The Future of Equity Research: A Strategic Analysis of Investment Firms

Andres Garrido Soler
University of Pennsylvania, agarrido@wharton.upenn.edu

Follow this and additional works at: https://repository.upenn.edu/joseph_wharton_scholars

Part of the Business Administration, Management, and Operations Commons, and the Finance and Financial Management Commons

Recommended Citation

This paper is posted at ScholarlyCommons. https://repository.upenn.edu/joseph_wharton_scholars/115
For more information, please contact repository@pobox.upenn.edu.
The Future of Equity Research: A Strategic Analysis of Investment Firms

Abstract
Equity Research (ER) is a fundamental sector of the financial services industry, responsible for producing and selling informational content for investors to make more profitable investment decisions. In January 2018, a cost unbundling regulation was enacted in Europe, decreasing the industry’s appeal to investors. This paper investigates the effects of MiFID II on the strategic decisions of Equity Research providers in the US. By performing a qualitative analysis through interviewing eight industry insiders, the key variables of analysis were coverage (number of stock recommendations) and analyst count for ER firms. Using a fixed-effects regression over a 48-month period (before and after MiFID II), this study finds a positive association between industry coverage and analyst count on research providers. This result, I argue, could be related to the unintended consequences of the European regulation on the US industry, allowing US firms to gain competitive advantage and thus increase coverage and staffing.

Keywords
MiFID II, Equity Research, coverage, business strategy

Disciplines
Business Administration, Management, and Operations | Finance and Financial Management
THE FUTURE OF EQUITY RESEARCH: A STRATEGIC ANALYSIS OF INVESTMENT FIRMS

By

Andres Garrido Soler

agarrido@wharton.upenn.edu

An Undergraduate Thesis submitted in partial fulfillment of the requirements for the

JOSEPH WHARTON SCHOLARS

Faculty Advisor:

Saerom (Ronnie) Lee

Assistant Professor, Management Department

saeroms@wharton.upenn.edu

THE WHARTON SCHOOL, UNIVERSITY OF PENNSYLVANIA

DECEMBER 2021
ABSTRACT

THE FUTURE OF EQUITY RESEARCH: A STRATEGIC ANALYSIS OF INVESTMENT FIRMS

Andres Garrido Soler

Equity Research (ER) is a fundamental sector of the financial services industry, responsible for producing and selling informational content for investors to make more profitable investment decisions. In January 2018, a cost unbundling regulation was enacted in Europe, decreasing the industry’s appeal to investors. This paper investigates the effects of MiFID II on the strategic decisions of Equity Research providers in the US. By performing a qualitative analysis through interviewing eight industry insiders, the key variables of analysis were coverage (number of stock recommendations) and analyst count for ER firms. Using a fixed-effects regression over a 48-month period (before and after MiFID II), this study finds a positive association between industry coverage and analyst count on research providers. This result, I argue, could be related to the unintended consequences of the European regulation on the US industry, allowing US firms to gain competitive advantage and thus increase coverage and staffing.

Keywords: MiFID II, Equity Research, coverage, business strategy
# TABLE OF CONTENTS

ABSTRACT ................................................................................................................................. i
LIST OF TABLES .......................................................................................................................... iii
LIST OF FIGURES ....................................................................................................................... iv
INTRODUCTION .......................................................................................................................... 1
LITERATURE REVIEW ............................................................................................................... 7
  Firm Coverage .......................................................................................................................... 7
  Quality of Research ............................................................................................................... 8
  Liquidity of The Covered Firms. .............................................................................................. 8
  Firm Size .................................................................................................................................. 9
  Relationship between The Buy- and Sell-Side ........................................................................... 9
  Literature Gaps ...................................................................................................................... 11
QUALITATIVE ANALYSIS OF THE EFFECTS OF MIFID II ON THE US EQUITY RESEARCH INDUSTRY ......................................................................................................................... 13
  Data Collection ...................................................................................................................... 13
  Data Analysis ........................................................................................................................ 14
  Results ................................................................................................................................... 14
  Hypotheses .......................................................................................................................... 19
EMPIRICAL ANALYSIS OF THE EFFECTS OF MIFID II ON THE US EQUITY RESEARCH INDUSTRY ................................................................................................................................. 22
  Data Collection ...................................................................................................................... 22
  Data and Variables: Measurement ......................................................................................... 23
  Data Analysis ........................................................................................................................ 24
  Results ................................................................................................................................... 25
DISCUSSION AND CONCLUSIONS ......................................................................................... 40
LIMITATIONS AND RECOMMENDATIONS ................................................................................. 47
REFERENCES .............................................................................................................................. 49
APPENDIX 1 ................................................................................................................................. 54
LIST OF TABLES

Table 1. Description of Key Variables ................................................................. 23
Table 2. Head of The Dataset ........................................................................... 25
Table 3. Summary Statistics of Quantitative Variables of The Dataset .............. 25
Table 4. Overall Dataset: Number of Recommendations over Time (Table Form) ................................................................. 26
Table 5. Fixed Effects Regression for Overall Analyst Coverage on pre_post Indicator .......... 28
Table 6. Big and Small Firms Datasets: Number of Recommendations over Time (Table Form) ................................................................................................................................. 29
Table 7. Fixed Effects Regression for Big Firm Analyst Coverage on pre_post Indicator ....... 31
Table 8. Fixed Effects Regression for Small Firm Analyst Coverage on pre_post Indicator ...... 32
Table 9. Overall Dataset: Number of Analysts over Time (Table Form) .................. 33
Table 10. Fixed Effects Regression for Overall Analyst Count on pre_post Indicator ............ 34
Table 11. Big and Small Firms Datasets: Number of Analysts over Time (Table Form) ............ 36
Table 12. Fixed Effects Regression for Big Firm Analyst Count on pre_post Indicator ............. 37
Table 13. Fixed Effects Regression for Small Firm Analyst Count on pre_post Indicator ........ 38
LIST OF FIGURES

Figure 1. Overall Dataset: Number of Recommendations over Time ................................. 26
Figure 2. Big and Small Firms Datasets: Number of Recommendations over Time .............. 29
Figure 3. Overall Dataset: Number of Analysts over Time ........................................... 33
Figure 4. Big and Small Firms Datasets: Number of Analysts over Time ............................ 35
INTRODUCTION

Equity Research (ER) is a sector of the financial services industry responsible for producing and selling informational content for investors to make more profitable investment decisions. ER is critical in capital markets: analysts are considered essential to communicating and analyzing detailed and timely financial information, influencing investment decisions (Fang and Yasuda 2014; Hloušek 2018). For the SEC Investor Advisory Committee Research (2019), ER is “an essential component of the capital markets ecosystem” (3).

The presence of ER in the US economy is significant. According to Bloomberg (2021), in 2020, the US Institutional Equity Commission Pool was worth $7.2 billion, presenting the most significant increment in the decade (7%) after a steady decline over the last five years. In 2016, 60% of commission allocations from US investors went to ER (Coalition Greenwich 2017).

Nowadays, there are more than 300 sell-side ER firms in the US (Bloomberg 2021) and 487,800\(^1\) reported Financial Analysts in the US Labor Market (US Bureau of Labor Statistics 2021). The projected percent change in employment in this industry from 2019 to 2029 is 5% (the average growth rate for all occupations is 4%).

These numbers indicate an increase in revenues and employees in a mature industry (IBIS World 2021). However, will this industry growth be sustained? Over the last 30 years, two events have significantly impacted the ER industry dynamics (Anselmi and Petrella 2020; McKinsey and Company 2017). The first one was the creation of Exchange Traded Funds

---

\(^1\) Includes financial risk specialists, fund managers, investment Analysts, portfolio managers, ratings Analysts, and securities Analysts. I did not find a narrower number for ER alone.
ETFs, and the second was the introduction of the regulation called Markets in Financial Instruments Directive II (hereon MiFID II).

ETFs are funds that can be exchanged just like individual stocks while keeping prices close to the net asset value. They typically are passively managed index-tracking vehicles. Passive investing is the investment strategy in which portfolio weights are automatically adjusted based on a tracking index or metric (such as a level of trading or a specific price). This innovation increased in popularity in 1993, when ETFs were created (Mackintosh 2020). Since then, the market shares of these funds have been increasing. Between 2008 and today, $1 trillion was shifted from active to passive investments, resulting in a decline of research spending of 56.5% compared to 2008. Nowadays, passive funds represent 41% of combined US Mutual Fund and ETF assets under management (Anadu, Kruttli, McCabe, and Osambela 2020).

ETFs are competitive relative to other investments because of their low cost and ample liquidity. The need for less information and lower management fees gives ETFs a cost leadership advantage over actively managed portfolios. This shift has had a negative impact on ER firms, given the decreased demand for stock picking. The fewer investors are willing to actively manage portfolios, the lower demand for stock recommendation research.

The second shift, and the focus of this project, is MiFID II, a regulation introduced in Europe on January 3rd, 2018, designed to increase transparency in the financial sector after the events of the Global Financial Crisis (2007-2008). According to Allen and Gellash (2019):

Asset managers must explicitly quantify the value of research they consume, decouple the amount paid for research from the volume they trade, prepare a budget and disclose to
customers any research expenses paid using client assets, and detail how a client who pays for research actually benefits from such research. (7)

European ER clients now need to report how much they spend on ER specifically, and they have become more aware of their bargaining power and demand lower prices (Baert 2017). This lowering in prices will impact ER, especially smaller independent research firms (Schmerken 2019). Anselmi and Petrella (2020) suggested that MiFID II produces a profound change in the business model of ER companies. There is a conflict between the added transparency and the looking for profitability. Which one affects markets the most is not yet clear. This issue translated to a reduction of research analyst coverage. According to Holt (2019), MiFID II has generated “tectonic shifts” in the ER landscape.

What is the implication of this regulation on the US ER industry? Although it has not been implemented in the US, US-based institutional investors are divided in their responses toward MiFID II. Not every US company has altered the way they consume and pay for ER services, but some firms promote commission-sharing agreements. Even some US divisions of multinational firms have decided to pay for research for their European customers while still using US clients’ commissions to pay for research (Allen and Gellash 2019, 9). Thus, it seems that “institutions have been adopting the unbundled model even if not required to. They prefer being unbundled as they are not ‘forced’ to pay for research they don’t want.” (Schmerken 2019). However, not every policymaker agrees with cost unbundling. In November 2019, the Securities and Exchange Commission announced the extension of temporary measures to facilitate the cross-border implementation of MiFID II until July 2023, thus allowing US firms to keep bundling costs (SEC 2019).
In this state of affairs, this paper studies the effects of MiFID II on the US ER industry. More specifically, I answer the following research question: How has MiFID II affected the strategic decisions of Equity Research providers in the US?

Addressing this question is essential if one wants to know more about the future of ER. As I have presented above, MiFID II can significantly impact the ER industry through shifts in demand, pricing, and research labor supply. With a possible decline in research demand, understanding how this regulation affects this industry is crucial for ER firms. These companies will need to assess their strategic decision-making and adapt their business strategy to continue creating and capturing value, ensuring long-term performance and survival. For example, management could ask themselves: should we change the product? The price? Should we adjust our value proposition? These are essential considerations to stay ahead of rivals in the face of the pivotal change MiFID II could impose.

To answer these questions, the methodology of this project is divided into two phases. Phase 1 is a qualitative analysis, in which eight industry insiders were interviewed about their knowledge of the ER industry and their perspectives on MiFID II. Following a predetermined set of questions, this phase determined the key variables of interest for performing the quantitative analysis. These key variables were industry coverage (defined by the number of recommendations by a research firm on a given month) and analyst count (the number of ER analysts the research firm had on a given month). I also received insight on a key variable that could determine firms’ coverage and analyst count: firm size (in this case, determined by their number of analysts). Then, I summarize the interviewees’ insights into three main topics: industry growth, changes in the business model, and competitive dynamics. This section of the qualitative analysis provides insight into the strategic considerations of the US ER industry and
how MiFID II has influenced it. Finally, based on these results, I provide a set of hypotheses that
guide me on the quantitative analysis, focusing on observing associations between industry
coverage and analyst count, and an indicator variable to determine if the period in which these
variables are being counted was before or after MiFID II (with either a 0 or a 1 value).

On the quantitative analysis (phase 2), this study provides both visual representations and
a Fixed Effects regression over a 48-month period (before and after MiFID II) to assess possible
associations between coverage and analyst count and the indicator variable for the overall dataset
and datasets with only big and small ER firms. The results of the quantitative analysis are
positive (and significant) associations between industry coverage and analyst count on research
providers with the MiFID II indicator variable. Although not controlling for time-variant
unobservable variables, the results from these regressions can be attributed to the unintended
consequences of the European regulation on the US ER industry, allowing US firms to gain a
competitive advantage over European ER companies. This situation could lead to an increase in
coverage and analyst count for the US ER industry.

This study makes several contributions to the research on MiFID II and the US ER
industry, such as:

The first contribution is to analyze the effect of MiFID II in the US. Although experts
have remarked that MiFID II will be important in the US, there is still no other detailed study on
how this regulation affects US capital markets. Most research focuses on the European side of
financial markets, yet there is still no project on the American side.

The second contribution is to expand the discussion on variables regarding ER that have
not yet been discussed in-depth and assess how they might change because of MiFID II. Issues
such as product differentiation, changes in revenue models, and competitive dynamics are analyzed with the insight of industry experts. Thus, this project provides experts’ perspectives on how the industry will look like years from now. According to McKinsey and Company (2017), “there will be an end to equity research as we know it,” and having the insights of the key industry players is something that other studies have not included in their assessment.

The third contribution is to provide more progress in identifying future trends for this industry so companies can be more aware of how to adapt. While I recognize that this research may not provide a complete future outlook, this paper addresses the ER industry’s holistic shift, analyzing its key performance variables (specifically coverage and analyst count) and its strategic horizon. Can ER survive? Does it need to change its client base? Few reports have attempted to study the strategic implications on ER firms after the regulatory changes in Europe (Amzallag, Guagliano, and Lo Passo 2021; Zwicky, Eskildsen, Bjørk, and Halvadakis 2018; Sertti 2020). This analysis allows for the development of a clear picture of how the ER field has changed over time to be then able to generate specific recommendations to the ER community on how to best position ER firms in this volatile environment.
LITERATURE REVIEW

Research on MiFID II is relatively new, given its recent implementation. Nevertheless, there has been an intense, productive, and important discussion about the effects of this regulation on different elements of the ER industry. Most of these studies have focused on analyzing MiFID II’s consequences on the product of this industry: research analyst coverage (specifically regarding quality and quantity). The studies have also provided empirical evidence about the effect of this regulation on other variables, such as the relationship between the buy- and sell-side and market liquidity. This section presents the empirical findings of this regulation’s effects on the European ER industry.

Firm Coverage

There was a significant decrease in the number of analysts covering European firms after the introduction of MiFID II (Amzallag et al. 2021; Anselmi and Petrella 2020; Fang et al. 2020; Guo and Mota 2019; Sertti 2020). Fang et al. (2020) reported that 334 firms in all public firms headquartered in the European Economic Area countries from 2015 to 2019 completely lost their stock coverage.

According to Guo and Mota (2019), this effect is more significant in large-cap firms since research providers will be more likely to reduce staffing on firms that already have more analysts covering them. However, Anselmi and Petrella (2020) did not find significant differences in the decrease in analyst coverage between small- and large-cap stocks in a sample of 2,000 European stocks.
For Sertti (2020), the labor supply of ER analysts worsened with the entrance of MiFID II. The coverage of European firms decreased 5.3%, and analysts employed by European brokerages decreased by 11.6%.

**Quality of Research**

Overall, studies found that the quality of the analyst forecasts had improved after the introduction of MiFID II (Amzallag et al. 2021; Anselmi and Petrella 2020; Fang et al. 2020; Guo and Mota 2019; Liu and Yezegel 2020; Solonaru and Tornea 2020).

The quality improvement is reportedly related to the reduction in stock coverage by lower-performing analysts. Analysts that dropped coverage were said to be the ones performing worse in their profession: they have more forecasting errors, typically overvalue recommendations more, and have less experience in the firm and covering a company (Fang et al. 2020). Solonaru and Tornea (2020) concluded that this increased quality is also due to the decrease in the analysts’ optimism bias. Before MiFID II, analysts presented optimistic forecasts to please their clients and thus capture more brokerage commissions, negatively impacting the investors’ decisions. After MiFID II's cost unbundling provisions and the need to formally pay for the service, client expectations have heightened, looking for more accurate and valuable information. For Guo and Mota (2019), this significant increase in the quality of research is because unbundling “puts a price on research” and promotes competition between analysts.

**Liquidity of The Covered Firms**

MiFID II has a negative impact on the liquidity (measured by bid-ask spreads of the firms covered), especially for small- and mid-cap firms (Anselmi and Petrella 2020; Liu and Yezegel
2020 Sertti 2020). This impact has produced a liquidity decline of 12.4% for the affected companies (Sertti 2020). This effect could result from the positive relationship between MiFID II and the bid-ask spread for both small- and mid-cap companies (Amzallag et al. 2021; Anselmi and Petrella 2020).

**Firm Size**

Small- and mid-sized companies’ coverage is less affected by the introduction of MiFID II than large companies (Guo and Mota 2019), yet more affected in terms of liquidity (Anselmi and Petrella 2020).

**Relationship between The Buy- and Sell-Side**

MiFID II has enhanced the relationship between the buy- and sell-side. After MiFID II, investors gained more bargaining power and requested more specific information about the securities; they also became more engaged and demanding with their ER provider. Investors are also paying for the ER service. Furthermore, ER analysts also face increased pressure to be competitive and deliver high-quality stock recommendations to the buy-side (Fang et al. 2020).

Although MiFID II’s introduction might entail a reduction in coverage for some stocks, as well as a reduction in the number of ER analysts, the studies concluded that the introduction of this regulation had accomplished its mission: “fair, transparent, stable, efficient, and integrated system of financial markets” (Liu and Yezegel 2020, 1), although it also entails negative side-effects to the ER industry (job loss and decrease on the liquidity of small firms covered).
Having addressed the studies that explored the effects of MiFID II on different variables of the ER industry, I present some studies that are focused on discussing the importance of capturing the effect of MiFID II beyond the quantitative change in one variable.

Abhayawansa, Aleksanyan, Immam, Millo, and Spence (2017) bring a different perspective of ER factors that could be affected by MiFID II. For them, “extant research in this domain tends to reduce sell-side analyst activity to the recommendations, price targets or earnings forecasts that they routinely produce for a more or less efficient market” (1). From this perspective, researchers need to understand that ER analysts are more than the reports and recommendations they produce. So, measuring only quality does not capture interactions between ER analysts and other important actors, forces, and variables. By interviewing 57 actors in buy-side and sell-side, they concluded that studies must approach analysis as a more complex and social factor in the ER field. For these authors,

This all implies that our understanding of financial analysts, and of ‘market participants’ more broadly, can be enriched if placed within a properly social or sociological frame of reference, rather than within the ahistorical, atemporal and mechanistic frameworks provided by neoclassical economics which have hitherto informed the overwhelming majority of literature on financial analyst. (30)

This study emphasizes the necessity of a more holistic, strategic analysis of MiFID II’s effect, not only centered in quantitative measures such as quality, span, or jobs in ER.

Zwicky et al. (2018) studied how an ER Danish firm (ABG) should strategically position its ER offering in a post-MiFID II context. The authors performed a competitive analysis for ABG and provided a different lens to the stock coverage-centered approaches. They found that one direct consequence of MiFID II is that it switched the bargaining power from the sell-side to
the buy-side. The report also detected that the firm’s key resource would be the analysts and introduced competitive landscape analysis about this industry. They also provided strategic recommendations for their firm of study. For example, the researchers suggested that the firm should retain a broad coverage approach, focusing on small- or mid-cap companies; they also suggested exploring the possibility of focusing more on global and macro research. These recommendations are based on the strategic analysis of their positioning strategy and key resources and capabilities.

**Literature Gaps**

The following paragraphs summarize questions the existing literature has left unanswered regarding MiFID II.

First, literature over-allocates its research to stock coverage. There is still a gap in knowing how this regulation has affected other key industry variables, specifically related to business strategies such as competitive positioning, business model innovation, key resources and capabilities, and company structure and culture.

Second, as of now, to my knowledge, there are no peer-reviewed academic papers on the impact of MiFID II on the US ER industry. Research on the US industry has been previously used as a control group to assess the effects of the regulation in Europe. However, there has been significant discussion about whether it would be optimal to implement this policy in the US or not, and some large asset managers are already unbundling the research costs. Moreover, even some American clients subsidize research for their European partners (Fang et al. 2019).
Third, few reports have performed a strategic analysis to assess the industry’s current state, and less so in the US, after the regulatory changes in Europe (Amzallag et al. 2021; Zwicky et al. 2018). Even though research agrees that there will be increased transparency pro-investor measures and an increase in research quality, there is still a gap in considering the long-term impact of this change.
QUALITATIVE ANALYSIS OF THE EFFECTS OF MIFID II ON THE US EQUITY RESEARCH INDUSTRY

The objective of this phase is to assess the most relevant information, based on experts’ views, to understand how MiFID II has impacted the US ER industry. To collect the data, this study followed the methodology implemented by Zwicky et al. (2018) when analyzing European firms’ reactions to MiFID II.

Data Collection

Data was collected through an in-person meeting or by phone interviews. The interview format was 15-20 open-ended questions (see appendix 1). The interview process introduced this study and its objectives, discussed the industry pre- and post-regulation, and ended with a discussion of the effects of MiFID II on different topics that cover strategic analysis (more specifically, industry consolidation, focus on differentiation, consideration of other revenue models, etc.). I was the only interviewer, ensuring that every interview was seen by the same person and being more consistent in data collection. Interviews lasted between 40-60 minutes.

The sample from the qualitative research was eight interviewees between experts on finance and investment research: two ER analysts, four Managing Directors from ER divisions in investment banks, one COO of Research, and the Global Head of Research for an Investment Bank. Following a non-disclosure agreement, the names of the interviewees and their respective firms were not disclosed.

For this stage, to capture the experts’ insights as they are, I did not control for differences in the interviewees’ process. Even though the interviews were open-ended and adapted to the
interviewee’s role and experience, the overall format and questions used can be found in appendix 1.

**Data Analysis**

The main purpose of the analysis in these interviews was to assess experts’ views and find commonalities in the key variables they mentioned. The variables referred to as important to understand MiFID II’s effects in the US were used in the second stage of this project. Interviewee responses were classified and analyzed according to the strategic analysis topic they touched upon. Topics include the industry growth, changes in the business model, and competitive dynamics before and after MiFID II. The idea is to create a panorama of the US ER industry before and after the change in regulation with the interviews’ data.

**Results**

This section summarizes the interviewees’ answers, grouped by the most highlighted topics.

Prior to MiFID II, all interviewees remarked that there was indeed a worry in the US ER industry that cost unbundling regulations would decrease client demand for research. The consensus now sees a bright future ahead for the overall industry. Nevertheless, an effect on the US ER industry by this European legislation is flagged. Six interviewees highlighted that the main effect was on certain ER firms that could not adapt to the change. Overall, interviews highlighted two main variables (the dependent or Y variables of this study): stock coverage and analyst count.
Industry Coverage by Number of Recommendations

When the interviewees were asked about how they thought MiFID II changed coverage or volume of stock recommendations in the US market, the consensus was that it has increased as a general trend. Compared to previous years, coverage has been on an upward trend due to the increased number of firms going public, especially post-pandemic. However, regarding MiFID II, according to four Managing Directors, they expected that MiFID II would negatively affect the industry because European studies found a decrease in coverage after this regulation. They also commented that MiFID II’s effect on the number of recommendations issued was less than expected, enclosing its higher impact in Europe. According to one Associate interviewed, there is agreement that coverage has not suffered a drastic change due to MiFID II.

Industry Coverage by Number of Analysts

Regarding interviewees’ thoughts about how MiFID II would change the number of ER analysts in the US, four interviewees mentioned that analyst headcount, defined as the number of analysts covering a specific firm, had had a significant reduction due to MiFID II in the US ER market. On the other hand, four interviewees commented that this number is rising but not significantly. Analyst headcount is a proxy for the total number of employees in ER firms, given that each analyst has a team of Associates or Vice-Presidents to support them in coverage.²

² Some researchers may argue that this is not a good approximation of the overall department headcount. However, the finding still holds in terms of team composition: even though some teams have increased depending on the research firm size, the typical team size has been stable for the past six to seven years.
However, from the current perspective (as of 2021), interviewees expressed that headcount has not been significantly affected by MiFID II. In the case of one of the firms interviewed, as a general trend, the increase in coverage over the last three years led to an increase in headcount. However, even without considering the IPO and SPAC boom, the number of analysts has not increased as expected. Although it is not a one-to-one relationship, coverage and analyst headcount after MiFID II increased in an overall trend, seen across the industry. According to ER Managing Directors and Analysts, just a few companies are shrinking due to the aftermath of MiFID II, especially small companies.

**Research Quality**

The consensus about Research Quality is that there is no change in terms of how the research was conducted and in terms of the material and value proposition of the reports nor before or after MiFID II. According to an ER analyst, the information premium has reduced over the years, and even though more and more data is available, the product itself has not changed significantly.

**Other Variables in Questionnaire**

Regarding questions from other potential variables in the questionnaire, such as the communications with the buy-side and the analysts’ profiles, were considered not having a meaningful change before and after MiFID, or they could not disclose important buy-side clients’ communications.
**Big Versus Small Research Firms**

According to the consensus of interviewees, differences in increases or decreases in coverage and analyst count could be explained by the introduction of MiFID II and the ER firm size. Size and scale seem to be the most important difference in how research firms were affected by MiFID II. Some of the interviewees’ key comments for this variable were: first, that the main winners of this regulation were large banks, by taking advantage of their multi-channel access to clients’ wallets and leveraging scale and scope; second, big firms have been more capable of adjusting their strategies and dominating small and mid-size firms by leveraging their pricing power; third, despite the high specialization small firms undergo to gain an advantage over a niche area, they are less knowable to understand how to add value, having a liability of newness if the company is starting. And finally, there are expectations of continuing consolidation trends in the research industry over the next five years. Overall, interviewees expect large banks in the U.S. to take more market shares.

**ER Firms’ Strategies**

When asking about how MiFID II affected the strategic decisions of Equity Research providers in the US, interviewees highlighted the following main points:

**Industry growth potential.** Interviewees started by commenting about their long-term prospects of the ER industry after MiFID II. Overall, interviewees are bullish on the industry’s future. Despite all the comments and the literature regarding Europe, experts argue that the need for research will always stay. Even if clients build research, they need to have many views. Thus, interviewees expect MiFID II not to have the largest impact on the industry.
Changes in the business model. More specifically, through differentiation of strategies, changes in their revenue model, and pursuing multiple channels to reach investors’ wallets.

1) Value proposition: The essence of ER is important to capital markets. Moreover, according to the interviews, this essence will not change. It is possible that the form and resources can evolve to adapt to clients’ needs, yet ER’s value-add will still be there. The value of having multiple touchpoints with the client has become more important than ever.

2) Changes in revenue models: When the interviewees were asked for their thoughts on how ER would shift from commission-based to another type of model after MiFID II, they mentioned that there were ideas that the revenue model for research should change, possibly to a subscription-based model. However, the interviewed COO said this model does not work because the different offerings are so diverse and specifically tailored to some customers that making firms pay for a package for a fee is not desirable. According to the Managing Directors, now ER is focused on thinking about the customer’s wallet holistically. For example, clients can talk to analysts even if they don't hold the stock. Over time, this idea has been adapted to make the ER model less product-centric and more customer-centric.

3) Multi-channel strategy: For six interviewees, MiFID II has exposed that companies with different channels for servicing the customer are better positioned than those without this strategy. More and more firms are attempting a multi-channel strategy to reach investors’ wallets with as many products as possible. Before MiFID II, the interviewees were concerned that the institutional investors would allocate fewer resources to research. This
situation led to two strategies: specialization (smaller firms covering niche sectors but in-depth) or scale (providing the most insight across regions and sectors, which big firms have done). Both approaches cater to different needs and customers but have prospered under uncertainty. The strategy that has not been effective is taking the middle ground and not focusing on one or the other.

**Competitive dynamics.** After these considerations on the business model, interviewees commented that competitive dynamics have surged over time, and two trends surfaced:

4) **Differentiation:** There is a rising competitive trend in the US ER industry. This trend will bring more focus to differentiation strategies to raise clients’ willingness to pay to compensate for higher costs. According to the interviewees, the research work has evolved to become one of higher quality, being more targeted and specialized.

5) **Consolidation:** According to the responses on this phase, consolidation between research firms has been slower than expected after MiFID II. Interviewees explained that firms have been increasingly aware of the benefits of scaling for increasing coverage and channels to reach customers. Some firms, for example, provide not only company-specific reports but also industry and cross-industry analyses (such as thematic reports) that leverage multiple teams to provide additional insights. These types of reports greatly benefit from larger times and wider coverage.

**Hypotheses**

The null hypothesis was formulated based on expectations from previous studies. This pool of research was based on a European sample, the region in which MiFID II holds. These
studies kept the US ER industry as the control group. Thus, MiFID II has been studied and treated as a European regulation, not measuring the possibility of an effect on other regions. This is because the effect that this cost unbundling regulation has had on investors (which in turn would lower their demand for research and thus make ER firms reduce their coverage) does not seem to hold on US market investors. Thus, if the regulation was not implemented in the US market, one cannot expect its effects. Therefore, the current research community does not expect to find any correlation between MiFID II and the coverage or analyst count of the US ER industry.

However, contrary to what most people currently believe, most of the interviewees have remarked that this regulation, although still centered in Europe, impacted the global ER industry. With the introduction of this regulation in the European market, the American firms would have a competitive advantage relative to the European market and offer broader coverage and depth to their customers. With this, one would expect a significant increase in the US firms’ coverage and analyst count post-MiFID II, with a more significant increase in the big research firms relative to small ones, given their power and benefits of scale and scope.

Thus, based on phase 1 and these perspectives, the first two hypotheses would be:

Hypothesis 1: there will be a positive correlation between the introduction of MiFID II and US ER firms’ coverage (defined as the number of recommendations issued by research firms).

Hypothesis 2: there will be a positive correlation between the introduction of MiFID II and US ER firms’ analyst count.
These are important but, based on the qualitative analysis’s insight on competitive dynamics, I wanted to perform an analysis of how big and small firms differed, which would lead to four more hypotheses for this project:

Hypothesis 3: there will be a positive correlation between the introduction of MiFID II and big US ER firms’ coverage.

Hypothesis 4: there will be a positive correlation between the introduction of MiFID II and big US ER firms’ analyst count.

Hypothesis 5: there will be a negative correlation between the introduction of MiFID II and small US ER firms’ coverage.

Hypothesis 6: there will be a negative correlation between the introduction of MiFID II and small US ER firms’ analyst count.

This disagreement in opinions for the alternative hypotheses is what I would like to assess empirically in the next stage.
EMPIRICAL ANALYSIS OF THE EFFECTS OF MIFID II ON THE US EQUITY RESEARCH INDUSTRY

Data Collection

Prior studies have examined the effect of MiFID II on the ER industry’s outcomes, both in quality and quantity, in the European market (Fang et al. 2020; Guo and Mota 2019; Solonaru and Tornea 2020). In line with these studies, and based on the results from phase 1, I estimated MiFID II’s effect on the US ER industry using two measures of the sell-side analyst outcomes: (1) the number of analysts who follow each US company and (2) the number of recommendations of these analysts.

I collected a monthly (as Anselmi and Petrella 2020; Solonaru and Tornea 2020) sample of stocks from all firms in the Russell 3000 index that have been in the index at least from 2016 to the present (to account for firms of different market capitalization). This study only included data from 2016 to 2019 to not include the effects of COVID-19. The Russell 3000 index was chosen because it captures 98% of the US stock market, being diversified in industry and company sizes.

Data were collected through two primary databases: Bloomberg and Wharton Research Data Services, or WRDS (which includes the Institutional Brokers Estimates System or I/B/E/S database, and the Center for Research in Security Prices or CRSP). For each data point, I gathered the variables depicted below in Table 1. Overall description of I/B/E/S Data: the raw dataset (defined as the one collected from these databases and then used to generate a grouped dataset) contained 30 different variables coming from the I/B/E/S queries in WRDS, and others were created with the information provided (specifically, the variables “pre_post” and
“big_small”) as indicator variables to capture the key predictor highlighted in the qualitative phase (size). Each row represented one specific recommendation for the companies in the Russell 3000. The data contained 660,881 recommendations over the 2016-2019 period.

For the effects of the regressions, the data was grouped by month and research firm, adding the total number of recommendations and the total number of analysts. Data were collected at the covered company level, counting analysts’ names. Using WRDS, I could recognize where these analysts work and then calculate changes in the number of analysts per firm over time.

**Data and Variables: Measurement**

Find below a description of the key variables:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variables</strong></td>
<td></td>
</tr>
<tr>
<td>coverage</td>
<td>Sum of recommendations per month for each covered firm. This was transformed to logarithms for the effects of regression analysis due to skewness in the distribution.</td>
</tr>
<tr>
<td>Analysts</td>
<td>Sum of unique analyst names in each recommendation per month for each covered firm. For the effects of regression analysis, this was transformed to logarithms due to</td>
</tr>
</tbody>
</table>
skewness in the distribution.

### Predictors or Independent Variables

<table>
<thead>
<tr>
<th>pre_post</th>
<th>Indicator variable. 1 represents periods after MiFID II (January 3rd, 2018), 0 represents periods before MiFID II.</th>
</tr>
</thead>
<tbody>
<tr>
<td>big_small</td>
<td>Indicator variable. 1 represents the recommendation was issued by a big research firm (determined by firms that had analyst count per year in 2016 as 75th percentile or above). 0 is small firms (0th-74th percentile).</td>
</tr>
</tbody>
</table>

### Data Analysis

This study focuses on analyzing observational and historical data and comparing the difference between the same research firm (specifically its number of recommendations and analysts) over time, before and after MiFID II. The Fixed-Effects (FE) Analysis with a Panel Regression is an ideal method in this case. This model allows controlling for unobservable variation within each firm that is compared (removing the omitted variable bias), focusing on the variation within each firm across time by controlling for individual-specific attributes (observable or not) that do not vary across time.

The European studies regarding MiFID II used a Difference-in-Differences analysis (DiD) given they presented a control group, which was the US market. In this case, I am arguing
that all global markets could have been affected by MiFID II, and thus a control group cannot be constructed. In this case, I only focused on the US market.

Results

**Exploratory Data Analysis (EDA)**

Table 2. Head of The Dataset

<table>
<thead>
<tr>
<th>Estimator ID</th>
<th>year</th>
<th>big_small</th>
<th>pre_post</th>
<th>coverage</th>
<th>Analysts</th>
<th>In_coverage</th>
<th>In_Analysts</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACUMEN</td>
<td>201805</td>
<td>2018</td>
<td>0</td>
<td>1</td>
<td>22</td>
<td>1</td>
<td>3.0010</td>
</tr>
<tr>
<td>AEGISCAP</td>
<td>201608</td>
<td>2016</td>
<td>1</td>
<td>0</td>
<td>30</td>
<td>1</td>
<td>5.4381</td>
</tr>
<tr>
<td></td>
<td>201701</td>
<td>2017</td>
<td>1</td>
<td>0</td>
<td>20</td>
<td>1</td>
<td>2.9957</td>
</tr>
<tr>
<td></td>
<td>201702</td>
<td>2017</td>
<td>1</td>
<td>0</td>
<td>342</td>
<td>1</td>
<td>5.8348</td>
</tr>
<tr>
<td></td>
<td>201703</td>
<td>2017</td>
<td>1</td>
<td>0</td>
<td>92</td>
<td>2</td>
<td>4.5218</td>
</tr>
<tr>
<td>WOLFE</td>
<td>201906</td>
<td>2019</td>
<td>1</td>
<td>1</td>
<td>200</td>
<td>3</td>
<td>5.2983</td>
</tr>
<tr>
<td></td>
<td>201907</td>
<td>2019</td>
<td>1</td>
<td>1</td>
<td>286</td>
<td>3</td>
<td>5.6569</td>
</tr>
<tr>
<td></td>
<td>201908</td>
<td>2019</td>
<td>1</td>
<td>1</td>
<td>462</td>
<td>5</td>
<td>6.1355</td>
</tr>
<tr>
<td></td>
<td>201909</td>
<td>2019</td>
<td>1</td>
<td>1</td>
<td>80</td>
<td>1</td>
<td>4.3020</td>
</tr>
<tr>
<td>WOODGUND</td>
<td>201803</td>
<td>2018</td>
<td>1</td>
<td>1</td>
<td>126</td>
<td>1</td>
<td>4.8363</td>
</tr>
</tbody>
</table>

2246 rows x 7 columns

Table 3. Summary Statistics of Quantitative Variables of The Dataset

<table>
<thead>
<tr>
<th></th>
<th>count</th>
<th>mean</th>
<th>std</th>
<th>min</th>
<th>25%</th>
<th>50%</th>
<th>75%</th>
<th>max</th>
</tr>
</thead>
<tbody>
<tr>
<td>year</td>
<td>2246.0</td>
<td>2017.6848</td>
<td>1.0525</td>
<td>2016.0000</td>
<td>2017.0000</td>
<td>2018.0000</td>
<td>2019.0000</td>
<td>2019.0000</td>
</tr>
<tr>
<td>big_small</td>
<td>2246.0</td>
<td>0.7057</td>
<td>0.4558</td>
<td>0.0000</td>
<td>0.0000</td>
<td>1.0000</td>
<td>1.0000</td>
<td>1.0000</td>
</tr>
<tr>
<td>pre_post</td>
<td>2246.0</td>
<td>0.5668</td>
<td>0.4956</td>
<td>0.0000</td>
<td>0.0000</td>
<td>1.0000</td>
<td>1.0000</td>
<td>1.0000</td>
</tr>
<tr>
<td>coverage</td>
<td>2246.0</td>
<td>294.2480</td>
<td>576.0093</td>
<td>18.0000</td>
<td>88.0000</td>
<td>171.0000</td>
<td>342.0000</td>
<td>21987.0000</td>
</tr>
<tr>
<td>Analysts</td>
<td>2246.0</td>
<td>2.1728</td>
<td>2.0994</td>
<td>1.0000</td>
<td>1.0000</td>
<td>1.0000</td>
<td>3.0000</td>
<td>45.0000</td>
</tr>
<tr>
<td>In_coverage</td>
<td>2246.0</td>
<td>5.1505</td>
<td>1.0048</td>
<td>2.8904</td>
<td>4.4773</td>
<td>5.1417</td>
<td>5.8348</td>
<td>9.9992</td>
</tr>
<tr>
<td>In_Analysts</td>
<td>2246.0</td>
<td>0.5194</td>
<td>0.6508</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>1.0986</td>
<td>3.8067</td>
</tr>
</tbody>
</table>
Tables 2 and 3 present the main descriptive information of the dataset: in Table 2, each row represents the collection of recommendations and their analyst count (and their respective logarithms) for one research firm for one month, also having indicators whether such row is from before or after MiFID II, or if the research firm was big (75th percentile or above by analyst count) or small. Overall, 660,881 recommendations were analyzed throughout four years, 141 ER US Firms (69 considered as big and 72 as small), and a range of analyst count from 572 in 2016 to 1553 in 2019.

Coverage

Figure 1. Overall Dataset: Number of Recommendations over Time

Table 4. Overall Dataset: Number of Recommendations over Time (Table Form)

<table>
<thead>
<tr>
<th>year</th>
<th>sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2016</td>
</tr>
<tr>
<td>1</td>
<td>2017</td>
</tr>
<tr>
<td>2</td>
<td>2018</td>
</tr>
<tr>
<td>3</td>
<td>2019</td>
</tr>
<tr>
<td></td>
<td>68345</td>
</tr>
<tr>
<td></td>
<td>161551</td>
</tr>
<tr>
<td></td>
<td>201009</td>
</tr>
<tr>
<td></td>
<td>229976</td>
</tr>
</tbody>
</table>
Figure 1 and Table 4 show that Stock Coverage, defined as the number of US ER firms’ analyst recommendations, has increased year over year, from 68,345 recommendations in 2016 to 229,976 in 2019. The largest increment on the sample was from 2016 to 2017 (136%), and the smallest from 2018 to 2019 (14.4%). Despite observing an increment, it has been smaller over time, progressively decreasing year over year. Post-MiFID II growth rate in coverage slowed down compared to pre-MiFID II. These visuals seem to support the first hypothesis, highlighting an increase in coverage after MiFID II relative to the period before.

After these visual representations, I decided to test the hypothesis using the FE Regression. For this variable, I tested whether there is a strong association between the number of recommendations per research firm and whether they were issued before or after MiFID II. To test the presence of a positive correlation of this growth after MiFID II, a regression with the following formula was used: \( \text{Ln(Coverage)} = \text{Alpha} + B1 \times \text{pre_post} \) (0 if pre, 1 if post) + Fixed Effects Variable + \( E \).

The results of this regression are shown in Table 5.
Table 5 shows a positive correlation between the pre_post indicator and the logarithm of analyst coverage, reflecting an overall increase between the number of recommendations in the US ER industry before and after the introduction of MiFID II, rejecting the null hypothesis (hypothesis 1). Based on the current FE controls and leaving time-variant unobservable variables, this positive association holds at 99% significance. Contrary to the expected negative effects found in European markets (Amzallag et al. 2021; Anselmi and Petrella 2020; Fang et al. 2020, Guo and Mota 2019; Serti 2020), but in line with what was said by the industry experts in phase 1. It is important to remark that the r-squared for this model is 4.15%.
Coverage by Big vs. Small Firms

Figure 2. Big and Small Firms Datasets: Number of Recommendations over Time

Table 6. Big and Small Firms Datasets: Number of Recommendations over Time (Table Form)

<table>
<thead>
<tr>
<th>year</th>
<th>big_small</th>
<th>sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2016</td>
<td>16584</td>
</tr>
<tr>
<td>1</td>
<td>2016</td>
<td>51761</td>
</tr>
<tr>
<td>2</td>
<td>2017</td>
<td>27342</td>
</tr>
<tr>
<td>3</td>
<td>2017</td>
<td>134209</td>
</tr>
<tr>
<td>4</td>
<td>2018</td>
<td>38565</td>
</tr>
<tr>
<td>5</td>
<td>2018</td>
<td>162444</td>
</tr>
<tr>
<td>6</td>
<td>2019</td>
<td>34858</td>
</tr>
<tr>
<td>7</td>
<td>2019</td>
<td>195118</td>
</tr>
</tbody>
</table>

Figure 2 and Table 6 showcase the dominance of big research firms over small research firms in the number of recommendations issued. The difference in coverage between big and small firms increased significantly: big companies had 5.6x more coverage in 2019 versus 3.1x in 2016 (39.3% annualized increase in big firms, and 20.4% annualized increase in small). This fact aligns with what was mentioned in stage 1 by the interviewees. It is also important to
highlight the decrease in coverage for small firms between 2018 and 2019. For small firms, in 2019, their coverage decreases by 9.6%.

Regarding big firms, the biggest increase occurred again in 2017 (159%), a period in which small firms grow their coverage by 64.9%. Big companies’ smallest increase occurs in 2018 (21%). The biggest growth occurs before the introduction of MiFID II, and the smallest growth occurs right after. Although no causation can be determined, these insights are interesting and could be related to the unintended effects of MiFID II that is discussed in the Discussion section.

To assess the significance of these results, regressions were created.
Coverage by big firms

Table 7. Fixed Effects Regression for Big Firm Analyst Coverage on pre_post Indicator

<table>
<thead>
<tr>
<th>Dep. Variable:</th>
<th>lr_coverage</th>
<th>R-squared:</th>
<th>0.0574</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimator:</td>
<td>Panel OLS</td>
<td>R-squared (Between):</td>
<td>0.0932</td>
</tr>
<tr>
<td>No. Observations:</td>
<td>1585</td>
<td>R-squared (Within):</td>
<td>0.0574</td>
</tr>
<tr>
<td>Date:</td>
<td>Tue, Dec 07, 2021</td>
<td>R-squared (Overall):</td>
<td>0.0899</td>
</tr>
<tr>
<td>Cov. Estimator:</td>
<td>Unadjusted</td>
<td>F-statistic:</td>
<td>91.475</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Entities:</td>
<td>200</td>
</tr>
<tr>
<td>Avg Obs:</td>
<td>7.9250</td>
<td>Distribution:</td>
<td>F(1,1502)</td>
</tr>
<tr>
<td>Min Obs:</td>
<td>0.0000</td>
<td>Max Obs:</td>
<td>35.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P-value:</td>
<td>0.0000</td>
</tr>
<tr>
<td>Time periods:</td>
<td>36</td>
<td>Distribution:</td>
<td>F(1,1502)</td>
</tr>
<tr>
<td>Avg Obs:</td>
<td>44.028</td>
<td>Min Obs:</td>
<td>13.000</td>
</tr>
<tr>
<td>Max Obs:</td>
<td>59.000</td>
<td>Parameter</td>
<td>Std. Err.</td>
</tr>
<tr>
<td>pre_post</td>
<td>0.4420</td>
<td>0.0462</td>
<td>9.5643</td>
</tr>
</tbody>
</table>

Table 7 shows that for big ER firms, there is a positive correlation between the pre_post indicator and coverage, implying a significant increase in coverage between pre- and post-MiFID II. Again, assuming current FE controls and leaving time-variant unobservable variables, this association holds at a 99% significance level, rejecting the null hypothesis (hypothesis 3). The adjusted r-squared in this regression is 5.74%. This variable cannot be compared to previous literature on the field, given no data has been published yet on research firm size, but for covered firm size. However, based on qualitative analysis information, this result is in line with the
interviews. Big research firms tend to have an advantage in coverage. These companies were not negatively impacted, contrary to what was expected before beginning this research. The results above are in line with the expectations of industry experts, given there is a strong positive correlation between the pre_post indicator and coverage.

Coverage by small firms

Table 8. Fixed Effects Regression for Small Firm Analyst Coverage on pre_post Indicator

| Dep. Variable: | in_coverage | R-squared: | 0.0080 |
| Estimator: | PanelOLS | R-squared (Between): | 0.0334 |
| No. Observations: | 661 | R-squared (Within): | 0.0060 |
| Date: | Tue, Dec 07 2021 | R-squared (Overall): | 0.0331 |
| Time: | 21.22.21 | Log-Likelihood: | -725.81 |
| Cov. Estimator: | Unadjusted | F-statistic: | 3.2703 |
| Entites: | 198 | P-value: | 0.0711 |
| Avg Obs: | 3.3384 | Distribution: | F(1,542) |
| Min Obs: | 0.0000 | Max Obs: | 24.000 |
| F-statistic (robust): | 3.2703 | P-value: | 0.0711 |
| Avg Obs: | 18.391 | Distribution: | F(1,542) |
| Min Obs: | 4.0000 | Max Obs: | 34.000 |

Parameter Estimates

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Std. Err.</th>
<th>T-stat</th>
<th>P-value</th>
<th>Lower CI</th>
<th>Upper CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>pre_post</td>
<td>0.1432</td>
<td>0.0792</td>
<td>1.0064</td>
<td>0.0711</td>
<td>-0.0123</td>
</tr>
</tbody>
</table>

F-test for Poolability: 2.4963
P-value: 0.0000
Distribution: F(117,542)

Data presented in Table 8 indicate a positive correlation between ER small firms’ coverage before and after MiFID II, contrary to the experts’ hypothesis, thus failing to reject the null (hypothesis 5). The adjusted r-squared in this regression is 0.6%. With the current FE
controls and leaving time-variant unobservable variables, the relationship holds at 90% significance. There is no possibility of contrasting these results with previous ones, given no data has been published yet on research firm size, but for covered firm size. Although the decrease between 2018 and 2019 is observed, the regression deems at a 48-month window that the overall association is positive.

**Analyst Count**

Figure 3. Overall Dataset: Number of Analysts over Time

![Analyst count over time](image)

Table 9. Overall Dataset: Number of Analysts over Time (Table Form)

<table>
<thead>
<tr>
<th>year</th>
<th>sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2016</td>
</tr>
<tr>
<td>1</td>
<td>2017</td>
</tr>
<tr>
<td>2</td>
<td>2018</td>
</tr>
<tr>
<td>3</td>
<td>2019</td>
</tr>
</tbody>
</table>

Figure 3 and Table 9 present that, even though analyst count increased year over year, the growth rate increased at a slower pace between the periods before and after the introduction of MiFID II. Again, the highest growth rate is observed between 2016 and 2017 (119.6%), and the
lowest one between 2018 and 2019 (3.6%). These visuals support a positive correlation between the pre_post indicator and analyst count.

To observe if this trend is significant before and after MiFID II, I performed a similar regression to what was performed for coverage. The formula for the next regressions is the following: \( \text{Ln(Analysts)} = \text{Alpha} + B1*\text{pre_post} + \text{Fixed Effects Variable} + E \). In this case, the variable Analysts refers to the analyst count over one year, grouped by each research firm.

Table 10. Fixed Effects Regression for Overall Analyst Count on pre_post Indicator

<table>
<thead>
<tr>
<th>Dep. Variable: ln_Analysts</th>
<th>R-squared: 0.0586</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimator: Panel OLS</td>
<td>R-squared (Between): 0.2063</td>
</tr>
<tr>
<td>No. Observations: 2246</td>
<td>R-squared (Within): 0.0586</td>
</tr>
<tr>
<td>Date: Tue, Dec 07 2021</td>
<td>R-squared (Overall): 0.2104</td>
</tr>
<tr>
<td>Cov. Estimator: Unadjusted</td>
<td>F-statistic: 127.23</td>
</tr>
<tr>
<td>Entities: 200</td>
<td>P-value: 0.0000</td>
</tr>
<tr>
<td>Avg Obs: 11.230</td>
<td>Distribution: F(1,2045)</td>
</tr>
<tr>
<td>Min Obs: 1.0000</td>
<td></td>
</tr>
<tr>
<td>Max Obs: 35.000</td>
<td>F-statistic (robust): 127.23</td>
</tr>
<tr>
<td>Time periods: 36</td>
<td>P-value: 0.0000</td>
</tr>
<tr>
<td>Avg Obs: 62.399</td>
<td>Distribution: F(1,2045)</td>
</tr>
<tr>
<td>Min Obs: 17.000</td>
<td></td>
</tr>
<tr>
<td>Max Obs: 91.000</td>
<td></td>
</tr>
</tbody>
</table>

Parameter Estimates

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Std. Err.</th>
<th>T-stat</th>
<th>P-value</th>
<th>Lower CI</th>
<th>Upper CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>pre_post</td>
<td>0.2746</td>
<td>11.290</td>
<td>0.0000</td>
<td>0.2267</td>
<td>0.3222</td>
</tr>
</tbody>
</table>

F-test for Poolability: 6.7216
P-value: 0.0000
Distribution: F(199,2045)
Table 10 presents a positive correlation between analyst count and the MiFID II indicator, rejecting the null hypothesis for the second hypothesis. Leaving time-variant unobservable variables, the relationship holds at a 99% significance level with the current FE model. These results exhibit a behavior contrary to the expected negative effects in analyst count reported in the European ER industry (Amzallag et al. 2021; Anselmi and Petrella 2020; Fang et al. 2020, Guo and Mota 2019; Sertti 2020), but in agreement with the information provided by experts in phase 1. In this case, the r-squared for this model is 5.86%.

Analysts by Big vs. Small Firms

Regarding Analyst count, the same approach applies.

Figure 4. Big and Small Firms Datasets: Number of Analysts over Time
Table 11. Big and Small Firms Datasets: Number of Analysts over Time (Table Form)

<table>
<thead>
<tr>
<th>year</th>
<th>big_small</th>
<th>sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2016</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>2016</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2017</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>2017</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>2018</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>2018</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>2019</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>2019</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 4 and Table 11 show the dominance of big research firms over small research firms is remarkable. The increasing difference in analysts between big and small firms increased significantly: big companies had 6.1x more analysts in 2019 versus 3.4x in 2016. This fact aligns with what was mentioned by four interviewees in stage 1. Again, the continuous growth and dominance in the ER market of the big firms versus small ones can be seen. This result seems to indicate a relationship between big and small firms’ analyst count and the fact of being either before or after MiFID II.

Regarding big firms, the biggest increase occurred again in 2017 (133%), a period in which small firms grew their coverage by 73.6%. On the other hand, big companies’ smallest increase occurred in 2019 (8.1%). Thus, we can see stagnant growth in the analyst count for big firms.

Regarding small firms, the annualized increase over the four years is 14%. However, in 2019, their analyst count decreased by 4.5%. The overall result resembles the findings in coverage for small firms, and it is not in agreement with phase 1 expectations, as interviewees
were expecting a higher negative impact in coverage on small firms, rather than an overall increase. However, a regression shall be run to observe this association at a 48-month window.

**Analysts by big firms**

Table 12. Fixed Effects Regression for Big Firm Analyst Count on pre_post Indicator

<table>
<thead>
<tr>
<th>Parameter Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parameter</strong></td>
</tr>
<tr>
<td>pre_post</td>
</tr>
</tbody>
</table>

F-test for Poolability: 7.9991  
P-value: 0.0000  
Distribution: F(81,1502)

Table 12 presents that for big firms, there is a relationship at a 99% significance level (assuming a FE model and leaving time-variant unobservable variables uncontrolled) for the pre_post variable, highlighting a positive correlation between analyst count and the variable indicating the pre- and post-MiFID II periods, rejecting the null hypothesis (hypothesis 4). This regression’s adjusted r-squared is 7.12%. Relative to the literature, these results are contrary to
what was found in the European firms (Guo and Mota 2019). Nevertheless, this result is also in line with interviews based on the qualitative analysis. Big research firms tend to increase analyst count after MiFID II.

**Analysts by small firms**

Table 13. Fixed Effects Regression for Small Firm Analyst Count on pre_post Indicator

<table>
<thead>
<tr>
<th>Dep. Variable:</th>
<th>R-squared:</th>
<th>0.0158</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimator:</td>
<td>PanelOLS</td>
<td>R-squared (Between):</td>
</tr>
<tr>
<td>No. Observations:</td>
<td>651</td>
<td>R-squared (Within):</td>
</tr>
<tr>
<td>Date:</td>
<td>Tue, Dec 07 2021</td>
<td>R-squared (Overall):</td>
</tr>
<tr>
<td>Cov. Estimator:</td>
<td>Unadjusted</td>
<td></td>
</tr>
</tbody>
</table>

| F-statistic: | 8.7195 |
| Entities: | 198 | P-value | 0.0033 |
| Avg Obs: | 3.3384 | Distribution: | F(1,542) |
| Min Obs: | 0.0000 |
| Max Obs: | 24.000 | F-statistic (robust): | 8.7195 |
| P-value | 0.0033 |
| Time periods: | 38 | Distribution: | F(1,542) |
| Avg Obs: | 18.501 |
| Min Obs: | 4.0000 |
| Max Obs: | 34.000 |

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Std. Err.</th>
<th>T-stat</th>
<th>P-value</th>
<th>Lower CI</th>
<th>Upper CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>pre_post</td>
<td>0.0332</td>
<td>2.9529</td>
<td>0.0033</td>
<td>0.0329</td>
<td>0.1634</td>
</tr>
</tbody>
</table>

F-test for Poolability: 1.6899
P-value: 0.0001
Distribution: F(117,542)

Table 13 presents a positive relationship between small firms’ analyst count and the pre_post variable. Leaving uncontrolled time-variant unobservable variables, and with the current FE analysis, the relationship holds at a 99% significance level (with an adjusted r-squared of 1.58%). These results fail to reject the null hypothesis (hypothesis 6), opposite to
what phase 1 results would indicate. This result also shows an increase in analyst count between the years before and after MiFID II, but smaller than big firms (31.76% annualized increase in big firms, and 14% annualized increase in small), even decreasing in 2019. These results differ from previous research (Guo and Mota 2019), as they did not find a decrease in analyst count in small firms.
DISCUSSION AND CONCLUSIONS

The main objective of this study is to analyze how MiFID II affected the strategic decisions of Equity Research providers in the US. In other words, this research focuses on the effects and strategic implications of MiFID II in the US ER industry. To analyze this trend, a two-phase project was designed: first to gather insights on the strategic considerations of industry experts and then performed FE regressions to determine if there were strong correlations between the introduction of MiFID II and variables of interest (coverage and analyst count). These analyses were performed on recommendations from Russell 3000 companies that were in the index for the whole sample period (2016 to 2019) from 1553 analysts in 141 ER firms. Based on the qualitative and quantitative analyses, the main conclusions from this project are below.

The qualitative analysis of this research determined three main strategic insights. Overall, there is consensus that MiFID II has a positive effect in terms of coverage and analyst count for the US ER industry. Coverage and the number of analysts are the main variables that insiders remark could have been most affected. Apart from highlighting key variables, interviewees also point out strategic considerations regarding the impact of MiFID II in the US: 1) first, the US ER industry is positioned for growth due to the constant investors’ need of many perspectives and recommendations, 2) in terms of changes in the business model, interviewees do not expect the core research value proposition to change, and thus the core need for research will prevail; and 3) they considered modifications to the revenue model and expect possible effects of MiFID II in the industry’s competitive dynamics, more specifically in the firm’s differentiation and consolidation.
The results from the quantitative study show a positive correlation between coverage (hypothesis 1) and analyst count (hypothesis 2) and the pre_post indicator. This was in line with the qualitative analysis, yet in disagreement with what was found in European studies. Despite the positive correlation, the visuals show stagnant growth over the four years, possibly a sign that the industry is becoming mature.

Regarding big firms, the results remark positive associations between the big firms’ coverage (hypothesis 3) and analyst count (hypothesis 4) and the pre_post indicator, also aligned with phase 1 but contradicting with the results of studies in Europe, specifically with analyst count (Guo and Mota 2019).

Finally, regarding hypotheses 5 and 6 centered on small firms, positive associations between small firms’ coverage (hypothesis 5) and analyst count (hypothesis 6) and MiFID II introduction were found, failing to reject the null hypotheses. In this case, these findings do not agree with these results on phase 1 and the results on European firms.

These results need to be analyzed and interpreted carefully. These are all based on FE regressions that do not include time-variant unobservable differences between firms (such as the effects of technology and the increase of the number of investors, which could impact coverage and analyst Count).

This study shows increasing trends in industry coverage and analyst count. Previous studies showcased that the ER industry could be impacted by “tectonic shifts” (McKinsey 2017). However, according to the findings of this project, there are no signs of negative impact in the US ER industry (in terms of growth) associated with this regulation. On the contrary, positive
relationships were found between the MIFID II entrance in Europe and analyst count and coverage in the US.

These results vary significantly from what was assessed in Europe. The studies about the European stock market remark that no tangible effect of MiFID II would be seen on the US ER industry and that these positive associations are the product of unobservable variables not accounted for in this research (such as the increased number of investors or increased digitization). However, I could argue that these results showcase the unintended effects of MiFID II in the US. By unexpected effects, I am referring to unforeseen consequences (Merton 1936) that MiFID II is theorized to have caused not only in Europe but also in the US in this case. According to Merton, there are five possible sources of this phenomenon: ignorance (both real willful), error, the “self-defeating prediction” (when making a prediction proves false because the prediction changes actions toward it), and basic values. In the case of MiFID II, the regulators were aware that this model would bring consequences in other markets, but the push for transparency and accountability could outweigh these costs in their perspective.

After MiFID II’s appearance in January 2018, some experts have remarked on certain unexpected consequences of this regulation both in Europe and the rest of the world. In the European ER industry, MiFID II brought expected benefits such as more transparency and accountability but also brought “almost a 40% cut in the research portion of the commission wallet” (Tabb 2019). In this case, there was both an unexpected significant reduction in the demand for research (which means that the buy-side is reacting negatively to the implementation of the policy), which in turn led to a decrease in the supply of ER jobs (European firms’ coverage decreased 5.3%, and analysts decreasing by 11.6%, Sertti 2020). This decrease is
evidenced in the studies mentioned above on the European ER space. So, in this market, it can be said that the aforementioned tectonic shifts could have occurred.

On the US side, firms had the chance to see what was happening in the European market, plus having the flexibility of investors not being required to unbundle costs. According to Schorr, Chung, Dunn, and Young (2019), unbundling in the US would have brought “significant downsides.” In their study, the investment performance of managers who paid for research in “hard dollars” (from their budgets, unbundled) was significantly underperforming than those who paid the traditional bundled way.

With a majority of negative opinions from US ER firms about the adoption of a similar MiFID II, The SEC did not follow the measures implemented in Europe. In November 2019, they announced an extension until July 2023 to facilitate cross-border implementations of MiFID II to prevent a decrease in research coverage, given it will lead to a reduction in capital market liquidity. The US SEC suggests that “bundling is an important, cost-effective and efficient method of maximizing their investment process.” (3). Due to these considerations, the US ER firms remained with a more advantageous business model than their European counterparts. By unbundling the buy side’s costs for research, European ER firms lose their competitive advantage as their coverage and staff are reduced, and their products are more expensive. This contrast is especially true for smaller research companies, which lack diversification and thus cannot cross-subsidize.

Based on this, it seems possible that the ramifications of the cost unbundling situation in Europe were positively affecting the US ER industry, which had a more favorable regulatory environment. A decrease in the demand for research in Europe and the increased competitive
advantage in the US might have contributed to what is seen in the results as an increase in US ER coverage (research demand) and analyst count (labor supply).

With this increase in ER demand in the US, big firms possess a significant competitive advantage over small firms. Their consolidation and cross-subsidizing capabilities mitigate the effects of a possible cost unbundling. Even without a cost unbundling policy in the US, big firms leverage their multi-channel capabilities, scale, and scope to tap into investors’ wallets and address their need for information; finally, they exert pricing power.

Due to the liability of newness, especially in an industry where access to information and contacts is crucial, small firms cannot adjust to the big firms’ power. All of this could indicate a new potential for consolidation in the future. Despite their greater flexibility and ability to adapt, they cannot get synergies for a wider coverage exposure. Not being diversified, they lose opportunities to expand. This increase in recommendations created by small ER firms post-MiFID II can be attributed to their adaptation to the new market reality, led by the bigger platforms. This increase can also be due to the small firms’ greater flexibility and their specialization strategies highlighted by experts in phase 1.

So, what are the implications of these findings for the regulation on this industry in the US? In this case, would a policy about cost unbundling in the US affect how research is done? Based on how the American industry reacted to the European regulation, the research companies are in a competitive mindset to keep offering clients and tapping into their wallets to provide valuable insights and data. The bundling model has been beneficial in this market. The SEC is aware of this advantageous global position and a similar regulation to MiFID II is not on the horizon. However, based on differences in firm size highlighted in this study, future
policymaking should consider the impact of this type of regulation in big and small firms. Finally, regulators should also focus on how buy-side firms are depending on ER industry insights to generate returns, and how a policy like MiFID II could affect their sustainability. This topic should be discussed in further research since I could not collect data from this sector.

However, is this ER industry growth sustainable? Regarding industry growth, it is likely that the pace of US ER growth is sustainable. Both interviews with industry leaders and the increase in employees and revenues in a mature industry (IBIS World 2021) indicate strong growth. This growth, in fact, is being captured by prominent players, as demonstrated by the big-small factor and insight from insiders. These companies are more capable of reaching clients through more channels and receiving benefits from global exposure. However, the SEC permission will last until 2023, and uncertainty over cost unbundling policies will bloom again. Therefore, the landscape will probably continue changing and innovating to adapt to customer trends.

Additionally, these results have a broader implication for other industries in the financial services as well. Not only can it address key questions on unintended effects of policy implementations through a strategic lens, but by looking for associations in some of the key variables of interest by industry experts. For example, if regulators start analyzing the effects of tax policies on other industries, they could also perform this two-tiered approach of interviewing experts and collecting data to look for further insights in a quantitative manner. Analyzing regulations using FE models could also be beneficial for controlling time-invariant unobservable differences, yet controls are needed for controlling time-variant differences.
Overall, MiFID II has affected the strategic decisions of ER providers in the US. In this case, strategic considerations that can be originated based on the results of this paper are: first, research firms should consider how large they become. Scale and a global presence represent a key competitive advantage for continuing coverage growth. Further analysis on revenue and product differentiation should be performed to conduct more strategic recommendations. Second, ER firms should also decide their region of operations: surrounding regulations (especially on cost unbundling) can have a crucial impact on how effective and profitable the business model is for the firm and its clients. Third, the firms should also be mindful of the competitive dynamics in their field; playing for either differentiation in their offerings, aiming for multi-channel strategies, or low-cost alternatives are just some of the ways to compete in this industry.

Looking back at the expected contributions of this project, this study concludes the following: first, this paper was able to analyze the effects of MiFID II in the US. As of the writing of this project, I am not aware of another study that analyzes this complex landscape in the US, especially with the relationship between ER firms’ strategic choices, coverage, and analyst count, and the effects of MiFID II. When discussing the US market, previous studies remarked that either there would be no effect or that it would bring “tectonic shifts.” In this case, I assess that the strategic considerations at play in this market are more complex. More importantly, this paper expands the discussion of a key variable in this field about MiFID II, namely research firm size, which can give valuable insights for strategic considerations in the future.
LIMITATIONS AND RECOMMENDATIONS

Despite adding value to the research on ER and the effects of MiFID II, this study has some limitations like all research.

For stage 1, a fundamental limitation is that the interviewee pool could be larger and broader. Having access to more information and more perspectives could have added more value to the project, yet given the constraints for this project, this was not possible. This limitation can be improved in future research.

For stage 2, the sample heavily relies on sell-side research, given the inability to access buy-side research. To mitigate this concern, I relied on the interviews gathered from buy-side representatives to extrapolate how shifts have happened in such firms.

In this project, I did not divide recommendations by their sector because this was not a variable of interest according to the interviewees. They did not expect this to change due to MiFID II. Interviewees expected all sectors to be impacted alike at least until 2019 (excluding the effects of COVID-19 in some sectors).

I could not control for time-variant variables affecting research coverage and analyst count. Some of these variables, such as the number of investors or increase in digitization, could have a significant positive correlation with an increase in coverage or the number of analysts. However, both data availability and the possibility of quantifying these variables limited my ability to control for them.

Based on these limitations, for future research in this field, I recommend the following: first, investigating other ER Industries beyond the US (such as Asia, Africa, or Latin America) to
assess if there was an impact on MiFID II would have also been a possibility. Not only this, but research can also take the variable of firm size to dissect it into more categories to have more color on specific details. For example, industry experts were interested in looking at mid-cap research companies. Thus, creating more categories for the size indicator variable could have been more insightful. Finally, although collecting information on these firms is challenging, covering the buy-side would be insightful to assess how the actual purchasers of research in the US were affected by MiFID II.
REFERENCES


Amzallag, A., C. Guagliano, and V. Lo Passo. 2021. MiFID II research unbundling: assessing the impact on SMEs. European Securities Market Authority. 3 (21). Available at: https://www.researchgate.net/publication/349465871_MiFID_II_research_unbundling_assessing_the_impact_on_SMEs


Baert, R. 2017. MiFID II may end up aiding active management firms; Transparency rule will force re-evaluation of research. *Pensions & Investments*, 45(16), 0005.


Hull, J. 2019. MiFID II: research, reductions and revolution. *Financial Times*. Available at: https://www.ft.com/content8/053d31f5-27ad-3a01-ae91-48b41e44cb42

IBISWorld. 2021. Stock & Commodity Exchanges in the US. Available at: https://myInter-ibisworld-com.proxy.library.upenn.edu/us/en/industry/52321/about


McKinsey and Company. 2017. Reinventing Equity Research As a Profit-Making Business. Available at:


Solonaru, S.S., I. Tornea, and T.J. Putnīņš. 2020. *You get what you pay for! Evidence on how research unbundling under MiFID II impacts the quality of stock Analyst forecasts*
Tabb, L. “MiFID II Research Unbundling Spreads Uncertainty to the U.S.” By Ivy Schmerken. FlexAdvantage Blog (July 2019).


APPENDIX 1

Phase 1 Interview Format (following Zwicky, Bjørk, and Halvadakis 2018)

Introduction

(Read to the interviewee) Thank you for participating in this interview. This interview will consist of questions regarding the Equity Research industry and the MiFID II regulation. You are free to give just your view, and your name can remain anonymous if you desire.

1. General information
   - Educational background
   - Previous employers
   - Current position
   - Current company
   - Number of years in current company
   - Relationship with the ER industry

2. Pre-MiFID II
   - In general, what was your perception of the industry?
   - What were your long-term prospects of the ER industry before MiFID II?
   - Do you think the sell-side or buy-side were prepared for MiFID II, especially for the separation of stock analysis?

3. Post-MiFID II
   - What are your long-term prospects of the ER industry after MiFID II?
   - Must the industry adapt to the measure? How?
   - How has your life and work changed due to MiFID II?
   - How did MiFID II change ER’s business model?
     - How did MiFID II affect your decisions on to what customers to target research to?
     - What are the major costs of producing research? How did MiFID II affect your decisions on where to allocate research costs?
     - Did research’s value proposition change?
     - Do you think research will shift from commission-based to another type of model?
   - Do you believe the US market will change as a result of MiFID II?
     - If so, how?
     - What consequences will they have for the US ER industry?
   - If at all, how has communication with the buy (or sell-side) changed?
   - How do you believe the organizational structure of ER firms or divisions might change?
4. Specific variables: How do you think MiFID II changed __________ in the ER US industry (if so, how?)

- The number of Analysts at your firm
- The number of companies covered
- The type of company covered
- The quality of research reports
- The communication with the buy (or sell-side)
- The Analyst profiles

**Note:** some of the questions will be altered to adjust for the different interviewees’ backgrounds.