When the Pieces Move: Do Financial Analysts Pick Up On Segment Reporting Reshuffling?

Abstract

This study investigates changes in segment reporting, particularly instances where firms reshuffle the composition of reportable segments without altering their labels or number. We identify these events using a novel method based on inconsistencies in comparative segment data and classify them as "explained" or "unexplained" based on disclosure in the notes to financial statements. Analyzing a large sample of U.S. multi-segment firms from 2001 to 2023, we find that reshuffling often occurs when firms face performance deterioration. Reshuffled segment reporting appears to be informative to financial analysts but only when it is accompanied by explanatory disclosures, which occur in less than half of cases. Our results highlight the limitations of current segment reporting standards and underscore the importance of transparency in segment reporting.

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1. Synopsis and Insights for Standard Setters

Financial analysts are sophisticated users of financial disclosures, intimately familiar with the companies they cover (Brown, Call, Clement, & Sharp, 2015). Part of their role as information intermediaries is to process the information companies disclose. The management approach embedded in the current disclosure requirements in segment reporting may impact the quality of reportable segments and impair analysts' ability to forecast earnings (André, Filip, & Moldovan, 2016). Managers may use this flexibility to decrease the quality of the segmentation for various incentives. If managers want to hide the profitability or risk of some of their operating segments, they could improperly aggregate operating segments into reportable segments. Alternatively, managers can decide to improve the quality of the segmentation to better reflect the internal organization of the company, and the view management has on it. To achieve this, managers could potentially change the composition of the reportable segments without "visibly" changing the named reportable segments, which we refer to as "reshuffling". When the scope of the company's business activity did not change, such reshuffling in reportable segments is entirely discretionary.

Any change in segment reporting inherently disrupts the time-series continuity that financial analysts rely on. In practice, when forecasting the performance of multi-segment firms, analysts typically begin by projecting future earnings at the segment level (You, 2014; Durney, Gee, & Wiebe, 2024). As such, maintaining consistency in segmentation over time is essential for enabling robust forward-looking analyses. When firms explicitly communicate changes in segment reporting, analysts can adjust their models accordingly. However, in the absence of such explanations, analysts may unknowingly base their forecasts on non-comparable data—effectively

comparing apples to oranges. Our paper examines this issue by focusing on the usefulness of disclosures about segment reporting reshuffling to financial analysts.

The volume of financial disclosures has grown steadily over recent decades (Cazier and Pfeiffer 2016). This trend has contributed to an information overload, making it increasingly difficult for analysts "to wade through the volume of information to ferret out the most relevant" (SEC Chairman Mary Jo White in a 2013 speech). In such an environment, even material changes in disclosure risk going unnoticed, obscured by the sheer breadth of reported information (Drake, Hales, & Rees, 2019). Our study directly investigates this concern by testing whether financial analysts pick up on segment reporting reshuffling depending on whether the reshuffling is explained. In the absence of specific regulatory guidance on how and when such changes should be communicated, our findings offer practical implications for standard-setters and regulators seeking to enhance transparency and improve the quality of financial reporting.

We examine a long time-series of U.S. diversified companies to identify instances in which firms reshuffle their reportable segments—where managers reconfigure the composition of reportable segments—that are not due to acquisitions or divestitures or discontinued operations. To capture meaningful reshuffling of reportable segments, we focus on reshufflings that are material, defined as a change in segment profit exceeding 0.5% of total assets. We further classify these events based on whether the change is explained in the financial statements ("explained" reshuffling) or occurs without any disclosure or justification ("unexplained" reshuffling). We find that 15% of firms engage in segment reporting reshuffling at least once during our sample period. Of these events, 42% are classified as explained and 58% as unexplained.

First, we find that segment reshufflings are more likely to happen when firms experience negative changes in revenue, exhibit lower profitability, and are larger in terms of total assets. The

likelihood of managers providing an explanation for the reshuffling increases when firms report segments based on operating units. Overall, these findings suggest that managers are more inclined to restructure segment disclosures in response to deteriorating firm performance.

Second, we test whether segment reporting reshuffling is informative to financial analysts by focusing on earnings forecast errors and dispersion. Using a staggered difference-in-differences (DiD) framework as our main empirical strategy, we find that, on average, segment reshuffling does not significantly impact analysts' forecasting performance. However, when managers provide an explanation for the segment change, we observe a notable improvement in both forecast errors and a reduction in dispersion. This is not the case for unexplained reshufflings.

In a cross-sectional sectional test, we find evidence that the results are mainly driven by reshuffling of operating segments, rather than geographic segments. This is consistent with the idea that reporting operating segments allows more managerial discretion in how segments are aggregated.

We next run a battery of tests to make sure that our results are robust to different specifications. First, we run a within sample analysis, comparing the pre- and post-reshuffling periods while using each firm as its own control. Second, we use a matched control sample based on the variables included in the determinants model. Third, we restrict the sample to firms that have only one segment reporting reshuffling during the sample period. Across all these tests, the results remain consistent with our main findings.

This study makes several contributions to the accounting literature. First, we contribute to the literature on financial analysts by showing that changing the composition of reportable segments—particularly when explained—improves analysts' ability to value firms, as evidenced by shifts in forecast error and dispersion. Our findings highlight how the structure and transparency

of segment disclosures shape the information environment that financial analysts rely on. In this sense, we contribute to the long stream of literature that examines the informativeness of segment reporting to financial analysts, whether in terms of the split across segments (e.g., André et al. 2016; Song 2021; Kajüter and Nienhaus 2017; He, Evans, and He 2016; Park 2011; Ettredge, Kwon, Smith, & Stone, 2006; Berger and Hann 2003; Botosan and Stanford 2005; Kinney 1971; Collins 1976; Swaminathan 1991) or in terms of the segment-level line items disclosed (e.g., Durney et al. 2024; Göttsche, Küster, and Steindl 2021; Gutsche and Rif 2023; Lail, Thomas, and Winterbotham 2014).

Second, we provide evidence on the value of disclosure that contextualizes accounting numbers. When managers explain segment reshufflings, financial analysts find that disclosure informative; however, when managers leave segment reshuffling unexplained (i.e., no additional disclosure to bring attention to the change), the reshuffling is not informative to financial analysts. Prior literature often defines the quality of narrative reporting in terms of the "meaning" it conveys to investors and stakeholders, i.e., its decision usefulness (Michelon, Trojanowski and Sealy 2022; Beyer et al. 2010). For instance, Hope (2003) finds that the disclosure of accounting policies relates negatively to analyst earnings forecast error and dispersion. In addition, interviews with sell-side analysts and professional investors reveal that these sophisticated users of corporate disclosure place significant weight on narrative disclosures (e.g., Barker and Imam 2008; Cascino et al. 2016). Our findings further underscore the importance of narrative disclosures (i.e., narrative reporting) that accompany accounting numbers.

Third, we inform ongoing regulatory discussions by demonstrating that the absence of guidance on when and how firms should disclose changes in segment reporting can lead to inconsistent practices. Our novel methodology to capture reshuffling in segment reporting could

4

also be used by regulators to identify situations where managers change the composition of segments in a discretionary way. Our results suggest that clearer standards could enhance transparency and comparability in financial reporting, ultimately supporting more informed decision-making by market participants.

2. Institutional Background and Theoretical Development

Institutional background

Segment reporting in the U.S. is governed by Accounting Standards Codification (ASC) Topic 280, Segment Reporting. This standard, initially introduced as SFAS 131 and effective for fiscal years beginning after December 15, 1997, marked a departure from the previous prescriptive model of SFAS 14 and adopts the "management approach".[1] Under ASC 280, companies are required to identify operating segments, defined as components of a business that engage in revenue-generating activities and for which discrete financial information is available.[2]

One of the key aspects of ASC 280 is the significant discretion it affords managers in deciding how to define, group, and disclose segments. While firms must disclose certain quantitative information for each reportable segment, as well as entity-wide disclosures related to products, geographic areas, and major customers, the standard does not provide guidelines on how or when changes to segment reporting must be communicated to external stakeholders. Beyond the requirement to restate prior-period comparative figures under the new segmentation scheme, there is no explicit obligation for management to provide a detailed explanation of changes in segment composition, aggregation, or disclosure strategy.

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[1] Starting in 2009, the FASB codified SFAS 131 as ASC 280.
[2] A robust stream of research has examined the immediate changes in segment reporting upon adopting ASC 280 compared to the previous standard and generally finds that more firms disclose as multi-segment and that multi-segment firms disclose more segments after adopting the new standard (e.g., Herrmann and Thomas 2000; Street, Nichols and Gray 2000; Berger and Hann 2003; Botosan and Stanford 2005). By focusing on the post-ASC 280 period, we aim to keep the institutional background relatively constant.

This discretion opens the door to potential strategic behavior by managers. Managers can adjust the composition or aggregation of segments not only to reflect genuine changes in the internal organization but also to serve proprietary interests, minimize agency conflicts, or obscure underperformance (e.g., Arya, Frimor and Mittendorf 2010; Bens, Berger and Monahan 2011; Berger and Hann 2007). Crucially, when these changes are not accompanied by managerial explanations, they constitute what we refer to as unexplained reshuffling—modifications that are discretionary and largely inconspicuous to external users.

Determinants of segment reporting reshuffling

If managers want to hide the profitability or risk of some of their operating segments, they could improperly aggregate operating segments into reportable segments. For example, they could aggregate loss-making with economically-different but profit-making operating segments so that the reportable segment shows an overall positive profit number. To achieve this, managers could potentially reshuffle the composition of the segments without "visibly" changing the named reportable segments. When the scope of the company's business activity did not change, such changes in reportable segments are entirely discretionary.

In an analytical paper modelling the segment aggregation decision as a function of firm performance, Ebert et al. (2016) offer the prediction that when companies incur losses, management will disaggregate information to show where the bad news come from. Negative changes in earnings could therefore drive managers to reshuffle reportable segments. Ebert et al. (2016) also predict that when companies make profits, management will aggregate segments more so as to hide any potential source of bad news. Bugeja, Czernkowski and Moran (2015) provide some evidence in this direction by showing that firms are reluctant to provide segment information whenever most of their segments are profitable. Haight (2019) finds that firms reporting small

consolidated losses are more likely to strategically allocate profits across business segments such that activities in industries with more frequent losses are bundled away from activities in industries with higher profit margins. Blanco, Garcia Lara and Tribo (2014) find that earnings quality influences segment disclosure. Building on these studies, we expect a nuanced situation empirically where important changes in performance could motivate managers to reshuffle segment reporting.

Financial analysts and segment reporting reshuffling

Given the pivotal role that segment information plays in analysts' forecasts and valuation models, the flexibility embedded in ASC 280 has important implications for financial analysts. When managers introduce changes, the comparability and transparency of segment disclosures may be compromised, potentially affecting analysts' ability to assess firm performance accurately.

Large, diversified corporations dominate the business world (Hannah, 1983) with about 30% of U.S. public companies operating in more than one business segment or region (Botosan, Huffman, & Stanford 2021). Corporate diversification arose when managers started applying modern portfolio theory (Markowitz 1952; Tobin 1958) to businesses to reduce firm-specific risk (Jensen and Meckling 1976). Diversifying firm operations across business activities, industries, or regions should lead to more stable earnings; if one industry or region is on a downtrend, another may rise. From an investor perspective, however, corporate diversification may not be desirable if diversifying risk in the individual investment portfolio could be achieved at a lower cost (Brealey and Myers 2000; Martin and Sayrak 2003). Disclosing the different risks of diversified companies came as a solution of compromise to allow investors to recalibrate their portfolios.

A large body of research highlights the challenges that diversified firms pose to financial analysts and the potential role of segment reporting in mitigating these difficulties. Diversified

firms are inherently complex and often trade at a discount due to the loss of information during consolidation (Orcutt, Watts, & Edwards 1968; Berger and Ofek 1995; Cohen and Lou 2012). Analysts face a costly and demanding task when valuing such firms (Bhushan 1989; Duru and Reeb 2002), particularly when their industry specialization does not align with the firm's multiple lines of business (Clement 1999; Gilson, Healy, Noe, & Palepu, 2001). As a result, forecast errors and inter-analyst disagreement are typically higher for multi-segment firms (Dunn and Nathan 2009; Feldman et al. 2014). Segment reporting was introduced as a regulatory solution to this loss of information, and empirical studies confirm that historical segment disclosures improve earnings forecasts and reduce information asymmetry (Behn et al. 2002; Berger and Hann 2003; Hope et al. 2008). However, segment information remains limited in scope and subject to managerial discretion (André et al. 2016; Bugeja et al. 2015). Other research shows that forward-looking segment disclosures are also valuable as they reduce both forecast error and disagreement, particularly when information asymmetry is high (André, Filip, and Moldovan 2019). These findings reinforce the idea that disaggregated, segment-specific disclosure supports financial analysts' bottom-up forecasting process (You 2014; Durney et al. 2024) and helps them navigate the valuation challenges posed by diversified firms.

Explained reshuffling of segment reporting provides analysts with a clearer understanding of a firm's evolving structure and strategic priorities. When management discloses and justifies the reasons behind segment reshuffling, e.g., internal reorganizations, new performance metrics, or strategic realignments, analysts gain forward-looking information that can improve the accuracy of their earnings models. These disclosures help bridge the gap between historical segment data and future performance expectations, reducing ambiguity and enabling more precise bottom-up forecasts. Furthermore, explained reshuffling may signal shifts in managerial focus or internal

performance evaluation, offering insights into which parts of the business are gaining or losing importance. In contrast to unexplained reshuffling, explained reshuffling reduces the risk of misinterpretation and creates a shared information set that fosters greater consensus among analysts. Thus, even if changes to segment composition introduce a break in the time series, transparency around those changes can mitigate disruption and enhance the usefulness of segment data for valuation and forecasting.

3. Research Design

Sample and Coding of Silent Changes

Panel A of Table 1 describes the sample construction. Our sample comprises U.S. publicly listed firms over the period 2001 to 2023. We begin by excluding financial firms and utilities due to their distinct financial structures, as well as single-segment firms, since the focus of our study is on segment disclosure behavior. We further eliminate firm-year observations involving acquisitions, divestitures, discontinued operations, or changes in fiscal year-end dates, as such events may necessitate non-discretionary changes in segment reporting. Following these criteria, our final sample consists of 13,391 firm-year observations spanning 3,150 unique firms.

We use segment-level data from Compustat Historical Segments to identify material segment changes over time. Our identification strategy builds on the methodology developed by Berger and Hann (2003) and Botosan and Stanford (2005) in the context of the first-time adoption of ASC 280, which leverages the requirement that firms provide comparative segment information for the prior year. Specifically, we compare the reported segment profit number disclosed in year *t*-1 with the comparative segment profit number disclosed in year *t* for the year *t*-1.[3] We flag a

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[3] ASC 280 does not define segment profit or loss, essentially allowing firms to report non-GAAP measures of profit or loss at segment level. As a result, as Botosan et al. (2021) also point out, Compustat uses seven different variables to capture segment-level profit measures. We therefore allow the specific definition of segment profit number to vary across firms.

material segment change when, between years t-1 and t, there is no change in the number or names of reportable segments, but the segment profit disclosed for year t-1 in the year t filing differs from the segment profit disclosed in the year t-1 filing for the same period. We use a materiality level of 0.5 percent of total assets to capture meaningful segment changes. Throughout the paper, we label these material segment changes as "reshuffling" of segment reporting, which indicate a change in the composition of the segments, but without a change in the name of the segment.[4]

To classify the reshuffling of segment reporting as either *Explained* or *Unexplained Reshuffling*, we extract the relevant segment reporting disclosures from the firms' 10-K filings available on SEC EDGAR. We leverage large language models (LLMs) to systematically parse the segment notes and identify whether management provides an explanation for the reshuffling. After using the LLM to flag potential explanatory language, we manually review the extracted disclosures to ensure accuracy and consistency in classification. Segment changes accompanied by a managerial explanation are labeled as *Explained Reshuffling*, while those without any such explanation are labeled as *Unexplained Reshuffling*. This process results in the identification of 635 *Reshuffled Segment Reporting* events (494 firms) (4.74 percent of full sample, 15 percent in terms of number of firms), of which 265 observations (231 firms) are classified as *Explained Reshuffling* (42 percent of reshuffled segment reporting) and 370 observations (302 firms) as *Unexplained Reshuffling* (58 percent of reshuffled segment reporting), as reported in Panel B of

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[4] Botosan et al. (2021) provide descriptive evidence on the consistency (or stability) of segment definitions over time by using of the unique segment identification code (*sid*) that Compustat assigns to each reportable segment of a firm. In contrast, however, our focus is on the reshuffling of segment definitions that does not amount to a new segmentation, therefore not prompting Compustat to change the unique segment identification codes. We use *sid* to condition that the segment name stays the same.

Table 1.[5] Appendix B includes examples of segment reporting reshuffling, as well as of *Explained* and *Unexplained Reshuffling*.

Empirical model for testing the determinants of reshuffling segment reporting

To examine the determinants of managers' decisions to reshuffle segment reporting, we estimate multivariate linear probability models where the dependent variable indicates whether a firm-year observation involves segment reporting reshuffling. Specifically, we estimate the following model:

$$Reshuffled\ Segment\ Reporting_{it} = \beta_0 + \gamma'X_{it} + \delta_j + \lambda_t + \varepsilon_{it} \qquad (1)$$

where $Reshuffled\ Segment\ Reporting_{it}$ is an indicator variable equal to one if firm i in year t reports a material segment reporting reshuffling, and zero otherwise. The vector X_{it} includes control variables capturing firm characteristics, as defined in Appendix A. δ_j represents industry fixed effects, and λ_t denotes year fixed effects. These fixed effects control for unobserved heterogeneity across industries and macroeconomic shocks over time, respectively. Standard errors are clustered at the firm level to account for potential serial correlation.

We estimate separate specifications where the dependent variable captures *(i)* any reshuffling of segment reporting, *(ii)* explained reshuffling, and *(iii)* unexplained reshuffling, allowing us to differentiate between changes accompanied by managerial explanations and those that are not.

Empirical Model for Testing the Informativeness of Segment Reporting Reshuffling on Analysts'
Forecast Errors and Dispersion

To evaluate the informational consequences of segment reporting reshuffling, we employ a staggered DiD research design. This approach allows us to compare changes in analysts' earnings

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[5] In comparison, for the period 2008 to 2017, Botosan et al. (2021) find that about 13% of firms without acquisition or divestiture activity change one or more segment definitions that lead to Compustat changing the unique segment identification codes for a firm.

forecast error and forecast dispersion before and after a reshuffling while controlling for firm and time-specific factors. Because firms in our sample experience reshuffling at different points in time, the staggered design accommodates this variation in treatment timing and enables the inclusion of all relevant observations across the sample period. Specifically, we estimate the following model:

$$Y_{it} = \beta_0 + \beta_1 Post_{it} + \gamma' X_{it} + \mu_i + \lambda_t + \varepsilon_{it} \qquad (2)$$

In equation (2), Y_{it} denotes the dependent variable, which is either analysts' earnings forecast error or forecast dispersion for firm i in year t. Forecast error is measured as the absolute difference between the consensus earnings forecast and actual earnings, scaled by the end-of-year share price. Forecast dispersion is defined as the natural logarithm of the standard deviation of analysts' earnings forecasts.

The main explanatory variable of interest, $Post_{it}$, is an indicator equal to one for the fiscal years following a reshuffling of segment reporting and zero otherwise. This specification allows us to assess whether analysts' forecast outcomes systematically differ following a segment reshuffling, relative both to the firm's own pre-reshuffling baseline and to firms that have either not yet reshuffled or never reshuffled their segments. We estimate separate regressions depending on whether the segment change is explained or unexplained, to distinguish the informational consequences of disclosure around segment reporting reshuffling.

The vector X_{it} includes a set of firm characteristics that may influence analysts' forecast behavior, such as firm size, leverage, profitability, and analyst coverage, as defined in Appendix A. Firm fixed effects μ_i control for time-invariant unobserved heterogeneity at the firm level, while year fixed effects λ_t absorb macroeconomic trends and common shocks across time.

By employing a staggered DiD design, we exploit both within-firm variation over time and cross-sectional variation in the timing of segment changes. This approach strengthens the identification of the impact of segment reporting reshuffling on analysts' forecast properties.

4. Empirical Results

Descriptive statistics

Table 2 presents descriptive statistics for the dependent and control variables used throughout the empirical analysis, after winsorizing continuous variables at the 1st and 99th percentiles. The number of observations drops to 7,601 for forecast error and 7,254 for forecast dispersion, due to the requirement that firms be covered by at least one and two financial analysts, respectively. Approximately 38% of firm-year observations exhibit a negative change in segment revenue (*NegChRevenue*), indicating that segment performance declines are a relatively common occurrence. The average firm in the sample is covered by roughly five financial analysts, although coverage is highly skewed—as shown by a large standard deviation (6.95) and a median of just two analysts. Return on assets has a slightly negative mean (-0.07), suggesting that a sizable portion of firms in the sample report losses.

Main results

Table 3 investigates the firm characteristics associated with the likelihood of reshuffling reportable segments, using multivariate linear probability models across three specifications: (1) reshuffled segment reporting, (2) explained reshufflings, and (3) unexplained reshufflings. Each set of models compares firms with a given type of reshuffling to firms that did not reshuffle segments during the sample period. The analysis includes industry and fiscal year fixed effects, and standard errors are clustered at the firm level.

We find that firms are more likely to engage in segment reshuffling, whether explained or unexplained, when they have lower profitability (*Return on Assets* is negative and consistently significant at least at the 10% level) and are larger in size (*Firm Size* is positive and consistently significant at the 1% level). Both *Reshuffled Segment Reporting* and *Unexplained Reshuffling* are also associated with a decline in revenues (*NegChRevenue* is positive and significant at the 10% level at the very least). *Reshuffled Segment Reporting* and *Explained Reshuffling* are more likely to occur in operating segments instead of geographic segments. This result is consistent with the idea that managers have more discretion in aggregating operating segments into reportable segments, whereas there is inherently less discretion in defining geographic segments.

Table 4 tests whether segment reporting reshuffling affects analyst forecast error and forecast dispersion, distinguishing between explained and unexplained reshuffling. The analysis compares treated firms, i.e., those that reshuffled segments at any point during the sample period, to a control group of firms that did not reshuffle segments during the sample period, with *Post* indicating the post-reshuffling period. Across all models we include firm and fiscal year fixed effects.

In Columns (1) and (2), which pool all material reshufflings regardless of disclosure type, we observe no statistically significant change in forecast error or dispersion following reshuffling. However, in columns (3) and (5), that focus specifically on *Explained Reshuffling*, we find a significant decrease both in forecast error (-0.0163, $p < 0.10$) and dispersion (-0.0207, $p < 0.05$). In contrast, columns (4) and (6) show that *Unexplained Reshuffling* is not significantly associated with either forecast error or dispersion. This could mean that analysts either do not detect these changes or do not perceive them as containing useful information. Chi-square tests confirm that the differences between *Explained* and *Unexplained Reshuffling* are statistically significant both

in terms of their impact on forecast error ($p < 0.10$) and forecast dispersion ($p < 0.05$). These tests reinforce the conclusion that disclosure matters. Specifically, analysts respond to segment changes only when firms provide accompanying disclosure, underscoring the importance of transparency in financial reporting.[6]

Cross-sectional test

We expect the informativeness of segment reshuffling to depend on both the type of segment affected and whether the change is accompanied by an explanation. Reshuffling involving operating segments, which reflect core business activities, should be more relevant to analysts' valuation models than changes to geographic segments, which are generally less integral to the forecasting process. Moreover, because managers have more discretion and flexibility in how operating segments are defined and aggregated, these changes offer greater potential for both strategic reporting and meaningful information, depending on the disclosure context.

Table 5 investigates whether the effects of segment reshuffling on analysts' forecast behavior differ based on the type of segment affected, namely operating or geographic. We estimate the impact of changes in each segment type on forecast error and dispersion, distinguishing between explained and unexplained reshufflings. Most of the effects observed in Table 5 stem from changes to operating segments, rather than geographic ones. In columns (1) and (2), operating segment reshufflings are marginally associated with lower forecast dispersion ($p <$ 0.10), while geographic changes show no significant impact on either forecast error or dispersion. When operating segment reshuffling is explained, i.e., columns (3) and (5), they lead to a

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[6] While we classify a segment reshuffling as "unexplained" based on the absence of a discussion in the 10-K filing, it is possible that some firms provide explanations through other channels such as earnings calls or investor presentations. Nonetheless, our results at the very least underscore the importance of including such explanations in the 10-K, where analysts are most likely to systematically access and incorporate them.

significant decrease in both forecast error and dispersion, indicating that analysts find these changes meaningful for valuation both in terms of accuracy and for resolving uncertainty.

We are cautious about drawing strong conclusions from the cross-sectional tests, as most segment reporting reshufflings occur in operating segments (550 of 635 reshuffling events, or about 87 percent). In contrast, reshufflings involving geographic segments represent a minority of cases (94 events, or about 15 percent), while nine firm-year observations involve reshufflings in both operating and geographic segmentations. Given the relatively small effective sample size, the statistical power of the test may be limited for *POST_Geographic Segments*.

Robustness tests

We conduct a series of robustness tests to confirm that our main findings are not driven by unobserved heterogeneity, sample composition, or selection bias. Across all tests, the results consistently show that explained segment reshufflings are informative for analysts' forecasts, while unexplained reshuffling is not.

Table 6 restricts the analysis to within-firm variation, using only firms that experience a segment reshuffling. This design controls for time-invariant firm characteristics. Even within this narrower sample, explained reshuffling significantly decreases both forecast error and dispersion, whereas unexplained reshuffling remains insignificant.

Table 7 uses a propensity score matched sample to ensure results are not driven by systematic firm differences. The matching is done using propensity scores from a logit model on all determinants from Table 3, one-to-one closest neighbour, without replacement, within a caliper distance of 0.005, and imposing exact matching on fiscal year. Explained reshufflings continue to predict lower forecast error and dispersion (Panel A). With a matched sample in place, Panel B takes advantage of the staggered nature of segment reshufflings to narrow the treatment window

for both treated firms and their matched controls. In this tighter specification, explained reshuffling continues to lead to significantly lower dispersion, while the effect on forecast error is directionally consistent but insignificant at traditional levels. Similar to our previous results, unexplained reshuffling remains uninformative.

Table 8 tests whether the effects are driven by firms with multiple reshufflings of segment reporting over our sample period. Focusing on single-event reshufflings, we find that explained reshuffling still decreases forecast error significantly, both in unmatched (Panel A) and matched (Panel B) samples. Unexplained reshufflings again show no effect.

Together, these tests confirm the robustness of our results. Specifically, only disclosed segment reshufflings shape analysts' forecasts, emphasizing the critical role of transparency in the usefulness of segment reporting.

5. Conclusion

This study investigates a subtle yet consequential aspect of financial reporting, i.e., material discretionary changes in segment disclosure not due to acquisitions, divestitures, or discontinued operations, that we call segment reporting reshuffling. Using a large sample of U.S. diversified firms from 2001 to 2023, we uncover that a non-negligible share of firms reshuffle their reportable segments in a discretionary manner, not prompted by observable structural changes. Among these cases, about half are not accompanied by any managerial explanation, making them "unexplained", while the other half include some disclosure in the notes to financial statements clarifying the nature or rationale of the reshuffling. This split highlights the discretionary leeway afforded to managers under current standards and the inconsistent transparency in how segment changes are reported.

Our findings reveal that segment reporting reshuffling is more likely to occur in firms experiencing deteriorating performance and that are larger in size. This pattern is consistent with managerial incentives to obscure underperformance through segment aggregation or reclassification. However, despite the strategic nature of these changes, we find that financial analysts do not systematically revise their forecasts in response to segment reshuffling. When we distinguish between explained and unexplained segment reshufflings, we find that only explained reshuffling elicits a response from financial analysts. In these cases, both forecast error and dispersion decrease, suggesting that analysts recognize the information as relevant. These effects are strongest when the reshuffling affects operating segments, rather than geographic ones, highlighting the greater importance of business structure in analysts' valuation models.

In sum, segment reshuffling in itself is not inherently problematic—but silence about such changes is. As long as reporting standards allow for discretionary reshaping of disclosures without mandatory explanations, the burden of detecting and interpreting these shifts falls on analysts and investors, who may not always succeed. Our evidence advocates for regulatory reforms that promote greater transparency in segment reporting, ensuring that the picture financial statements paint is as complete and as interpretable as possible. We call for clearer guidance on when and how firms should disclose changes in reportable segments to support informed decision-making.

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

During the preparation of this work, the authors used ChatGPT in order to improve the English-language exposition and readability. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

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Appendix A: Variable Measurement

Variable	Definition [Source]
Reshuffled Segment Reporting	Indicator variable that takes the value 1 if there is a material difference between the segment profit for any reportable segment (of any type, operating or geographic) of the firm for year *t*-1 as reported in year *t* versus as reported in year *t*-1; zero otherwise. The materiality threshold is set at 0.5% of total assets (*at*) as of year *t* fiscal year-end. As per ASC 280, 'Corporate' and 'Other' are not considered reportable segments. [Compustat Segments Historical]
Explained Reshuffling	Indicator variable that takes the value 1 if the 10-K filing for year *t* contains disclosure that explains the segment reporting reshuffling between years *t* and *t*-1, and 0 otherwise. [Manual coding, 10-K filings]
Unexplained Reshuffling	Indicator variable that takes the value 1 if the 10-K filing for year *t* does *not* contain disclosure to explain the segment reporting reshuffling between years *t* and *t*-1, and 0 otherwise. [Manual coding, 10-K filings]
POST	Indicator variable that takes the value 1 for the fiscal years after a segment change in reportable segments, and 0 for the fiscal years before. The type of segment change considered (material, explained, unexplained) is specified in each regression model that includes *POST*.
POST_Operating Segments	Indicator variable that takes the value 1 for the fiscal years after a segment reporting reshuffling in operating segments, and 0 for the fiscal years before. The type of segment reporting reshuffling considered (all, explained, unexplained) is specified in each regression model that includes *POST_Operating Segments*. See definition of operating segments below.
POST_Geographic Segments	Indicator variable that takes the value 1 for the fiscal years after a segment reporting reshuffling in the segmentation by geography, and 0 for the fiscal years before. The type of segment reporting reshuffling considered (all, explained, unexplained) is specified in each regression model that includes *POST_Geographic Segments*. See definition of geographic segments below.
Forecast Error	Analyst forecast error computed as the absolute difference between the financial analyst mean consensus (unadjusted, *meanest*) EPS forecast for the year *t*+1 published four months after the fiscal year-end for the year *t* and actual EPS for the year *t*+1 (unadjusted for stock splits), divided by share price at fiscal year-end for the year *t*+1. [IBES Summary, CRSP]
Dispersion	Analyst forecast dispersion computed as one plus the natural logarithm of the standard deviation of EPS forecasts for *t*+1 published four months after year *t* fiscal year-end (*stdev*). The variable is missing if there is zero or only one analyst following the firm. [IBES Summary]
NegChRevenue	Indicator variable that takes the value 1 if the difference between total revenue (*sale*) in year *t* and in year *t*-1 is less than zero, and 0 otherwise. [Compustat]
Coverage	Residual from a regression of analyst coverage on firm size (as defined above). Analyst coverage is the natural logarithm of one plus the number

	of sell-side financial analysts following the firm based on the average number of forecasts included in the consensus four months after fiscal year-end (*numest*). The number of analysts is set to 0 if no analysts follow the firm. [IBES Summary]
Intangibles	Intangible assets (*intan*) scaled by total assets as of fiscal year-end (*at*). [Compustat]
Firm Size (log)	Natural logarithm of total assets as of fiscal-year end (*at*). [Compustat]
ROA	Return on assets computed as income before extraordinary items (*ib*) divided by fiscal year-end total assets (*at*). [Compustat]
Leverage	Total liabilities (*lt*) divided by total assets (*at*). [Compustat]
Book-to-market	Book to market ratio (*ceq* / (*csho* * *prcc_f*)). [Compustat]
Operating Segments	Indicator variable that takes the value 1 if the firm reports segments by operations or by lines or business in year *t*, and 0 otherwise. (*stype* = "BUSSEG" or "OPSEG") [Compustat Segments Historical]
Geographic Segments	Indicator variable that takes the value 1 if the firm reports segments by geography in year *t*, and 0 otherwise. (*stype* = "GEOSEG") [Compustat Segments Historical]

Appendix B: Examples of Reshuffled Segment Reporting Identified in This Study

Identification of Reshuffled Segment Reporting

To illustrate the segment reporting reshuffling identified in this study, consider the example of Lionbridge Technologies Inc. (gvkey 123016, cik 0001058299). Segment information reported in the fiscal year 2008 for the fiscal year 2008 is as follows:

	GLC	GDT	Interpretation	Corporate and Other
2008				
External revenue	$338,831,000	$95,492,000	$27,109,000	$ —
Cost of revenue (exclusive of depreciation and amortization)	234,508,000	59,541,000	20,088,000	—
Depreciation and amortization	3,389,000	710,000	166,000	8,917,000
Goodwill impairment	120,587,000	—	—	—
Other operating expenses	78,503,000	14,239,000	3,376,000	—
Segment contribution	(98,156,000)	21,002,000	3,479,000	(8,917,000)
Interest expense and other unallocated items	—	—	—	(37,710,000)
Income (loss) before income taxes	(98,156,000)	21,002,000	3,479,000	(46,627,000)
Benefit from income taxes	—	—	—	997,000
Net income (loss)	(98,156,000)	21,002,000	3,479,000	(45,630,000)

Source: 10-K filing available at https://www.sec.gov/Archives/edgar/data/1058299/000119312509053906/d10k.htm, Note 13 Operating Segments and Geographical Information.

Comparative segment information reported in the fiscal year 2009 for the fiscal year 2008 is as follows:

	GLC	GDT	Interpretation	Corporate and Other
2009				
External revenue	$281,734,000	$84,203,000	$23,313,000	$ —
Cost of revenue (exclusive of depreciation and amortization)	190,719,000	54,688,000	18,631,000	—
Depreciation and amortization	2,993,000	993,000	143,000	6,010,000
Other operating expenses	70,863,000	12,013,000	2,532,000	—
Segment contribution	17,159,000	16,509,000	2,007,000	(6,010,000)
Interest expense and other unallocated items	—	—	—	(33,857,000)
Income (loss) before income taxes	17,159,000	16,509,000	2,007,000	(39,867,000)
Benefit from income taxes	—	—	—	184,000
Net income (loss)	17,159,000	16,509,000	2,007,000	(39,683,000)
2008				
External revenue	$338,831,000	$95,492,000	$27,109,000	$ —
Cost of revenue (exclusive of depreciation and amortization)	234,508,000	59,541,000	20,088,000	—
Depreciation and amortization	3,389,000	710,000	166,000	8,917,000
Goodwill impairment	120,587,000	—	—	—
Other operating expenses	79,578,000	15,433,000	3,661,000	—
Segment contribution	(99,231,000)	19,808,000	3,194,000	(8,917,000)
Interest expense and other unallocated items	—	—	—	(35,156,000)
Income (loss) before income taxes	(99,231,000)	19,808,000	3,194,000	(44,073,000)
Benefit from income taxes	—	—	—	997,000
Net income (loss)	(99,231,000)	19,808,000	3,194,000	(43,076,000)

Source: 10-K filing available at https://www.sec.gov/Archives/edgar/data/1058299/000119312510058432/d10k.htm, Note 12 Operating Segments and Geographical Information

Even though there is no change in segment names, nor a change in the number of segments reported in 2009 compared to 2008, there is a change in the composition of the segments evidenced by the different amounts for Net income (loss) for the three segments in the year 2008 as reported in 2008 versus as reported in 2009. Specifically, net loss for the segment "GLC" is $99.231 million as reported in 2009 but $98.156 million as reported in 2008, for the same fiscal year 2008. Similarly, there are differences in the other two segments such that net income for the other two segments increases for the year 2008 as reported in 2009 versus as reported in 2008. In this case, it looks like the firm has reclassified some operating expenses (Other operating expenses) from the segments "GDT" and "Interpretation" to the segment "GLC".

In order to focus on meaningful reshuffling, we compare the difference in segment profit following this reshuffling to a level of materiality computed as 0.5% of total assets as of fiscal year 2009. In the case of Lionbridge Technologies, total assets for 2009 is $152.719 million, meaning that the materiality level relevant to us is $763,595. The difference in segment loss for "GLC" is $1,075,000, which is above the materiality level. Therefore, we code this observation as *Reshuffled Segment Reporting* = 1 in fiscal year 2009.

Identification of Explained and Unexplained Reshuffling

After identifying reshuffled segment reporting, we classify reshuffling into explained or unexplained. To do so, we review the 10-K filings segment note, assisted by large language model (LLM) extraction and manual validation. Lacking any explanation for the reshuffling, we code the reshuffling as unexplained (i.e., *Unexplained Reshuffling* = 1). Continuing the example of Lionbridge Technologies above, we search the segment note in 10-K filing for fiscal year 2009 for an explanation of the difference in segment profit. There is no explanation of a segment reshuffling in 2009.

An example of explained reshuffling is that of Mammoth Energy Services Inc. (gvkey 021834, cik 0001679268) for fiscal year 2021. Mammoth includes the following in Note 20 Reporting Segments and Geographic Areas of the 2021 10-K report to explain the reshuffling, therefore we code *Explained Reshuffling* = 1.

"Prior to the year ended December 31, 2021, the Company included Aquawolf in its 'All Other' reconciling column. Based on its assessment of FASB ASC 280, Segment Reporting, guidance at December 31, 2021, the Company changed its presentation in 2021 to move Aquawolf to the Infrastructure segment. The results for the years ended December 31, 2020 and 2019 have been retroactively adjusted to reflect this change." (https://www.sec.gov/Archives/edgar/data/1679268/000167926822000006/tusk-20211231.htm)

Table 1: Sample

Panel A: Sample construction

	Firm-year observations	Firms
Observations on Compustat North America Annual for fiscal years between 2001 and 2023 (as of Feb 2025) with non-missing and non-negative total assets	206,318	21,891
Less:		
Non-US firms (*fic* not "USA")	(60,799)	
Financials and utilities	(39,084)	
Single-segment firms	(67,889)	
Observations with acquisitions, divestitures, discontinued operations	(21,732)	
Changes in fiscal year end date	(84)	
Without data for basic control variables	(1,607)	
With immaterial segment changes at any point during sample period	(1,732)	
Full sample firm-year observations	13,391	3,150
Of which:		
Clean control sample (never treated)	9,618	2,643

Panel B: Reshuffled Segment Reporting events

	Firm-year observations	Firms
Reshuffled Segment Reporting	635	494
Of which:		
Explained Reshuffling	265	231
Unexplained Reshuffling	370	302

This table reports the steps of the sample construction (Panel A) and details on the sample composition (Panel B). In order to count a firm's segments and obtain the segment changes measures, we remove from Compustat Historical Segments the state segments (*stype* = "STSEG"), segments without an identification code (*sid* = 99), segments called "Corporate", "No Operations", or "Eliminations", segments with negative, zero, or missing revenue, and segments with missing profit or loss item, which include entity-wide disclosures. We then count the number of business, geographic, or operating segments per firm-year (with the date of the financial statements the same as the date of the segment information) and further remove those observations that have only one segment across these segment types. We identify segment reporting reshuffling as described in our methods section and further remove those firms with immaterial segment reporting reshuffling, i.e., difference between initial segment profit and comparative segment profit numbers is below the materiality level of 0.5% of total assets. The clean control sample contains the firms that never had any type of segment reporting reshuffling throughout the sample period. In Panel B, we present the sample distribution by number of reshuffled segment reporting events, split between explained and unexplained.

Table 2: Summary statistics

Variable	N	Mean	SD	p25	p50	p75
NegChRevenue	13391	0.38	0.48	0	0	1
Coverage (raw)	13391	5.05	6.95	0	2	7
Coverage (log, residual)	13391	0.09	0.71	-0.38	0.14	0.61
Intangibles	13391	0.14	0.18	0.01	0.07	0.22
Return on Assets	13391	-0.07	0.37	-0.06	0.03	0.07
Leverage	13391	0.28	0.31	0.04	0.21	0.39
Book-to-market	13391	0.32	2.42	0.21	0.47	0.85
Firm Size (total assets, millions $)	13391	2863.41	7828.74	56.04	334.95	1750.00
Firm Size (log)	13391	5.74	2.34	4.03	5.81	7.47
Forecast Error	7601	0.06	0.17	0.00	0.01	0.04
Dispersion (log)	7254	0.16	0.21	0.04	0.09	0.19

This table shows basic descriptive statistics for the dependent and control variables included in the analyses. Sample size decreases for *Forecast Error* and *Dispersion* because these variables require the firm to be covered by at least one, and at least two financial analysts respectively. Continuous variables are winsorized at 1 and 99 percent. Appendix A defines all variables.

Table 3: Determinants of segment changes

VARIABLES	Reshuffled Segment Reporting		Explained Reshuffling		Unexplained Reshuffling	
	(1)	(2)	(3)	(4)	(5)	(6)
NegChRevenue	0.0101**	0.0100**	0.0048	0.0048	0.0071*	0.0071*
	(2.33)	(2.32)	(1.49)	(1.50)	(1.90)	(1.89)
Coverage log (residual)	-0.0007	-0.0001	-0.0016	-0.0012	0.0014	0.0017
	(-0.20)	(-0.03)	(-0.68)	(-0.51)	(0.50)	(0.59)
Intangibles	0.0082	0.0057	0.0067	0.0050	-0.0022	-0.0035
	(0.65)	(0.44)	(0.72)	(0.53)	(-0.20)	(-0.32)
Return on Assets	-0.0137**	-0.0135**	-0.0070**	-0.0067**	-0.0092*	-0.0090*
	(-2.35)	(-2.31)	(-2.22)	(-2.14)	(-1.70)	(-1.66)
Leverage	-0.0027	-0.0024	-0.0033	-0.0029	-0.0027	-0.0024
	(-0.39)	(-0.34)	(-0.75)	(-0.66)	(-0.43)	(-0.38)
Book-to-Market	0.0002	0.0002	0.0005	0.0006	-0.0004	-0.0004
	(0.21)	(0.24)	(1.12)	(1.17)	(-0.64)	(-0.63)
Firm Size	0.0076***	0.0075***	0.0062***	0.0062***	0.0034***	0.0034***
	(6.87)	(6.84)	(7.39)	(7.31)	(3.64)	(3.60)
Operating Segments		0.0373**		0.0218**		0.0237
		(2.42)		(2.19)		(1.57)
Geographic Segments		0.0229		0.0092		0.0187
		(1.51)		(0.95)		(1.26)
Constant	-0.0306***	-0.0666***	-0.0257***	-0.0458***	-0.0134**	-0.0370**
	(-4.04)	(-3.84)	(-4.60)	(-4.07)	(-2.18)	(-2.24)
Observations	13,391	13,391	11,451	11,451	11,980	11,980
Adjusted R^2	0.012	0.013	0.009	0.010	0.010	0.010
Industry and Fiscal Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustering by Firm	Yes	Yes	Yes	Yes	Yes	Yes

This table reports results from multivariate linear probability models to test the determinants of segment changes. The dependent variable is an indicator variable that indicates the firm-year observation when the segment change took place and is zero otherwise. In columns (1) and (2), the dependent variable is *Material SegCh* and the model is estimated on the sample of firms with material segment changes at any time during the sample period and the firms that never had any segment change during our sample period (i.e., never treated), which constitutes the full sample. In columns (3) and (4), the dependent variable is *Explained SegCh* and the model is estimated on the sample of firms with explained segment changes at any time during the sample period and the firms never treated. In columns (5) and (6), the dependent variable is *Unexplained SegCh* and the model is estimated on the sample of firms with segment changes not explained at any time during the sample period and the firms never treated. Continuous variables are winsorized at 1 and 99%. Appendix A defines all variables. Statistical significance is based on two-tailed *t*-tests and is indicated as follows: *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1.

Table 4: Staggered difference-in-differences full sample analysis on the informativeness of explained versus unexplained segment reporting reshuffling

Dep variable	Forecast Error	Dispersion	Forecast Error		Dispersion	
	Reshuffled Segment Reportint	Reshuffled Segment Reporting	Explained Reshuffling	Unexplained Reshuffling	Explained Reshuffling	Unexplained Reshuffling
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
POST	-0.0059	-0.0119	-0.0163*	0.0062	-0.0207**	0.0032
	(-0.85)	(-1.60)	(-1.80)	(0.72)	(-2.18)	(0.34)
NegChRevenue	0.0021	0.0095**	0.0042	0.0016	0.0127**	0.0072
	(0.49)	(2.11)	(0.90)	(0.36)	(2.57)	(1.44)
Coverage log (residual)	-0.0169***	-0.0042	-0.0173***	-0.0162***	-0.0151**	-0.0087
	(-3.03)	(-0.64)	(-2.78)	(-2.75)	(-2.11)	(-1.22)
Intangibles	-0.0384*	-0.1251***	-0.0472*	-0.0438*	-0.1076***	-0.1248***
	(-1.65)	(-5.12)	(-1.86)	(-1.73)	(-4.07)	(-4.53)
Return on Assets	-0.1135***	-0.0361**	-0.1203***	-0.1086***	-0.0316*	-0.0244
	(-7.69)	(-2.12)	(-7.48)	(-7.08)	(-1.70)	(-1.33)
Leverage	0.0719***	0.0467***	0.0644***	0.0643***	0.0437**	0.0489***
	(4.58)	(2.83)	(3.59)	(3.85)	(2.34)	(2.69)
Book-to-Market	0.0263***	0.0039	0.0264***	0.0281***	0.0019	0.0096***
	(8.64)	(1.27)	(8.06)	(8.43)	(0.58)	(2.81)
Firm Size	-0.0035	0.0368***	-0.0013	-0.0062	0.0364***	0.0345***
	(-0.70)	(6.82)	(-0.23)	(-1.16)	(5.91)	(5.74)
Constant	0.0525*	-0.1326***	0.0394	0.0677**	-0.1270***	-0.1136***
	(1.66)	(-3.71)	(1.11)	(2.03)	(-3.14)	(-2.89)
Observations	7,601	7,254	6,389	6,549	6,080	6,216
Adjusted R^2	0.485	0.614	0.491	0.510	0.597	0.606
Firm and Fiscal Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Test for difference in coefficients of interest (chi-square and p-value)			3.79 (0.052)		4.07 (0.044)	

This table shows the results of full sample staggered DiD regression models that test the relation between segment changes and financial analyst EPS forecast errors and dispersion, respectively. The variable of interest is *POST*, which takes the value 1 in the fiscal years after the type of segment change indicated in each column, and zero otherwise. Columns (1) and (2) consider all the material segment changes compared to the control group of observations never treated. Columns (3) and (5) consider explained segment changes compared to the control group of observations never treated. Columns (4) and (6) consider unexplained segment changes compared to the control group of observations never treated. The models include firm and year fixed effects. Continuous variables are winsorized at 1 and 99%. Appendix A defines all variables. Standard errors are robust. Statistical significance is based on two-tailed t-tests and is indicated as follows: *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1.

Table 5: Cross-sectional test by type of segmentation where the reshuffling occurs

Dep. Variable	Forecast Error	Dispersion	Forecast Error		Dispersion	
VARIABLES	Reshuffled Segment Reporting	Reshuffled Segment Reporting	Explained Reshuffling	Unexplained Reshuffling	Explained Reshuffling	Unexplained Reshuffling
	(1)	(2)	(3)	(4)	(5)	(6)
POST_Operating Segments	-0.0059	-0.0135*	-0.0153*	0.0090	-0.0237**	0.0066
	(-0.81)	(-1.72)	(-1.65)	(0.94)	(-2.45)	(0.62)
POST_Geographical Segments	-0.0102	-0.0040	-0.0197	-0.0037	0.0270	-0.0118
	(-0.71)	(-0.25)	(-0.65)	(-0.24)	(0.87)	(-0.68)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,601	7,254	6,389	6,549	6,080	6,216
Adjusted R^2	0.485	0.614	0.491	0.510	0.597	0.606
Firm and Fiscal Year FE	Yes	Yes	Yes	Yes	Yes	Yes

This table reports results from staggered DiD regression models that split the effect between segment reporting reshuffling that occur in the operating type of segmentation and reshuffling that occur in the geographic type of segmentation. *POST_Operating Segments* takes the value 1 for fiscal years after a segment change occurs in the operating segments, and zero before. *POST_Geographic Segments* takes the value 1 for fiscal years after a segment change occurs in the geographic segments, and zero before. The dependent variables are analyst earnings forecast errors and dispersion, as indicated in each column. The type of segment reporting reshuffling is indicated in each column. For each model, the control group is the sample of firms never treated. Standard errors are robust. Continuous variables are winsorized at 1 and 99%. Appendix A defines all variables. Statistical significance is based on two-tailed *t*-tests and is indicated as follows: *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1.

Table 6: Within sample analysis

Dep variable	Forecast Error	Dispersion	Forecast Error		Dispersion	
	Reshuffled Segment Reporting	Reshuffled Segment Reporting	Explained Reshuffling	Unexplained Reshuffling	Explained Reshuffling	Unexplained Reshuffling
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
POST	-0.0096	-0.0252***	-0.0255*	0.0050	-0.0396***	-0.0134
	(-1.08)	(-2.67)	(-1.90)	(0.47)	(-2.96)	(-1.06)
NegChRevenue	0.0006	0.0111	0.0069	-0.0008	0.0237**	0.0043
	(0.08)	(1.49)	(0.67)	(-0.08)	(2.33)	(0.41)
Coverage log (residual)	-0.0184*	0.0216*	-0.0158	-0.0192	0.0023	0.0236
	(-1.90)	(1.93)	(-1.08)	(-1.62)	(0.14)	(1.54)
Intangibles	-0.0267	-0.1611***	-0.0438	-0.0420	-0.1323**	-0.1924***
	(-0.68)	(-3.99)	(-0.83)	(-0.79)	(-2.56)	(-3.14)
Return on Assets	-0.1775***	-0.1001***	-0.2788***	-0.1954***	-0.1466***	-0.0695
	(-6.17)	(-3.17)	(-6.51)	(-5.54)	(-3.15)	(-1.58)
Leverage	0.0699***	0.0290	0.0491	0.0443	0.0147	0.0431
	(2.80)	(1.13)	(1.30)	(1.47)	(0.40)	(1.25)
Book-to-Market	0.0173***	-0.0086	0.0124*	0.0130	-0.0253***	0.0147
	(3.23)	(-1.44)	(1.75)	(1.62)	(-3.34)	(1.49)
Firm Size	-0.0024	0.0386***	0.0060	-0.0109	0.0394***	0.0263**
	(-0.31)	(4.67)	(0.50)	(-1.12)	(3.25)	(2.37)
Constant	0.0619	-0.1511**	0.0103	0.1220*	-0.1600*	-0.0689
	(1.15)	(-2.57)	(0.12)	(1.86)	(-1.81)	(-0.88)
Observations	2,589	2,541	1,377	1,537	1,367	1,503
Adjusted R^2	0.375	0.643	0.331	0.387	0.609	0.629
Firm and Fiscal Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Test for difference in coefficients of interest (chi-square and p-value)			3.67 (0.056)		2.66 (0.103)	

This table show results from within-sample pre-post regression models that test the relation between segment reporting reshuffling and financial analyst earnings forecast error and dispersion. The variable of interest is *POST*, which takes the value 1 in the fiscal years after the type of segment reporting reshuffling indicated in each column, and zero otherwise. Columns (1) and (2) consider all segment reporting reshufflings. Columns (3) and (5) consider explained reshufflings. Columns (4) and (6) consider unexplained reshufflings. In each column, the control group are the observations not yet treated. The models include firm and year fixed effects. Continuous variables are winsorized at 1 and 99%. Appendix A defines all variables. Standard errors are robust. Statistical significance is based on two-tailed *t*-tests and is indicated as follows: *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1.

Table 7: Staggered Difference-in-Differences with Matched Control Sample

Panel A: Matched sample

Dep. Variable	Forecast Error	Dispersion	Forecast Error		Dispersion	
	Reshuffled Segment Reporting	Reshuffled Segment Reporting	Explained Reshuffling	Unexplained Reshuffling	Explained Reshuffling	Unexplained Reshuffling
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
POST	-0.0141**	-0.0223**	-0.0301***	-0.0036	-0.0428***	-0.0023
	(-2.00)	(-2.48)	(-2.76)	(-0.39)	(-3.28)	(-0.20)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,234	4,234	2,320	2,630	2,320	2,630
Adjusted R^2	0.392	0.615	0.326	0.378	0.586	0.603
Firm and Fiscal Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Restrict treated sample to 3 years around the segment reporting reshuffling event

Dep. variable	Forecast Error	Dispersion	Forecast Error		Dispersion	
	Reshuffled Segment Reporting	Reshuffled Segment Reporting	Explained Reshuffling	Unexplained Reshuffling	Explained Reshuffling	Unexplained Reshuffling
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
POST	-0.0203*	-0.0171	-0.0228	-0.0209	-0.0428**	0.0011
	(-1.92)	(-1.16)	(-1.46)	(-1.38)	(-2.11)	(0.05)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,422	3,422	1,902	2,111	1,902	2,111
Adjusted R^2	0.428	0.617	0.397	0.410	0.619	0.597
Firm and Fiscal Year FE	Yes	Yes	Yes	Yes	Yes	Yes

This table shows the results of matched sample staggered DiD regression models that test the relation between segment changes and financial analyst EPS forecast errors and dispersion, respectively. Panel A allows the sample to span the entire sample period. Panel B restricts the treated sample to three years before and three years after the reshuffling event. For each type of reshuffling, matching between treated and control groups is done using propensity scores from a logit model that includes all determinants from Table 3 and imposes exact matching on fiscal year. A treated firm-year observation is matched 1:1 with its closest neighbour never treated within a caliper distance of 0.005, without replacement. The variable of interest is *POST*, which takes the value 1 in the fiscal years after the type of segment reporting reshuffling indicated in each column, and zero otherwise. In both panels, columns (1) and (2) consider all segment reporting reshufflings compared to the matched control group; columns (3) and (5) consider explained reshufflings compared to the matched control group; and columns (4) and (6) consider unexplained reshufflings compared to the control group. The models include firm and year fixed effects. Continuous variables are winsorized at 1 and 99%. Appendix A defines all variables. Standard errors are robust. Statistical significance is based on two-tailed *t*-tests and is indicated as follows: *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1.

Table 8: Removing firms with more than one segment change over the sample period

Panel A: Full Sample, No Matching

Dep variable	Forecast Error	Dispersion	Forecast Error		Dispersion	
	Reshuffled Segment Reporting	Reshuffled Segment Reporting	Explained Reshuffling	Unexplained Reshuffling	Explained Reshuffling	Unexplained Reshuffling
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
POST	-0.0071	-0.0134	-0.0243**	0.0132	-0.0157	-0.0091
	(-0.87)	(-1.59)	(-2.18)	(1.23)	(-1.36)	(-0.80)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,793	6,458	5,868	5,937	5,562	5,609
Adjusted R^2	0.492	0.603	0.502	0.523	0.608	0.594
Firm and Fiscal Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Test for difference in coefficients of interest (chi-square and p-value)			5.13 (0.024)		0.18 (0.668)	

Panel B: Matched Treated and Control Groups

Dep variable	Forecast Error	Dispersion	Forecast Error		Dispersion	
	Reshuffled Segment Reporting	Reshuffled Segment Reporting	Explained Reshuffling	Unexplained Reshuffling	Explained Reshuffling	Unexplained Reshuffling
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
POST	-0.0183**	-0.0161	-0.0394***	0.0004	-0.0180	-0.0210
	(-2.26)	(-1.62)	(-2.81)	(0.03)	(-1.17)	(-1.47)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,152	3,152	1,508	1,616	1,508	1,616
Adjusted R^2	0.396	0.602	0.341	0.408	0.637	0.556
Firm and Fiscal Year FE	Yes	Yes	Yes	Yes	Yes	Yes

This table shows the results of full sample (Panel A) and matched sample (Panel B) staggered DiD regression models that test the relation between segment changes and financial analyst EPS forecast errors and dispersion, respectively, after removing from the sample treated firms with more than one segment reporting reshuffling over the sample period. For panel B, for each type of reshuffling, matching between treated and control groups is done using propensity scores from a logit model that includes all determinants from Table 3 and imposes exact matching on fiscal year. A treated firm-year observation is matched 1:1 with its closest neighbour never treated within a caliper distance of 0.005, without replacement. In both panels, the variable of interest is *POST*, which takes the value 1 in the fiscal years after the type of segment reporting reshuffling indicated in each column, and zero otherwise. In both panels, columns (1) and (2) consider all segment reporting reshufflings compared to the matched control group; columns (3) and (5) consider explained reshufflings compared to the matched control group; and columns (4) and (6) consider unexplained reshufflings compared to the control group. The models include firm and year fixed effects. Continuous variables are winsorized at 1 and 99%. Appendix A defines all variables. Standard errors are robust. Statistical significance is based on two-tailed *t*-tests and is indicated as follows: *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1.