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The Great Sell-side Sell-off: Evidence of Declining Financial Analyst Coverage

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Purpose – Motivated by significant global developments affecting the sell-side industry, in particular a shift towards passive investments and growing regulation, we examine (1) whether financial analyst coverage declined over the past decade and (2) if any loss of analyst coverage is associated with a change in forecast accuracy.

Design/methodology/approach – After investigating, and confirming, a general decline in analyst following, we calculate the loss of analyst coverage relative to the firm-specific maximum between 2009-2013. In multivariate analyses, we then examine whether this loss of coverage differs across geographic region, firm size, and capital market development, and whether it is associated with consensus analyst accuracy.

Findings – Results indicate that between 2011 and 2021, firm-specific analyst coverage globally declined 17.8%, while the decline in the EU was an even-greater 28.5%. Within the EU, results are most pronounced for small-cap firms. As a consequence of the loss of coverage, we observe a global decline in forecast accuracy, with EU small-cap firms and firms domiciled in EU non-developed capital markets faring the worst.

Originality/value – This study is the first to document a concerning global decline in analyst coverage over the last decade. Our results provide broad-based empirical support for anecdotal reports that smaller firms in the EU and those in EU non-developed capital markets bear the brunt of consequences stemming from changes in the sell-side analyst industry.

Paper type: Research paper
Data Availability: Data used in this study are available from public sources.

1. Introduction

Major forces have significantly altered the demand for sell-side financial analyst research over the last decade, particularly a global shift towards passive (index-tracking) investment vehicles and enhanced regulation. The value of passive investments under management has approximately doubled in the U.S. and Europe (Anadu *et al.*, 2020; Johnson, 2020), with similar growth in other regions as well (Shushko and Turner, 2018; Anandu *et al.*, 2020). As brokerage firms globally adapt to the growing popularity of passive investment products, they face the added challenge of enhanced regulation. In particular, the EU's Second Markets in Financial Instruments Directive (MiFID II) has the potential to significantly reduce asset managers' demand for sell-side analyst research (Preece, 2019), not only in EU financial markets, but globally due to the Directive's significant extraterritorial reach (e.g., Allen and Gellasch, 2019; Riding, 2019b; The Economist, 2019).

Given these recent developments affecting financial analysts' operating environment, we explore multiple research questions. First, we examine whether there is an observable decline in financial analyst coverage over the last decade, and, if so, whether a loss of coverage varies by geographic region, firm size, and capital market development. Second, we examine whether a change in analyst coverage affects analyst forecast accuracy, and, if so, whether there is a differential effect across the same dimensions.

Consistent with a changed environment for the sell-side industry, we observe a marked decrease in analyst coverage over the last decade. In a global sample of 197,056 firm-year consensus forecast observations between 2009 and 2021, we find that globally, analyst coverage fell by 17.8% from its 2012 peak. This trend is uniform across our three regions of study: analyst coverage fell by an unconditional 15.1%, 28.5%, and 18.2% in North America (NA), the EU, and the rest of the world (ROW), respectively.

Supporting reports in the business press (Keohane and Stafford, 2018; Roach, 2019; The Economist, 2019), and a comprehensive Chartered Financial Analysts survey reporting an incrementally negative effect of MiFID II (Preece, 2019), our multivariate analyses confirm that the loss of analyst coverage for EU firms is 6.4% greater than for NA firms. ROW firms, however, experienced a 9.0% smaller loss of coverage than NA firms. In general, larger firms and firms in developed capital markets experienced a larger loss of coverage than small-cap firms and firms domiciled in non-developed capital markets. Small firms and firms domiciled in EU developing markets experienced a relatively larger loss of coverage than peer firms domiciled in NA or ROW.

We next investigate whether and how this loss of coverage affects financial analysts' consensus forecast accuracy; the direction of an impact is unclear *ex ante*. If fewer analysts follow a firm, accuracy may increase if primarily weaker analysts leave the industry. However, if declining demand for sell-side analyst research triggers cuts so deep that even capable analysts are let go, or voluntarily leave for alternate employment (e.g., Guan *et al.*, 2019), consensus forecast accuracy is likely to decline.

Overall, we find that loss of analyst coverage is negatively associated with forecast accuracy. This negative association is universal and not discernibly different in the EU or ROW relative to our NA benchmark, *on average*. However, the impact of a loss of coverage on forecast accuracy is stronger for EU (but not ROW) small-cap firms, as well as for firms domiciled in EU (but not ROW) non-developed markets. These findings support the notion that the EU sell-side industry is facing particular challenges due to the direct impact of MiFID II and that loss of analyst coverage has had the most severe effects on firms with lower initial coverage.

Finally, in an extended analysis, we also explore how the documented loss of coverage affects sell-side analysts' forecast dispersion. We find the loss of coverage is associated with less-dispersed forecasts, particularly in the EU and ROW. We interpret this stronger consensus as increased herding behavior in these regions, lending further credence to the conjecture that it is not just weaker analysts, who tend to mimic the forecasts of others, who have been leaving the field, but also stronger analysts, who provide more unique (and more accurate) forecasts.

Collectively, we contribute to the literature by demonstrating that the mega-trends affecting the sell-side industry globally have not gone without consequence, especially for smaller EU firms and those domiciled in EU countries with non-developed capital markets. While it is potentially an economical decision to discontinue coverage of "less important" firms as a response to lower demand for research, it is precisely for these firms that the information environment is weaker *ex ante* and for which the value of analysts' reports and forecasts is arguably the greatest for market participants.

2. Research question development

The past decade has brought sweeping changes to the sell-side industry. While Merkley *et al.* (2017) report increasing analyst coverage from 1990 through 2010 in the U.S., multiple forces have counteracted this trend over the past decade. First, passive investment strategies have greatly increased in popularity since the end of Merkley *et al.*'s sample period. While passive investments accounted for 14% of assets under management for U.S. mutual and exchange traded funds in 2005 (and only 3% in 1995), by 2020 their share had grown to 41% (Anandu *et al.*, 2020). This shift is due to the value proposition offered by these investment vehicles, a heightened focus on fees by investors and regulators, and brokerage models centered around advisement (BlackRock, 2017). While the most dramatic shift to passive investments occurred in the U.S., other regions also experienced significant growth in this regard (Shushko and Turner, 2018; Anandu *et al.*, 2020). For example, assets under management in passive investment vehicles in Europe doubled from 10% in 2010 to 20% in 2020 (Johnson, 2020). Consequently, research budgets at global investment banks fell by over half between 2008 and 2017 (Oran, 2017).

Besides the shift towards passive investment strategies, the sell-side industry also faces headwinds from enhanced regulation. In particular, the requirements set out in the EU's MiFID II have the potential to significantly reduce the demand for sell-side analyst research (Preece, 2019). Though multifaceted, the most momentous and controversial aspect of MiFID II is the requirement to unbundle the costs of execution and trading from analyst research (PwC, 2016). Since research costs are now overt, demand for such sell-side research may weaken as managers will purchase research only when it is expected to add value to an investor's portfolio. Importantly, while MiFID II directly affects EU investment firms, the Directive has set in motion a contagion effect. Because EU buy-side firms now must pay separately for research, it places pressure on non-EU sell-side firms to change their business model and unbundle their costs as well, in effect giving MiFID II global reach (e.g., Allen and Gellasch, 2019; Riding, 2019b, The Economist, 2019).[1]

Given these developments, which independently and jointly suppress the demand for analyst research, we expect that the number of financial analysts providing earnings forecasts has declined over the past ten years and explore:

RQ1: Did analyst coverage decline over the last decade?

Whether firms in the EU experienced a more pronounced decrease in analyst coverage relative to firms in other regions owing to MiFID II is unclear *ex ante*. On one hand, while MiFID II exerts a global impact, the strongest impact of the Directive is certainly on the EU-based sell-side industry. On the other hand, passive investment strategies (with a potential concomitant negative impact on analyst activity) are not yet as common in the EU or rest of the world (ROW) as in North America (NA) (Johnson, 2020). While the ROW arguably has the least direct exposure to the passive investment or regulatory trends, it is possible that in an environment of diminishing resources, NA- and EU-based investment banks will decrease their coverage of ROW firms first before cutting coverage of firms in their core market. Accordingly, whether a decline in analyst coverage over the past decade is more or less pronounced in any particular region remains an empirical question.

RQ2: Does a loss of analyst coverage over the last decade vary by region?

Relatedly, a loss of analyst coverage may also vary by firm size or state of capital market development. In an environment of reduced research budgets, and a diminished number of financial analysts, sell-side firms will have to decide how to allocate remaining resources. In general, the demand for analyst coverage for small-cap firms and emerging capital markets has likely grown over the last decade as these markets have become more "investable." Moreover, larger firms, and firms domiciled in developed capital markets, tend to be covered by a greater number of analysts who may produce redundant research reports, providing an opportunity for cuts that only minimally reduce aggregate available information about a firm. However, because the demand for analysts' reports for smaller firms and firms domiciled in less developed capital markets is comparatively lower, it is also possible that in an environment of austerity, forecasts for these firms could be discontinued first. Numerous anecdotal reports in the business press suggest this is indeed happening (e.g., Keohane and Stafford, 2018; The Economist, 2019; Roach, 2019).

RQ3: Does a loss of analyst coverage over the last decade vary by firm size?

RQ4: Does a loss of analyst coverage over the last decade vary by capital market development?

We next consider the possible consequences of a loss of analyst coverage on forecast accuracy. On one hand, forecast accuracy may have increased over the past decade if recent trends in the sell-side industry have increased competition among analysts. Increased competition may result in sell-side analysts delivering higher-quality output to investors (Hong and Kacperczyk, 2010; Merkley *et al.*, 2017). Specifically, competitive pressures on sell-side analysts to enhance the quality of their research may have increased over the past decade due to the rise of passive investments and now-overt price competition stemming from MIFID II. In an environment of increasing competition, analysts that are unable to provide sufficiently high-quality research will be outcompeted by those who can. The remaining analysts may consequently be the most skilled and provide the highest quality forecasts.

On the other hand, forecast accuracy may worsen due to the reported budget cuts in the sell-side industry (Oran, 2017; Riding, 2019a). Accuracy is likely to suffer if analysts are provided with fewer resources; further, highly-skilled analysts may decide to leave a declining sell-side industry voluntarily. Following the Global Analyst Research Settlement in 2003, many sell-side star analysts left the profession (Guan *et al.*, 2019); anecdotal reports suggest a similar exodus in response to MiFID II (Walker and Flood, 2018). Additionally, because analysts use their fellow analysts' reports as inputs for developing their own forecasts, a decline in the number and accuracy of peer reports may affect the research quality of the remaining analysts. Merkley *et al.* (2017) also document that a decrease in analyst coverage is associated with worse forecast accuracy, because a decline in analyst following reduces competition among analysts.

An impact of a loss of coverage on forecast accuracy may not be constant across geographic regions, firm size, or state of capital market development. For instance, while the EU could suffer the greatest increase in competition or loss of skilled analysts due to the most direct impact of MiFID II, the dramatic growth of passive investments may drive changes in forecast accuracy in NA, while a general retrenchment may most affect ROW. Moreover, smaller firms, and firms domiciled in non-developed capital markets, tend to feature weaker information environments. It is precisely for these firms that a loss of coverage may be most detrimental to forecast accuracy.

Taken together, we pursue the following questions with respect to forecast accuracy:

RQ5: Is a change in analyst coverage in the last decade associated with forecast accuracy?
RQ6: Does the association between a loss of analyst coverage in the last decade and forecast accuracy vary by region?
RQ7: Does the association between a loss of analyst coverage in the last decade and forecast accuracy vary by firm size?
RQ8: Does the association between a loss of analyst coverage in the last decade and forecast accuracy vary by capital market development?

3. Sample selection, models, and descriptive statistics

3.1. Sample selection and empirical evidence of declining analyst coverage (RQ1)

To analyze whether and how analyst coverage has changed over the past decade, we source earnings forecast data from I/B/E/S. Excluding observations with forecast horizons of less than one day or greater than 365 days, we count 197,056 global observations between 2009 and 2021.

Firms domiciled in North America (NA), the European Union (EU), and the rest of the world (ROW), contribute 55,763, 37,993, and 103,300 firm-year observations, respectively.[2]

In Figure 1 we plot firms' average analyst coverage in the 2009-2021 period, i.e., the prior ten years at the time of this writing (2012 to 2021), plus the preceding three years for comparison and continuity with Merkley *et al.*'s (2017) sample period, which ended in 2010. Shown is the average number of analysts contributing to the I/B/E/S consensus forecast for a firm globally, as well as in each region (NA, EU, and ROW). We note that average analyst coverage peaked globally in 2012, with regional peaks occurring in 2013 (NA), 2011 (EU), and 2012 (ROW), respectively. The global aggregate and all regions display a notable downward trend over the last decade. By 2021, relative to their peaks, the per-firm average analyst following fell an unconditional 17.8% globally, 15.1% in NA, 28.5% in the EU, and 18.2% in the ROW. In absolute numbers, global coverage fell from a peak average of 6.62 analysts per firm in 2012 to an average of 5.44 in 2021. Similarly, average analyst coverage declined from a peak of 7.56 to 6.42 for firms domiciled in NA, from 7.17 to 5.13 for firms in the EU; and 6.26 to 5.12 for firms in the ROW. Untabulated t-tests provide affirmative evidence for RQ1; each of these declines is significant at $p < .01$.

[Insert Figure 1 about here]

3.2. Models for RQ2 – 8

Because we want to assess the impact of a loss of coverage over the past decade (2012-2021) from a *firm-specific* maximum, we identify the high-point of analyst coverage for any given firm in a +/- two-year window around 2011, the preceding year.[3] We investigate our research questions in the years following this window, i.e., over the 2014 to 2021 period (72,750 observations with non-missing variables after merging with Compustat).

To explore RQ2, we estimate the following regression model:

$$LOSSCOV\%_{it} = \beta_0 + \beta_1 EU_{it} + \beta_2 ROW_{it} + \beta_3 \Delta LOSS_{it} + \beta_4 \Delta EPS\_VOL_{it} + \beta_5 \Delta DISP_{it} + \beta_6 \Delta lnMVE_{it} + \beta_7 INST + \beta_k INDUSTRY + \beta_l YEAR + \varepsilon \quad (1)$$

LOSSCOV% is the loss of analyst coverage between the firm-specific maximum analyst following a firm during the 2009-2013 period and the number of analysts following a firm in year *t* in percentage terms.[4] Our independent variables of interest are *EU* and *ROW*, indicator variables for firms domiciled in these regions. Controls are measured as change variables, calculated as the value in the year of observation less the value in the year of maximum analyst coverage over the 2009-2013 period. We control for Δ*LOSS*, a change in negative earnings, and expect a positive association with *LOSSCOV%* as analysts are less likely to cover firms with negative earnings. Additionally, we control for changes in earnings volatility (Δ*EPS_VOL*) and forecast dispersion (Δ*DISP*).[5] We also control for change in company size (Δ*lnMVE*) and expect a negative coefficient on this term; growing firms are less likely to experience a decrease in coverage. We include *INST* as a control for country-level institutional factors, sourced from Kaufmann *et al.* (2010). Finally, we incorporate Fama and French (1997) industry and year indicator variables. Detailed variable definitions are provided in the Appendix. To explore RQ3, we augment Model (1) with interaction terms of *EU* and *ROW* with *SC*, an indicator variable for small-cap firms (with a market capitalization of less than $1 billion USD equivalent). For RQ4, we include indicator variables for firms domiciled in EU or ROW countries *not* classified as developed capital markets as per index maker Morgan Stanley Capital International **(**MSCI), *EU_NDM* and *ROW_NDM.*[6]

To examine RQ5 – 8, we estimate the following regression model:

$$ACC_{it} = \beta_0 + \beta_1 LOSSCOV\%_{it} + \beta_2 LOSS_{it} + \beta_3 EPS\_VOL_{it} + \beta_4 DISP_{it} + \beta_5 lnMVE_{it} + \beta_6 HORIZON_{it} + \beta_7 INST + \beta_k INDUSTRY + \beta_l YEAR + \varepsilon \quad (2)$$

Our dependent variable is consensus forecast accuracy (*ACC*). β_1 informs RQ5. To explore RQ6, we include in Model (2) our *EU* and *ROW* indicator variables and an interaction of each with *LOSSCOV%*. For RQ7, we estimate Model (2) separately for samples of firms with a market capitalization of less than $1 billion (i.e., small-cap) and firms with a market cap of greater than $1 billion (i.e., mid- and large-cap) and compare β_1 across subsamples. Finally, to explore RQ8, we add *EU_NDM* and *ROW_NDM*, and an interaction term of each with *LOSSCOV%*.

We expect a negative coefficient on *LOSS* and *EPS_VOL* in Model (2) as it is more difficult for analysts to provide accurate forecasts for companies with losses or volatile earnings. We also control for *DISP* and *lnMVE*, expecting a positive coefficient on the latter because forecasts for larger companies (which tend to feature greater information availability) are generally more accurate. We expect a negative coefficient on *HORIZON* as forecasts made farther in advance are usually less accurate. Finally, we control for *INST*, *INDUSTRY*, and *YEAR* as in Model (1).

3.3. Descriptive statistics

Table I presents descriptive statistics for our full sample (n = 72,750). Mean (median) accuracy is -0.026 (-0.006). *LOSSCOV%* has a median value of 0.167, indicating that for the median firm, the number of analysts following is approximately 17% lower than its firm-specific peak in 2009-2013. Over our sample period, 12.3% of firms report negative earnings. The median values of *EPS_VOL* and *DISP* are 0.627 and 0.060, respectively. The average firm size in our sample, as represented by the log of market capitalization, is 7.271, equivalent to a raw size of $10.355 billion USD-equivalent. The average forecast horizon is approximately 107 days.

[Insert Table I about here]

4. Multivariate Results (RQ2 – 8)

4.1. Loss of coverage analysis (RQ2 and RQ3)

Turning to our multivariate analyses, we estimate Model (1) and cluster standard errors at the firm level. We winsorize the top and bottom 1% of continuous variables. Results of our test of RQ2, presented in Column A of Table II, show that the coefficient on *EU* is positive and significant (0.064, $p < .01$), whereas the coefficient on *ROW* is negative and significant (-0.090, $p < .01$). Conditional on controls, the loss of coverage for firms domiciled in the EU (ROW) is therefore 6.4% greater (9.0% smaller) than for the average NA firm, consistent with an incrementally negative effect for the demand of sell-side analyst research in the EU. Growing firms experience a lower loss of coverage; the coefficient on $\Delta lnMVE$ is negative and significant at $p < .01$. We likewise observe a negative and significant coefficient on $\Delta DISP$; those on $\Delta LOSS$ and ΔEPS_VOL are not significant.

We next examine whether the regional effects we observe in Column A vary by firm size. Our sample is comprised of 31,776 (43.7%) small-cap (*SC*) observations with a firm market capitalization of less than $1 billion and 40,974 mid-/large-cap observations with a firm market cap larger than $1 billion; we present results from the estimation of Model (1) in each subsample in Column B and C, respectively. While the coefficient estimates on *EU* are positive and significant in both subsamples, the magnitude of the coefficient in Column B (0.080, $p < .01$) is about twice as large than that in Column C (0.037, $p < .10$). By contrast, the coefficient estimates for *ROW* are negative and significant at $p < .01$ across both columns and similar in magnitude (-0.099 in Column B versus -0.086 in Column C). These results suggest that the effect of being domiciled in an EU country on loss of coverage is stronger for small-cap than mid-/large-cap firms, whereas the effect of being domiciled in a ROW country is similar across our size partition.

To examine RQ3, and to test whether the difference of the "EU effect" between small- and mid-/large-cap firms observed in Columns B and C is statistically significant, we add an indicator variable to Model (1) for small-cap (*SC*) observations and interaction terms of *SC* with *EU* and *ROW*. As reported in Column D, the coefficient on *SC* is negative and significant (-0.108, $p < .01$), indicating that small-cap firms generally experienced a lower loss of coverage. This accords with larger firms (with greater analyst following) providing more "fat" to cut. The interaction term of *ROWxSC* is not significant (as expected given results in Columns B and C). We do, however, find a significantly *greater* loss of coverage for small firms in the EU (coefficient on *EUxSC* = 0.070, $p < .05$) indicating that while smaller firms feature a lower loss of coverage than larger firms globally, this is less true in the EU (consistent with Columns B and C).

These results may bridge the conflicting findings of earlier studies on the consequences of MiFID II. Specifically, Guo and Mota (2021) and Lang *et al.* (2021) observe the most substantial declines in coverage for EU large firms, while Fang *et al.* (2020) report a more pronounced loss of coverage for EU small firms. Both claims can be true simultaneously. The former studies agree with our positive main effect of *EU*, representing a significant loss of coverage for EU mid-/large-cap firms. Yet, in agreement with the latter, we find the "EU effect" is also greater for small-cap firms (*EUxSC* = 0.070, $p < .05$). While small-cap firms in all regions experience a lower loss of coverage in general, this effect is significantly muted for firms domiciled in the EU.[7]

Examining RQ4, results in Column E of Table II show a negative and significant coefficient on *ROW_NDM*, signifying that firms domiciled in non-developed markets (NDMs) experienced less coverage loss. This may reflect (better-covered) firms in developed markets providing more opportunities to cut coverage and increasing investor interest in ROW developing capital markets over the past decade. However, this lower loss of coverage for ROW NDMs does not extend to EU NDMs; the coefficient on *EU_NDM* is not significant. Further analyses, tabulated in Columns F and G, show a lower loss of coverage for smaller and larger firms domiciled in ROW alike, whereas smaller (larger) firms in EU developing markets experience a lower (higher) loss of coverage, accounting for the non-significant coefficient on *EU_NDM* reported in Column E. Overall, firms domiciled in EU NDMs experienced a relatively higher loss of coverage than their ROW counterparts, again consistent with deeper cuts to the sell-side industry in the EU.

[Insert Table II about here]

Taken together, our results for RQ2 – 4 establish that while decreasing analyst coverage is a global trend, not all geographic regions are equally affected. Relative to our baseline NA firms, firms domiciled in the EU (ROW) experienced a significantly higher (lower) loss of coverage. While the decline in coverage is significantly less pronounced for small- than mid-/large-cap firms for all regions, EU small-cap firms lost more coverage than their peer firms in other regions. Similarly, while firms domiciled in ROW NDMs experienced less decline in analyst coverage over our sample period, consistent with increasing investor interest in emerging and frontier capital markets, this was not true for firms domiciled in EU NDMs. Firms domiciled in EU NDMs experienced a decline in analyst coverage that was no different from that in developed markets on average, but which was marginally less (more) pronounced for small- cap (larger-cap) EU NDM firms. These latter more-nuanced findings are consistent with our observation that smaller (larger) firms generally experience a less (more) pronounced loss of coverage.

4.2. Forecast accuracy analysis (RQ5 – 8)

We estimate Model (2) to investigate the impact of the global trend of falling sell-side analyst coverage on forecast accuracy and report results in Table III. Tabulated in Column A, we find a negative and significant coefficient on *LOSSCOV%* (-0.603, $p < .01$), indicating an affirmative answer to RQ5: loss of coverage is negatively associated with the accuracy of financial analysts' forecasts (consistent with Merkley *et al.*, 2017). Coefficients on control variables are of the expected sign, with firms reporting losses and more volatile earnings featuring lower forecast accuracy. Larger firms, as well as observations with greater forecast dispersion, feature higher forecast accuracy, while forecasts with longer horizons are less accurate.

Next, we examine whether the negative impact of a loss of analyst coverage on forecast accuracy differs across regions (RQ6). Reported in Column B of Table III, we continue to find a negative and significant coefficient on *LOSSCOV%* ($p < .01$). We also observe a negative and significant coefficient on both *EU* and *ROW*, each significant at $p < .01$, indicating that average forecast accuracy for companies in the EU and ROW is lower than for those domiciled in NA (consistent with the U.S. capital market featuring a superior information environment). However, *LOSSCOV%xEU* and *LOSSCOV%xROW*, our variables of interest, are not associated with forecast accuracy. The effect of loss of analyst coverage in the EU (or ROW) on forecast accuracy is not statistically different from that experienced in NA during the 2014-2021 period.

Though a loss of coverage does not differentially affect forecast accuracy in the EU or ROW *on average*, it is possible that for certain subsets of firms, particularly those that have thinner analyst coverage and weaker information environments, a loss of analyst coverage *is* detrimental to forecast accuracy. We explore this possibility, formally stated as RQ7 and RQ8, in Columns C and D of Table III. We report results separately for small- and mid-/large-cap firms. We note that the main effect of *LOSSCOV%* on forecast accuracy is stronger (i.e., more negative) for small-cap firms in Column C (-0.839, $p < .01$) than larger firms in Column D (-0.325, $p < .01$). In untabulated results, we confirm that this difference is statistically significant at $p < .01$. Moreover, in contrast to Column B, the coefficient on *LOSSCOV%xEU* is negative and significant in Column C of Table III (-0.668, $p < .05$). A loss of coverage is associated with a greater decline in forecast accuracy for small-cap EU firms than for the average NA small-cap firm. However, tabulated in Column D of Table III, the effect of a loss of analyst coverage on forecast accuracy is less severe for larger firms in the EU (0.225, $p < .01$). The net impact of a loss of analyst coverage on forecast accuracy for larger EU-domiciled firms is still marginally negative, however, as indicated by a partial F-test ($p < .10$, untabulated) of the sum of the coefficients on *LOSSCOV%* and *LOSSCOV%xEU*. The coefficient on *LOSSCOV%xROW* is not significant in either Column C or D of Table III.

Lastly, we consider RQ8. As reported in Column E of Table III, the coefficient on the interaction term of *LOSSCOV%xEU_NDM* (*LOSSCOV%xROW_NDM*) is negative (positive) and significant at $p < .05$ ($p < .10$), respectively. Thus, in contrast to the main effects of EU and ROW reported in Column B of Table III, the impact of a loss of coverage on forecast accuracy is incrementally more (less) severe for firms in EU (ROW) NDM countries. Results reported in Columns F and G for small- versus mid-/large-cap firms indicate that overall results for EU firms reported in Column E are driven by small-cap firms in EU NDMs, whereas the marginally significant results for *LOSSCOV%xROW_NDM* disappear when constraining the sample to only small-cap or mid-/large-cap firms.[8]

[Insert Table III about here]

Taken together, our empirical results for RQ5-8 suggest that a loss of coverage has negatively affected forecast accuracy during our sample period. This negative impact is universal with no discernible difference for firms across geographic regions. The negative consequence of a loss of coverage on forecast accuracy is, however, stronger for smaller than larger firms; this effect is even more pronounced for the EU. For larger EU firms, a loss of coverage is associated with a less severe, though still negative, change in forecast accuracy. For firms domiciled in the ROW, we cannot discern a differential impact of loss of coverage on forecast accuracy for small- versus mid-/large-cap firms. While both EU NDM and ROW NDM firms feature lower forecast accuracy than the global average, a loss of coverage is incrementally more detrimental only for small-cap firms domiciled in EU NDMs. We surmise that the dramatic changes in the sell-side industry form a "perfect storm" for small, EU-domiciled firms, especially those located in EU NDMs.

5. Additional analyses: Forecast dispersion

Finally, we explore how the loss of coverage we document affects analyst forecast dispersion. Forecast dispersion is an important attribute of financial analyst forecasts and reflects the level of agreement among analysts with respect to future earnings. To this end, we estimate a version of Model (2) featuring *DISP* as the dependent variable and *ACC* as an additional control. Untabulated results reveal that the coefficient on *LOSSCOV%* is negative and significant in our EU and ROW samples, indicating dispersion decreases as coverage is lost in these regions, though not NA. In light of our finding of decreased forecast accuracy, this is consistent with stronger analysts, who arguably provided more unique (and accurate) forecasts leaving the field, particularly for EU- and ROW-domiciled firms, and weaker analysts, who are more prone to herding behavior, remaining.[9] The departure of stronger analysts, thus does not only (negatively) affect forecast accuracy, but forecast dispersion as well.

6. Conclusion

We provide comprehensive empirical evidence of falling analyst coverage in North America, the EU, as well as the rest of the world. Relative to NA firms the decline in analyst coverage is strongest in the EU and least for the ROW. Relatedly, the effect of EU membership on loss of coverage is strongest for small-cap firms and firms domiciled in the EU's less developed capital markets. We note the consistency of these findings with the consequences of MiFID II, which impacts EU investment firms more directly and strongly than those in other parts of the world. Regardless of the driving factor(s), it is clear that sell-side coverage has significantly decreased in EU countries to an even greater extent than the (falling) global average. Corroborating anecdotal reports (Preece, 2019; Money, 2019), we also demonstrate one consequence of this loss of coverage: a marked decrease in the quality of analyst output. The loss of coverage we observe is associated with worse forecast accuracy globally. This effect is again strongest for small-cap EU companies, particularly those located in EU countries with less-developed capital markets.

We find the persistent global trend of declining analyst coverage over the past decade, and the associated decline in forecast accuracy, alarming. Differences between actual and consensus EPS typically have immediate impacts on stock price – as investors in firms who "miss the consensus" by even a few pennies can painfully attest. If consensus earnings estimates are becoming less reliable, earnings surprises however will become more commonplace. The accuracy of analysts' earnings forecasts therefore is a central concern for all parties involved in capital market transactions—regulators, investors, asset managers, investment fund companies, and financial analysts.

The decline in analyst coverage and forecast accuracy we observe are likely attributable to unintended consequences of mega-trends otherwise viewed as largely beneficial. Given their low-cost nature, passive investment strategies, index tracking mutual funds and ETFs, are forecast to further grow in popularity globally (e.g., Seyffart, 2021). If the diminished information environment from decreased sell-side analyst activity is not offset by other sources of financial research, however, the efficacy of buy-side managers, personal investors, and other users of sell-side firms' research output will be impaired. Moreover, as some lobby groups, investors, asset managers, and even the CFA Institute, start to campaign for MiFID II-style rules in the U.S. (Murphy and Walker 2017; Holt 2019a; Holt 2019b), our results suggest regulators should proceed with caution and consider the possible side effects of further curtailing the sell-side research activity of brokerage firms.

Notes

[1] Because the U.S. Investment Advisers Act of 1940 prohibits the exact fee arrangement, i.e., direct payments for research, now mandated in the EU, the SEC authorized a temporary reprieve allowing affected U.S. brokerages to follow MiFID II-style hard dollar rules (SEC, 2019); a final SEC position is still pending as of the time of writing.
[2] ROW is comprised of the following sub-regions (observations): non-EU Europe (5,510), Latin America (4,131), Asia and Australasia (86,611), and the Middle East and Africa (7,048).
[3] Defining *LOSSCOV%* alternatively using a +/- one-year window does not affect our results.
[4] By construction, a positive (negative) value of *LOSSCOV%* indicates that the number of analysts following the firm decreased (increased). The maximum value of *LOSSCOV%* approaches 1 (100%). Firms which lose analyst coverage completely drop from our sample. This limitation biases our analyses against finding that analyst coverage declined in the last decade.

[5] We set *DISP* to 0 for instances of the consensus forecast reflecting a single analyst estimate to retain single-estimate observations in our multivariate analyses. All results hold at comparable significance levels when excluding single-estimate observations.

[6] The MSCI country market classification is available at https://www.msci.com/our-solutions/indexes/market-classification.

[7] As with smaller firms globally, the sum of the coefficients for small-cap firms domiciled in the EU remains negative (-0.108 + 0.070 = -0.038, $p < .01$).

[8] We confirm the effect of a loss of coverage on forecast accuracy for small-cap EU NDM firms is statistically greater than that for mid- and large-cap EU NDM firms using a three-way interaction model (untabulated).

[9] An alternative interpretation is possible, however, if one assumes that weaker analysts are those that provide the most extreme forecasts. In this case, a decrease in dispersion would indicate it is primarily weaker analysts who no longer provide earnings forecasts. We believe this possibility to be less convincing given our findings of a negative association between loss of coverage and forecast accuracy. Moreover, herding, not leading, likely better describes a less capable analyst.

Appendix

Variable names and definitions

Variable	Definition
ACC	Analyst consensus forecast accuracy, calculated as the absolute value of the difference between the mean I/B/E/S consensus forecast and actual earnings reported by I/B/E/S divided by stock price as of the consensus forecast date, multiplied by -1.
DISP	I/B/E/S-reported standard deviation of analyst estimates used in computing the consensus forecast.
EPS_VOL	Earnings per share volatility, calculated as the standard deviation of actual earnings over the prior five years.
EU	Indicator variable taking a value of one for company observations in the European Union, and zero otherwise.
EU_NDM	Indicator variable taking a value of one for EU firms domiciled in countries classified as other than a developed capital market (i.e., as emerging, frontier, or standalone market) per MSCI's market classification and zero otherwise.
HORIZON	Number of days between the consensus forecast date and the date on which earnings are reported.
INDUSTRY	Indicator variables taking a value of one for company membership in a given Fama and French (1997) industry and zero otherwise.
INST	Control for institutional factors calculated as the first principal component from an analysis of the Voice & Accountability, Government Effectiveness, Regulatory Quality and Rule of Law dimensions sourced from Kaufmann *et al.* (2010). Data available at http://www.govindicators.org.
lnMVE	Natural log of the U.S. dollar-equivalent market value of equity.
LOSS	Indicator variable taking a value of one for reported negative earnings (and zero otherwise).
LOSSCOV%	The difference between the maximum number of analysts following a company in the 2009 through 2013 period less the number of analysts covering the firm in the current fiscal year scaled by the maximum analyst following.
ROW	Indicator variable taking a value of one for company observations *not* in the European Union or North America.
ROW_NDM	Indicator variable taking a value of one for ROW firms domiciled in countries classified as other than a developed capital market (i.e., as emerging, frontier, or standalone market) per MSCI's market classification and zero otherwise.
SC	Indicator variable taking a value of one for small-cap firms (defined as those with a market cap of less than $1 billion USD-equivalent) and zero otherwise.

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Table I
Descriptive statistics

Full Sample							
	Mean	SD	Min	Q1	Med.	Q3	Max
ACC	-0.026	0.074	-0.833	-0.018	-0.006	-0.002	0.000
LOSSCOV%	0.010	0.803	-5.500	-0.000	0.167	0.500	0.900
LOSS	0.123	0.329	0.000	0.000	0.000	0.000	1.000
EPS_VOL	56.710	276.914	0.000	0.127	0.627	3.848	2,301.900
DISP	10.237	54.449	0.000	0.010	0.060	0.450	640.000
lnMVE	7.271	1.881	2.351	6.008	7.178	8.399	12.653
HORIZON	107.360	73.312	1.000	61.000	83.000	138.000	365.000
INST	0.410	0.913	-2.463	-0.629	0.888	1.031	1.599

The global sample represents 72,750 firm-years (13,418 unique firms) over 2014-2021. See Appendix for variable definitions.

Source: Created by authors.

Table II

Multivariate results for RQ2 – 4

Column	A		B		C		D		E		F		G	
Sample	Full		Small-cap		Mid-/Large-cap		Full		Full		Small-cap		Mid-/Large-cap	
Dependent Variable	*LOSSCOV%*		*LOSSCOV%*		*LOSSCOV%*		*LOSSCOV%*		*LOSSCOV%*		*LOSSCOV%*		*LOSSCOV%*	
	Coeff. est.	*t* value	Coeff. est.	*t* value	Coeff. est.	*t* value	Coeff. est.	*t* value	Coeff. est.	*t* value	Coeff. est.	*t* value	Coeff. est.	*t* value
Intercept	0.174	5.92[a]	0.194	4.66[a]	0.167	4.30[a]	0.211	6.95[a]	0.257	8.42[a]	0.281	6.87[a]	0.233	5.54[a]
EU	0.064	3.94[a]	0.080	3.40[a]	0.037	1.72[c]	0.037	1.75[c]						
ROW	-0.090	-5.83[a]	-0.099	-4.54[a]	-0.086	-4.30[a]	-0.092	-4.98[a]						
SC							-0.108	-5.25[a]						
EUxSC							0.070	2.33[b]						
ROWxSC							0.026	1.03						
EU_NDM									-0.049	-1.45	-0.094	-2.42[b]	0.089	1.76[c]
ROW_NDM									-0.250	-10.57[a]	-0.261	-9.22[a]	-0.220	-6.29[a]
Δ*LOSS*	0.023	1.63	0.008	0.49	0.052	2.07[b]	0.025	1.74[c]	0.025	1.72[c]	0.008	0.52	0.053	2.10[b]
Δ*EPS_VOL*	-0.004	-0.62	-0.002	-0.23	-0.005	-0.60	-0.004	-0.64	-0.004	-0.65	-0.000	-0.05	-0.006	-0.77
Δ*DISP*	-0.299	-9.17[a]	-0.486	-10.05[a]	-0.173	-4.82[a]	-0.301	-9.29[a]	-0.287	-9.00[a]	-0.476	-10.06[a]	-0.161	-4.62[a]
Δ*lnMVE*	-0.302	-32.23[a]	-0.302	-26.26[a]	-0.320	-22.41[a]	-0.314	-32.32[a]	-0.307	-32.58[a]	-0.306	-26.52[a]	-0.321	-22.62[a]
INST	0.006	0.75	-0.009	-0.87	0.020	1.87[c]	0.008	1.08	0.066	-5.28[a]	0.082	-5.25[a]	-0.044	-2.39[b]
Industry Controls	Included		Included		Included		Included		Included		Included		Included	
Year Controls	Included		Included		Included		Included		Included		Included		Included	
Adjusted R^2	0.1334		0.1606		0.1270		0.1357		0.1371		0.1649		0.1297	
N	72,750		31,776		40,974		72,750		72,750		31,776		40,974	

Results reflect OLS regressions with standard errors clustered at the firm level. All regressions include year indicator variables. See Appendix for variable definitions. [a], [b], [c] represent coefficient estimates significant at the 1%, 5%, and 10% levels, two-sided. Coefficient estimates on Δ*EPS_VOL* and Δ*DISP* multiplied by 100 for ease of exposition.

Source: Created by authors.

Table III
Multivariate results for RQ5 – 8

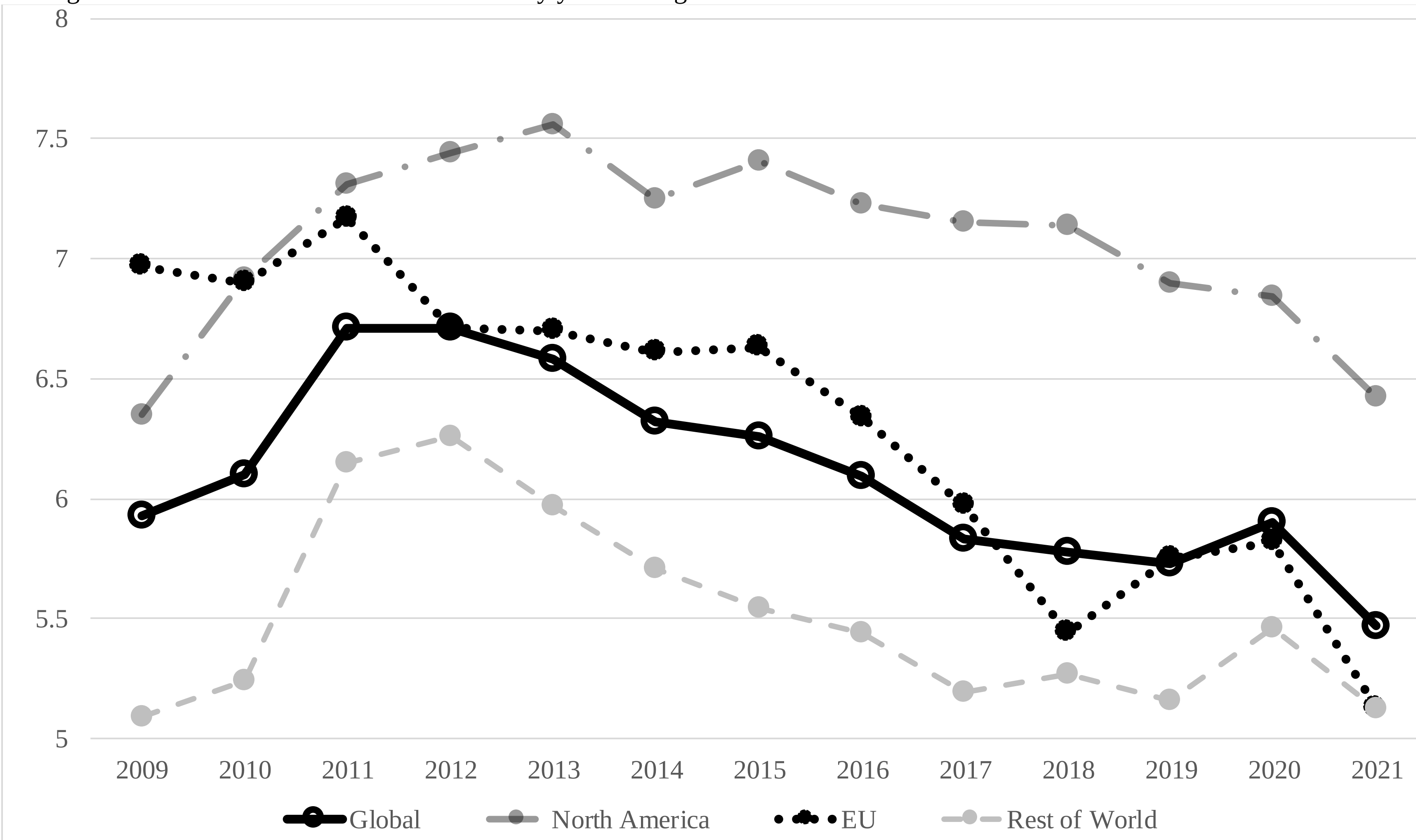
Column	A		B		C		D		E		F		G	
Sample	Full		Full		Small-Cap		Mid-/Large-cap		Full		Small-Cap		Mid-/Large-cap	
Dep. Variable	*ACC*		*ACC*		*ACC*		*ACC*		*ACC*		*ACC*		*ACC*	
	Coeff. est.	*t* value	Coeff. est.	*t* value	Coeff. est.	*t* value	Coeff. est.	*t* value	Coeff. est.	*t* value	Coeff. est.	*t* value	Coeff. est.	*t* value
Intercept	-6.527	-27.31[a]	-5.936	-24.39[a]	-12.399	-17.58[a]	-2.640	-14.26[a]	-6.322	-25.07[a]	-13.665	-19.56[a]	-2.446	-14.37[a]
LOSSCOV%	-0.603	-16.67[a]	-0.658	-6.53[a]	-0.839	-4.83[a]	-0.325	-5.20[a]	-0.678	-10.54[a]	-0.932	-8.01[a]	-0.320	-6.89[a]
EU			-1.609	-15.06[a]	-1.774	-7.57[a]	-1.099	-14.95[a]						
ROW			-0.884	-9.52[a]	-1.841	-9.35[a]	-0.634	-11.31[a]						
LOSSCOV%xEU			0.092	0.57	-0.668	-2.17[b]	0.225	2.20[b]						
LOSSCOV%xROW			0.097	0.90	-0.010	-0.05	0.014	0.21						
EU_EM									-0.473	-1.80[c]	-0.161	-0.44	-0.763	-3.46[a]
ROW_EM									-0.238	-1.76[c]	-0.539	-2.41[b]	-0.243	-2.34[b]
LOSSCOV%xEU_NDM									-1.076	-2.12[b]	-1.478	-2.33[b]	0.162	0.57
LOSSCOV%xROW_NDM									0.142	1.80[c]	0.043	0.30	0.037	0.64
LOSS	-8.351	-40.66[a]	-8.420	-41.08[a]	-9.425	-34.47[a]	-5.486	-22.16[a]	-8.376	-40.80[a]	-9.099	-33.94[a]	-5.545	-22.25[a]
EPS_VOL	-0.003	-7.65[a]	-0.003	-7.53[a]	-0.004	-6.73[a]	-0.001	-3.74[a]	-0.003	-7.57[a]	-0.004	-6.93[a]	-0.001	-3.74[a]
DISP	0.004	2.83[a]	0.004	3.01[a]	0.002	1.04	-0.001	-0.95	0.004	3.01[a]	0.002	0.96	-0.001	-0.90
lnMVE	0.665	30.32[a]	0.671	30.13[a]	1.948	20.28[a]	0.231	13.66[a]	0.657	29.65[a]	2.001	20.95[a]	0.177	12.17[a]
HORIZON	-0.008	-16.66[a]	-0.007	-15.11[a]	-0.010	-10.37[a]	-0.004	-12.31[a]	-0.008	-16.90[a]	-0.011	-11.69[a]	-0.005	-14.49[a]
INST	0.004	10.21[a]	0.004	7.80[a]	0.008	8.61[a]	0.002	5.12[a]	0.003	4.30[a]	0.008	6.39[a]	0.001	2.16[b]
Industry Controls		Included		Included		Included		Included		Included		Included		Included
Year Controls		Included		Included		Included		Included		Included		Included		Included
Adjusted R^2		0.2324		0.2372		0.2570		0.1866		0.2327		0.2529		0.1778
N		72,750		72,750		31,776		40,974		72,750		31,776		40,974

Results reflect OLS regressions with standard errors clustered at the firm level. All regressions include year indicator variables. See Appendix for variable definitions. [a], [b], [c] represent coefficient estimates significant at the 1%, 5%, and 10% levels, two-sided. Coefficient estimates multiplied by 100 for ease of exposition.

Source: Created by authors.

Figure 1

Average number of consensus forecast estimates by year and region



Source: Created by authors.