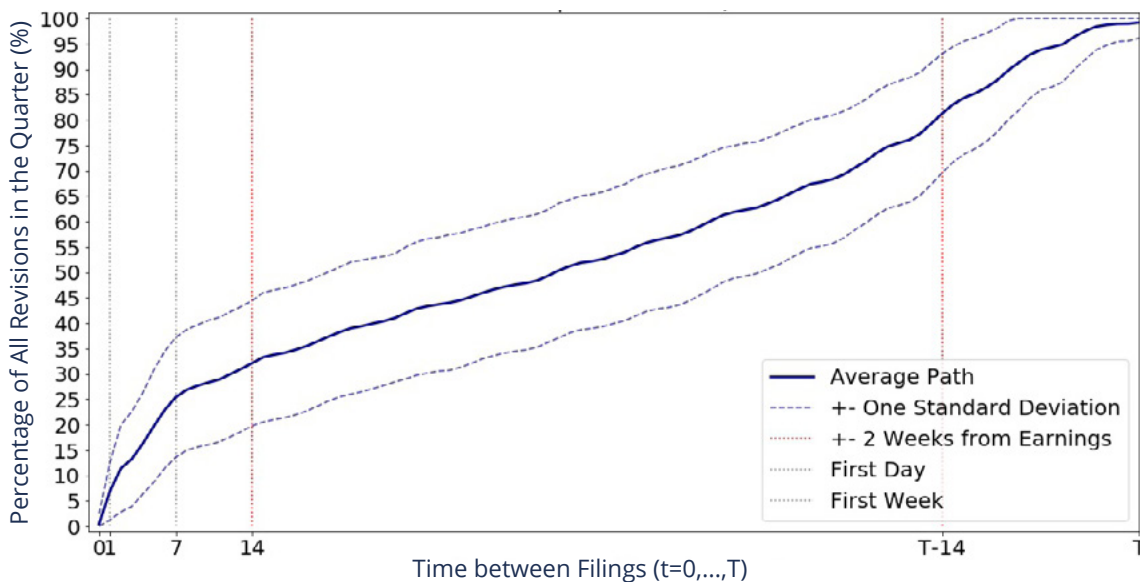


FIGURE 5.
Cumulative Distribution of Daily Consensus Revisions
S&P 500 Companies in Last Quarter



¹⁰ Point-in-time vs. daily consensus average paths look very similar and hence omitted for brevity.

¹¹ The markers for the quarter end date (T) and two weeks before (T-14) are not necessarily identical to **Figure 1**. In **Figures 4 and 5** the quarter end date (T) is taken to be the longest in the sample in order to aggregate daily paths consistently. See Appendix: Methodology for details. As a result of this methodology, **Figures 4 and 5** appear to have a longer two weeks at the end of the quarter compared to the beginning. In **Figure 1** we mark the median (T) on the plot so the first and last two weeks are easily comparable.

The biggest wave of analyst models are received and published on Visible Alpha within a day of the earnings announcement. After the first day, revisions begin to slow for the first week but the amount of revisions, especially on consensus, is still considerable. The revisions within the first week capture analyst models that are not received immediately after the earnings announcement, as well as models from analysts making follow-up revisions to their initial reaction of the earnings announcement.

After the first week, the rate at which new revisions occur appears to be constant until roughly two weeks prior to the end of the quarter. This is expected since analysts are no longer in a rush to update models all at the same time. Typically the daily consensus updates capture one or two analyst revisions at a time during this intra-quarter period. As **Figure 3** also shows, the cumulative effect of these continuous revisions on consensus can be very large; almost half of the daily consensus revisions occur between the first and last two weeks of the quarter. Around the last two weeks, analysts present their final opinion of the quarter, which makes up 13-17% of all quarterly revisions. Analysts generally do not appear to publish any new opinions in the final few days prior to the next earnings announcement.

III. CASE STUDIES

There is a substantial amount of variation in the average path of revisions across companies, especially from the beginning to the midpoint of the quarter. Dashed lines in **Figures 4** and **5** illustrate one standard deviation above and below the average.¹² The higher line represents roughly 25% of companies that had at least 60% of their analyst revisions for the quarter within the first week. Similarly, the lower line represents roughly 25% of companies that had at most 30% of their analyst revisions for the quarter within the first week.

It is tempting to argue that the differences in revision patterns is a result of differences in broker count. However, the average broker count for these two sets of companies, ranked by what fraction of the analyst revisions occurred by the first week, differs by one to two brokers and are in line with the broader sample median of 14.¹³

The difference in revision patterns is more likely driven by company specific developments during the quarter. To illustrate this view, **Figures 6** and **7** compare analyst revisions for Nvidia (“NVDA”) and Goldman Sachs (“GS_US”) in their last fiscal quarters. Both companies had 22 analysts participating in consensus during this period. However, they had 27 and 48 analyst revisions, respectively.¹⁴

¹² In **Figures 4** and **5** one standard deviation above the mean line is capped at 100%.

¹³ See **Figure 8** in the Appendix.

¹⁴ Consensus revision patterns are similar to analyst revision patterns and hence, excluded for brevity. By the second week, NVDA had 30% of daily consensus revisions whereas GS_US had 22%

On the first day alone, Visible Alpha received 19 analyst revisions for Nvidia, and by Day 4 received 22 revisions from 22 analysts. The remaining analyst revisions were steady throughout this rather uneventful quarter.

Goldman Sachs had a more eventful quarter than Nvidia. The company has been going through a rumored reorganization since the beginning of the quarter, which resulted in heightened uncertainty with the anticipation of the first ever investor day. They announced a reclassification of business segments prior to the earnings announcement. As shown in **Figure 7**, this increase in analyst revisions came after the second snapshot, which is typically provided to IROs two weeks prior to the next earnings announcement. Except for brief interludes in the middle of the quarter, there were frequent analyst and consensus revisions on Goldman Sachs up until the end of the quarter, with several analysts pushing out three or more revisions.

Figures 6 and 7 illustrate the benefit of Visible Alpha’s point-in-time service over the “snapshot” approach to capturing consensus. For Nvidia, a snapshot two weeks after its earnings announcement is stale information for more than a week. For Goldman Sachs, there is no snapshot that would not become outdated within days given the rapid changes to the company’s outlook.

FIGURE 6.
Nvidia Analyst Revisions in the Last Quarter

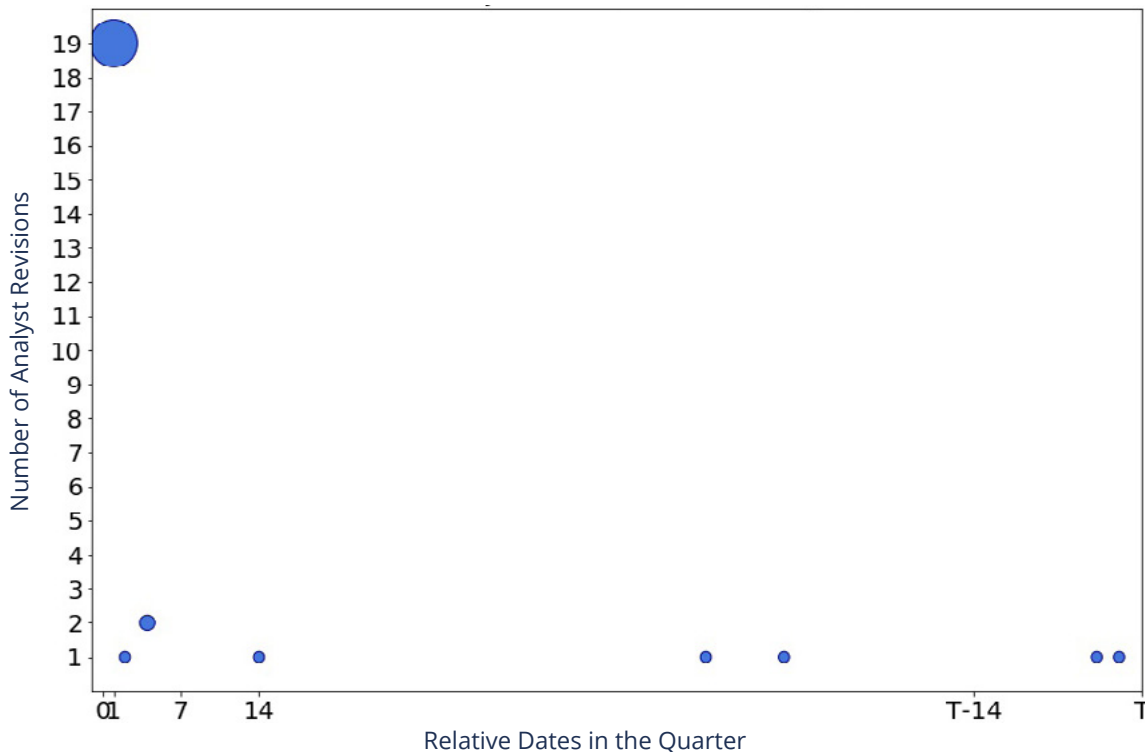
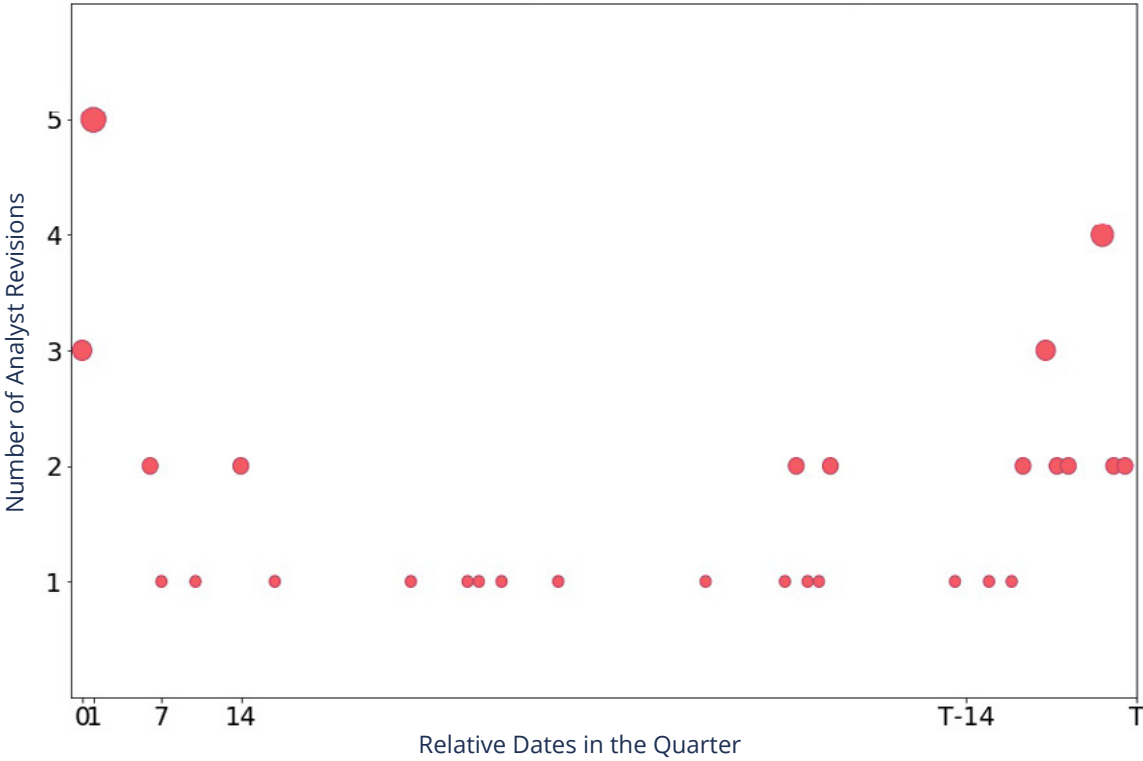


FIGURE 7.
Goldman Sachs Analyst Revisions in the Last Quarter



IV. CONCLUSION

We find that there is substantial value for investment relations professionals to receive and consume sell-side analyst models in as close to real time as possible throughout the quarter—especially for those who analyze deeper forecasts of key performance indicators of a business. Analysts revise their estimates rapidly after earnings announcements and continue keeping close track of their covered companies throughout the quarter. Stale snapshots of analyst sentiment cannot serve IROs in the face of the continuous flow of new information, and manually capturing the sheer volume of revisions is not feasible.

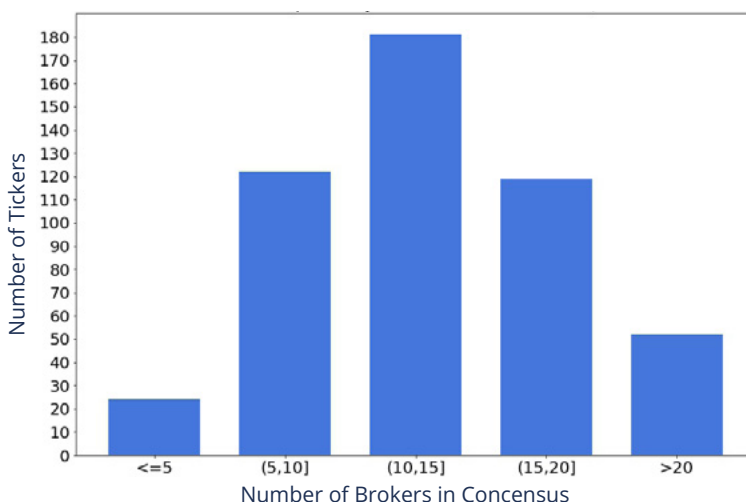
V. APPENDIX: METHODOLOGY

The dataset we analyze is composed of broker model and consensus revision updates available in the Visible Alpha platform. We specifically limit the sample of companies to those in the S&P 500.¹⁵ We use filings data to determine the beginning and end of the last filed quarter for each company.¹⁶

Each company is covered by a different number of brokers/analysts. **Figure 8** illustrates the distribution of companies by their coverage size on Visible Alpha. The average S&P 500 company is covered by 13-14 brokers who participate in consensus.¹⁷

Since a company covered by more analysts will have more revisions than a company covered by less analysts, we compute a normalized revision count metric for this study. We add all [analyst or consensus] revisions that happened for a company until a given day and represent this as a percentage of all [analyst or consensus] revisions that happen across the entire fiscal quarter for that company.¹⁸ For example, when 20 analysts covering a company make 10 revisions in the first week from a total of 40 revisions throughout the quarter, the metric is 25% on Day 7. It is also 25% for three analysts covering a different company, making three revisions by Day 7 from a total of 12 revisions throughout the quarter.

FIGURE 8.
S&P 500 Companies by Broker in the Last Quarter



¹⁵ As of January 23, 2020, Visible Alpha covers 498 companies included in S&P 500 index, excluding Loews Corp. and Verisign Inc.

¹⁶ We focus on the latest completed quarter for each company as of 1/23/2020 and capture all revisions during that quarter, which are available in Visible Alpha's "Activity Feed" section for each company. Since companies can label their fiscal quarters liberally, we track these quarters similar to (but not necessarily identical to) how the company refers to them; e.g., Nvidia completed its third quarter of 2019 ("3QFY-2019") while Goldman Sachs' last completed quarter is 4QFY-2019. In this example, we study all revisions in Nvidia's Activity Feed from the time Visible Alpha posted filings data for 3QFY-2019 at 8/15/2019 20:27:50 UTC until 4QFY-2019 filings data is posted on 11/14/2019 21:21:53 UTC.

¹⁷ As previously noted, this study excludes analyst models that were never included in consensus during the studied periods to make analyst and consensus revision counts consistent. Therefore, the broker count is potentially less than the broker count available on the Visible Alpha platform, which also includes brokers who are not participating in consensus.

¹⁸ In this study, we do not review the content of the revision. We simply count every time a new analyst model for a company was received, processed and published as new content on the platform. Analysts often update estimates for select line items, while not changing others, or revise all their estimates modestly in magnitude. We do not exclude any revisions along these dimensions.

We formally define normalized revision count metric as follows:
 Let R_{ct} denotes an indicator for whether analyst “a” has a revised estimate for company “c” at time “t.” The percentage of all revisions that take place until time t for a quarter with length T is defined by:

$$R_{ct} = \frac{\sum_{\tau=0}^{\tau=t} \sum_{\alpha=1}^{\alpha=t} R_{c\tau}^{\alpha}}{\sum_{\tau=0}^{\tau=T} \sum_{\alpha=1}^{\alpha=N} R_{c\tau}^{\alpha}} \times 100$$

We provide two versions of this metric for Visible Alpha consensus estimates. Point-in-time consensus revisions count every published update to consensus during the day. Daily consensus revisions count only the last consensus update in a day regardless of the number of analyst revisions incorporated into the new consensus.¹⁹

To compute an average S&P 500 distribution across time, Day 0 is the day of each company’s earnings announcement, and Day T is the day of the subsequent earnings announcement. Since every company has a slightly different quarter length, all company quarters are extended to conform to the longest quarter length in the sample once R_{ct} is computed at the company level. For example, if the company’s quarter ends in 89 days but is extended to fit 95 days to be comparable to another company, the added observations of the metric are set to 100 per cent as no revisions happened for this company from Day 89 to 95 for that completed quarter.

We find that there is substantial value for investor relations professionals to receive and consume sell-side analyst models in as close to real time as possible throughout the quarter.

¹⁹ See **Footnote 3** for a detailed explanation and example.

ABOUT VISIBLE ALPHA

Since Visible Alpha's commercial launch in February 2017, the company has been helping investment firms of all sizes and geographies discover ideas through its deep consensus platform and track and value research for MiFID II compliance. Visible Alpha creates a unified consumption and collaboration experience across research reports, analyst models and corporate access events and enables clients to discover, track, budget, value and pay for research content. Visible Alpha has a growing client base with \$17 trillion in AUM, more than 600 banks contributing content, and over 500 employees globally. The company is backed by the world's leading investment banks.

CONTACT US

visiblealpha.com | info@visiblealpha.com

A dark blue background featuring a complex financial data visualization. It includes a candlestick chart with red and green bars, a line graph with a white trend line, and a bar chart with purple and blue bars. A dashed white line and a solid white line are also visible. The number '11,00.00' is displayed in a light blue font. The overall aesthetic is professional and data-driven.