Investor protection

MiFID II research unbundling – first evidence

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Summary

This article analyses the impact on EU sell-side research of the MiFID II Research Unbundling provisions that require portfolio managers to pay for the research they obtain. In the past, concerns have been raised, based primarily on survey data, that the new rules could have detrimental effects on the availability and quality of company research in the EU. In order to provide a more detailed, data-based contribution to inform this discussion, we examine a sample of 8,000 EU listed companies between 2006 and 2019, and do not find material evidence of harmful effects from these rules. The introduction of MiFID II has not led to a significant difference in the number of analysts producing Earnings per Share (EPS) estimates ('research intensity'). Recent increases in the number of companies no longer being covered by research analysts ('research coverage') appear to be a continuation of a long-term trend. The quality of research has been steadily improving in recent years. SMEs do not appear to be disproportionately affected in terms of research intensity, research coverage, and research quality. The descriptive findings in this article are consistent with the emerging data-based academic literature on the impact of the MiFID II research unbundling provisions and are complemented by a forthcoming ESMA econometric study. Further assessment of the impact of the MiFID II research unbundling provisions on subsets of the EU market for research, such as the impact on sponsored research, will be interesting avenues for further study.

Background

The research unbundling provisions

Since 3 January 2018, firms that provide portfolio management or investment advice on an independent basis must pay for the research that they obtain, either by paying themselves or by passing on that charge to their clients. As a result, entities that, until that date, provided both research and brokerage and other investment-related services to investment firms must now separately identify the cost of the research they provide. In other words, the cost of research is now 'unbundled' from the cost of other services provided to the investment firm (to allow that a firm either absorbs the costs itself or passes on those costs to its clients).

These 'research unbundling' provisions aim to reduce the potential conflict of interest of those investment firms offering both execution and research services. As per Article 27 of MiFID II, investment firms are obliged to execute orders on terms that are the most favourable to their clients ('best execution'). Order execution, in turn, requires interaction with investment banks, brokerage firms, and other similar intermediaries. These same firms often offer research to investment firms, and this provision has often tended to be packaged ('bundled') alongside the order execution services that are provided.

As a result, it can be challenging for investment firms to honour their best execution requirement when research is being offered at the same time and without being charged separately. Theoretically, this could lead to investment firms paying for more order execution services from investment banks, brokerages, and other similar entities than these firms would otherwise have been willing to pay if the cost of research was clearly separated from the cost of order execution services.

The 'research unbundling' provisions also aim to address a second and related topic in the market for financial and economic research: the risk of

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excessive amount of low-quality research. The provision of research can generate more business for an investment bank, brokerage, or other provider of order execution services than would otherwise be the case for simple brokerage services. As a result, these firms are economically incentivized to not only bundle research (i.e. allegedly free of charge) with order execution services, but also to produce more research than would otherwise be needed on particular firms or industries. There are several ways in which this can be manifested, including excessive amounts of research (e.g. multiple research pieces all providing similar recommendations), as well as research that is of lower quality (e.g. poor forecasts). Consequently, the MiFID II research unbundling provisions enable investment firms (and, ultimately, their investor clients) to have clarity on the 'cost' aspect of the 'cost vs. benefit' trade-off they face when assessing whether research is useful to them.

The 'research unbundling' requirements entered into force as part of the revised Markets in Financial Instruments Directive (MiFID II).[117] They were, as a result, widely known in advance.

The provisions apply primarily to investment firms that provide portfolio management services and that have registered with any National Competent Authority (NCA) in the EU, including third-country investment firms operating in the EU according to a passporting arrangement. In addition, the provisions affect the 'sell-side' providers of research services (e.g. investment banks, brokerage firms, and also independent research providers).

The application of these research provisions has generated a substantial amount of commentary and discussion. Market participants, frequently quoting survey data, claim that, since the introduction of these provisions, the total amount of research produced has fallen, that there are fewer analysts producing research on companies, and that the quality of research has worsened (CFA 2019, Hull 2019). Public authorities have also begun investigating the impact of these provisions, also using substantial survey evidence, although their findings are less clear-cut, with some authorities' survey results suggesting little effect (FCA 2019) or more

extensive impact (AMF 2020) on amount and quality of research.

Market participants have also identified the possibility that the MiFID II research unbundling provisions may have disproportionately affected small and medium-sized enterprises (SMEs) (Giordano 2019).

On 18 January 2020, the European Commission launched a MiFID II-related consultation, wherein it requested feedback on a number of proposals to foster research coverage on SMEs, including "to increase its production, facilitate its dissemination and improve its quality". Subsequently, the Commission has, on 24 July 2020, issued a consultation on a proposal to introduce a "narrowly defined exception" from the research unbundling provisions for small and mid-cap issuers (defined as companies whose market capitalization has not exceeded EUR 1 billion at any time during the previous twelve months) and for fixed income instruments. In light of this consultation, the research unbundling rules may further evolve in the future.

Trends in EU company listings

When assessing the possible effect of the MiFID II research unbundling provisions on companies being researched/covered by analysts, it is important to be aware of the dynamics in the underlying market, including the number of companies listed in the EU.

Figure RA.1 below presents the net new listings, i.e. Initial Public Offerings (IPOs) minus delistings from 2009 to 2019 in the EU, both in absolute terms and relative to the total number of companies listed on the EU exchanges in the same year.

Figure RA.1 below illustrates that, since 2009, net new listings in Europe appear to have steadily fallen, reaching its lowest level in December 2019. In other words, the number of listed companies in the EU has steadily fallen since 2009. There may be other factors at play as well, such as certain exchanges (e.g. London Stock Exchange) leaving the data sample (which explains the sharp fall from 2009 to 2010). A further investigation of the reasons for this trend (which may be driven by factors such as liquidity, fixed costs of listing, regulatory uncertainty, and others) is beyond the scope of this article.

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[117] See Article 24(7)-(9) of Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 ('MiFID II') and Article 13 of Commission Delegated

Directive (EU) 2017/593 of 7 April 2016 ('the MiFID II Delegated Directive').

Nevertheless, as a high-level view, the decreasing number of listed companies nevertheless indicates that the universe of companies which research analysts are covering is shrinking.

RA.1
Steady reduction in the number of EU listed companies
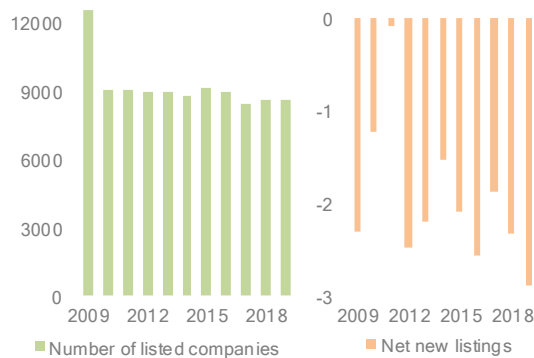
Note: Net new listings are measured as IPOs relative to delistings (in %). Net new listings are also relative to the total number of firms with shares listed on EU exchanges.
Sources: FESE, Refinitiv, I/B/E/S, ESMA Calculations.

Academic literature on the MiFID II research unbundling provisions

MiFID II is a recent piece of legislation, which means that academic studies on this topic are only just beginning. However, as discussed above, the specific 'research unbundling' provisions have sparked substantial debate among market participants and, furthermore, data on analyst research since January 2018 have begun to surface. Therefore, a growing body of academics is assessing the provisions' impact on various outcomes (e.g. analyst coverage, market liquidity, etc.) is emerging. The literature has mainly focused on the impact of MIFID II on the number of analysts following listed companies and on the quality of research.

Overall, research points to a decline in the number of analysts following the entry into force of unbundling provisions. Anselmi and Petrella (forthcoming), Fang et al. (2020), and Guo and Mota (2019) find that the MiFID II research unbundling provisions have, since their date of application, led to an overall reduction in terms of analysts covering a firm by 0.18, 0.44 and 0.65 analysts per firm respectively. According to Guo and Mota (2019), this fall is driven by the fact that large companies on average have more analysts covering them. As a result, investment companies have a greater incentive to reduce any low-quality research on these companies in order to reduce costs. In addition, Anselmi and

Petrella (forthcoming) find no significant difference in the impact of MiFID II on small versus large companies. Elsewhere, Lang et al. (2019) analyse specific companies' characteristics and find a significant reduction of analyst coverage of about 0.057 analysts for the largest, oldest, and less volatile (in terms of forecast dispersion) companies.

Regarding the quality of research post-MiFID II, recent studies have concluded that analyst forecasts tend to be on average more accurate after the implementation of MiFID II (Fang et al. (2020), Guo and Mota (2019), and Lang et al. (2019)). In particular, Guo and Mota (2019) find that analysts who remain employed after MiFID II tend to produce better quality research, while analysts that produce less accurate research are more likely to cease their research activities entirely. Fang et al. (2020) conclude that stock recommendations on EU companies post-MiFID II seem to be more profitable and stimulate greater market reactions.

Research on liquidity indicates a moderate negative impact. Lang et al. (2019) suggest that the MiFID II research unbundling provisions have led to a widening in the bid-ask spread for EU companies.

Comparison of survey-based and academic findings

The academic data-based studies and industry surveys mentioned in the previous two sub-sections tend to agree that the introduction of MiFID II research unbundling provisions has led to a general reduction in the number of analysts. Data-based research studies have noted, however, that this reduction appears to be oriented towards larger companies, in contrast to smaller companies, and more precisely towards companies that are older and more 'predictable' (Guo and Mota 2019; Lang et al. 2019).

On the other hand, perhaps the greatest contrast between the academic literature and feedback on the MiFID II research unbundling provisions obtained via industry surveys relates to divergences in research quality.

For example, according to CFA (2019), "*Buy-side professionals mostly believe that research quality is unchanged, but sell-side respondents are generally more pessimistic, with 44% believing that research quality has decreased overall... Less than 10% of both buy-side and sell-side respondents believe research quality has increased.*" At the same time, the apparent

divergence may also be explained by the specific indicator of 'quality'. On the one hand, the academic literature focuses on measures relating to the accuracy of analyst forecasts. On the other hand, surveys, such as the one conducted by AMF (2019) refer to a number of other measures of research quality, including the length of the analysis produced, the extent to which analysis is "substantial" and more or less "neutral" (more neutral implying lower quality according to AMF 2019), the number of companies researched per analyst (greater number implying lower quality according to AMF 2019), and finally a decline in the average length of analysts' experience.

Combining the two overall themes of reduced numbers of analysts per firm, with a concentration in research reductions for larger and more predictable companies, as well as a trend toward maintaining or even improving forecast accuracy, suggests that the reductions in research may be associated with a previous overproduction of research in certain segments of European markets, as further discussed in Anselmi and Petrella (forthcoming).

There are, however, many sub-segments to explore, including the definition of research quality, as well as the impact on sponsored research, on independent research providers, on buy-side vs. sell-side analysts (see also Fang et al. 2020). All of these discussions demonstrate the complexity of this topic and the need for multiple sources of information.

First EU-level evidence

This article contributes to the debate around the impact of MiFID II research unbundling provisions on sell-side analyst research by providing a "bigger picture" of trends in sell-side research on EU companies in the past years pre- and post-implementation of MiFID II. In doing so, this article provides a longer-term perspective that complements already-published and forthcoming academic studies, while also pointing to some areas where further research may be beneficial. An econometric analysis (Amzallag et al. (forthcoming)) will also provide quantitative support for the visualisations provided in this

article, and is referenced accordingly throughout the text, where relevant.

The remainder of the article provides high-level visualisations on:

— The quantity of research provided by sell-side analysts on specific companies, pre- versus post-MiFID II.

— The quality of that same research, pre-versus post-MiFID II.

The analysis also distinguishes between SMEs versus large companies, given the extensive interest on MiFID II's possible impact on smaller companies.

Data and methodology

Our dataset comprises 8,000[118] listed companies (active and inactive[119]) headquartered in the 27 European Union (EU) countries and the United Kingdom[120] and covers a period between January 2006 and December 2019. Overall, the data sample includes 60% of listed companies considered as 'active' by the end of December 2019, compared with the total as reported by the "Federation of European Securities Exchanges (FESE)". As mentioned above, the analysis focuses on the impact of MiFID II on sell-side research (i.e. research provided by sellers of investment services) rather than on buy-side research (i.e. research produced in-house by investment funds, and other investors). This orientation is largely driven by the lack of data on buy-side research, as this is generally not published. Firm-level data on research produced by sell-side analysts was collected from I/B/E/S (Refinitiv Datastream) on a monthly basis.

In line with previous studies, such as Anselmi and Petrella (forthcoming), the variable "Earning per Share (EPS) total number of estimates" is used to approximate the *quantity of research* produced by analysts on a specific firm. This variable is the most frequently used estimate for sell-side research on listed companies and, hence, a good measure for analyst's coverage.

Research quality is measured using the "EPS annual surprise percentage difference". This

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[118] The initial dataset included c. 24,000 firms, of which only 8,000 appear to have been researched by analysts at any point between 2006 and 2019.

[119] Active firms are defined as those listed on one or more exchanges as at end-2019. Inactive firms are firms that, as at end-2019, were delisted (owing to mergers,

bankruptcy, etc.), but were active at an earlier stage in the sample time window.

[120] As UK stopped being a member of the European Union on 31 January 2020, it has been included as part of the EU, given also the date of application of MiFID II starting from January 2018.

variable symbolizes the extent to which analysts' estimates for a firm's annual EPS were different from reality (the "surprise"). In other words, it represents the median surprise across all analysts in the sample. Thus, a zero "EPS annual surprise percentage difference" for a firm in a given year implies that there has been no surprise and therefore analysts' median forecasts for that firm in that year were identical to the result. This variable thus appears to be a reasonable way of measuring the accuracy of an analyst's forecasts and is of a similar nature as the *quantity of research* measure: both variables use the earning per share estimate as a basis for their calculation.

In addition, firm-level (yearly) data on total assets, number of employees, Earnings Before Interest, Taxes, Depreciation, Amortisation (EBITDA), market value (i.e. market capitalisation), Return on Assets (ROA), and other aspects (e.g. economic sector, country of headquarters, delisting date) are included to help describe and analyst the companies in our sample.

The company characteristics also allow entities to be classified as either SME or large, using the criteria set out by the European Commission (2003). Accordingly, a firm is classified as SME if either of the following two conditions is met at any time between 2006 and 2019:

— Number of employees < 250 and total assets ≤ EUR 43m.

— Number of employees < 250 and turnover ≤ EUR 50m.

Turnover is measured using EBITDA. This classification results in c. 3,320 SMEs, 3,920 large companies and 760 companies "not classifiable" owing to information on the above variables not being available.

Table RA.2 below lists the breakdown of companies per EU country and size classification.

RA.2
Breakdown of companies per country and size

Country	SMEs	Large	NC	Total
Belgium	59	80	18	157
Denmark	41	87	9	137
Finland	58	128	17	203
France	357	425	65	847
Germany	427	464	60	951
Greece	40	101	10	151
Italy	136	286	44	466
Netherlands	43	149	16	208
Poland	153	206	39	398
Spain	71	382	16	469
Sweden	460	294	110	864
United Kingdom	1,370	971	287	2,628
Others*	104	351	68	523
Total	3,319	3,924	759	8,002

Note: NC=Not classifiable. Countries with fewer than 100 companies in total have been grouped into 'Others', and include Austria (90 companies), Bulgaria (41), Croatia (22), Cyprus (28), Czech Republic (11), Estonia (24), Hungary (28), Ireland (83), Latvia (8), Lithuania (22), Luxembourg (38), Malta (8), Portugal (51), Romania (51), Slovak Republic (1), and Slovenia (17)
Sources: Refinitiv I/B/E/S, ESMA calculations.

Table RA.3 below presents summary statistics for the data sample, based on a breakdown across firm size (SME, large). As is clear from the table below and as expected given the classification criteria followed, SMEs have fewer staff, assets, and earnings than large companies, as well as smaller market value and return on assets (ROA).

RA.3
Data sample - summary statistics

	SMEs	Large
	Median	Median
Staff	54	1,898
Total Assets	24	453
EBITDA	0.7	52
MV	32	344
ROA	1.01	6.04

Note: The statistics have been generated using data from the first year a given firm is classified as either an SME or a large firm. Companies for which there is insufficient data to determine whether they are SME or large (i.e. 'Not classifiable') are excluded from the table. EBITDA is Earnings Before Interest, Depreciation, and Amortisation. Market value is denoted as MV. Return on Assets is denoted as ROA. Where a firm reported zero employees, this was considered as an empty value. Total assets, EBITDA, and Market Value are in millions of EUR and ROA in percentage. The number of companies for which robust data are available for individual indicators varies between 3,319 and 2,037 for SMEs and between 3,924 and 2,516 for large companies.
Sources: Refinitiv, ESMA calculations.

Table RA.4 below presents the breakdown of companies per economic sector (raw materials,

manufacturing, services, others[121]) and size classification. The majority of companies operate in the 'Services' and 'Manufacturing' sectors with 3,817 and 2,998 companies respectively. Interestingly, SMEs make up a larger proportion of companies in the Raw Materials sectors (64%), but are relatively under-represented in manufacturing and services (36% and 47%, resp.)

Number of companies per economic sector

Sector	SMEs	Large	NC	Total
Manufacturing	1,065	1,736	197	2,998
Raw Materials	305	125	49	479
Services	1,784	1,586	447	3,817
Other	165	477	66	708
Total	3,319	3,924	759	8,002

Note: Number of companies, absolute values. NC=Not classifiable.
Sources: Refinitiv, ESMA calculations.

Depending on the specific analysis, this study relies on different sample specifications, as further detailed in the next section.

Empirical findings

Impact on research quantity

The following sub-section presents results on two ways in which the MiFID II research unbundling provisions could impact the quantity of research produced on EU companies: the *intensity of research* on EU companies and the *research coverage of EU companies*.

The intensity of research is defined as the number of analysts covering a specific firm over the analysed period. The research coverage is a dummy variable equal to one if at least one EPS has been produced for the specific firm over the analysed period and equal to 0 otherwise. Each measure is based upon the "EPS total number of estimates" variable described above in the 'Data and methodology' section.

Figure RA.5 presents findings on trends in the intensity of research, starting in 2006. The figure illustrates the yearly range in the number of analysts covering companies in our data sample.

To provide a picture of the current market structure, we only analyse around 4,870 companies listed on the stock market in late 2019 and having been active at all times between 2006 and 2019.These represent companies that have always been active and had EPS estimates produced by research analysts at all times between 2006 and 2019.

Impact of MiFID II on intensity of research for all companies
Stable number of analysts covering each firm before and after MiFID

Range of companies' EPS estimates per year
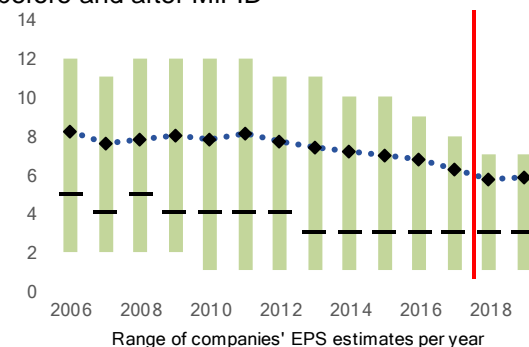
Note: Sample of 4,870 EU firms that have been in operation at all times bet. 2006 and end-2019, and at all times researched (i.e. have EPS estimates produced) by analysts. Black diamonds (horizontal bars) in each box = average (median) across firms in the year. 25th and 75th percentiles = bottom and top edges in each box. MiFID II date of application = vertical red line.
Sources: Refinitiv, I/B/E/S, ESMA calculations

First, it does not appear that the introduction of MiFID II (see the vertical red line) in January 2018 has led to a significant difference in the number of analysts producing EPS estimates per firm. This is illustrated by the median (black horizontal bar) in each box just before and after the vertical red line staying identical (3 analysts per firm) [122].

Second, the number of analysts producing EPS estimates for the firm at the 75th percentile (the top of the green vertical bars) has declined slightly but, interestingly, this appears to be the continuation of a long-term trend that began as far back as 2012. A similar picture (not shown) can be seen when looking at the 90th percentile of the data sample: among companies with very high number of analyst estimates being produced, there has been a large and steady fall

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[121] For simplicity, sectors were grouped into four main categories: 'Raw Materials' (mining, quarrying, and oil gas extraction and agriculture, forestry, fishing and hunting), 'Manufacturing' (manufacturing and construction), 'Services' (information, finance and insurance, administrative and support and waste management and remediation services, real estate and rental leasing, professional scientific and technical services, accommodation and food services, management of

companies and enterprises, arts entertainment and recreation, health care and social assistance, other services, public administration and educational services) and 'Others' (transportation and warehousing, wholesale trade and, retail trade).

[122] Similar results are found when examining the number of analysts covering a firm, in contrast to the number of analysts producing EPS estimates for a firm.

in the number of these estimates per firm after 2011.

Third, as Figure RA.6 llustrates, data on SMEs suggests that this sub-market has remained largely stable. Indeed, all indicators – the 90th percentile (not shown), 75th percentile, median (50th percentile), and 25th percentile number of analysts covering SME companies – have remained constant since 2010 (standing at 6, 3, 2, and 1 analysts, respectively). This appears to indicate that the long-term slight reduction in research intensity for companies is affecting mainly large companies.

RA.6

Impact of MiFID II on intensity of research for SMEs

SMEs: Stable number of analysts

Range of companies' EPS estimates per year
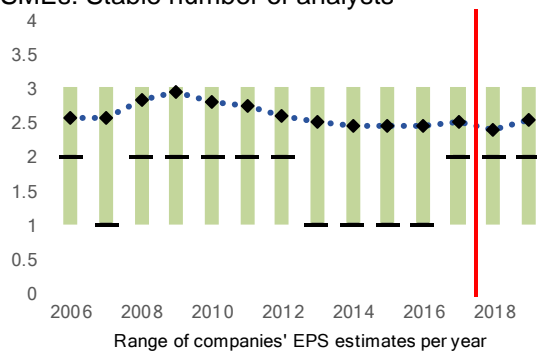
Note: Sample of 2,100 EU firms that have been in operation at all times bet. 2006 and end-2019, and at all times researched (i.e. have EPS estimates produced). Black diamonds (horizontal bars) in each box = average (median) across firms in the year. 25th and 75th percentiles = bottom and top edges in each box. MiFID II date of application = vertical red line. SMEs defined as per European Commission (2003).
Sources: Refinitiv, I/B/E/S, ESMA calculations.

Taken together, these findings suggest that the research industry has undergone a steady process of consolidation in terms of the amount of research coverage being provided on companies in the EU, and that this trend is concentrated on large companies rather than SMEs.

This is in line with pre-MiFID II market participant observations that there were excess amounts of research being provided on certain (presumably larger) companies (Marriage 2019). For example, one research study estimated that "well over 40,000 research notes – from comprehensive reports to minor updates linked to corporate announcements – are sent out every week by the top 15 global investment banks, of which less than 5% are opened" (Kwan and Quinlan 2017).

These visualisations are confirmed econometrically by Anselmi and Petrella (forthcoming), Fang et al. (2020), Guo and Mota (2019), and Lang et al. (2019). Amzallag et al. (forthcoming), also demonstrate that the quantity of available research has declined after MiFID II implementation but that the drop has been more

important for large companies than for SMEs. This suggests the possibility of an excessive amount of available research for large companies before MiFID II, as also further discussed in Anselmi and Petrella (forthcoming).

The next step is to examine the possible impact of the MiFID II research unbundling provisions on the second measure of research quantity: research coverage, i.e., whether or not companies have EPS estimates produced by analysts in the analysed period.

Figure RA.7 llustrates the number of European companies with EPS estimates in each year relative to the total number of companies with listed shares in the EU stock market. Our analysis suggests that the share of listed companies covered by analysts has remained broadly stable (at around 40%) since 2010, although there are indications of a small increase starting in 2017. However, as the chart also shows, in 2010 there was a sudden jump in the percentage of listed companies covered by research analysts. This sudden increase is likely to be driven less by the number of analysts covering companies (which remained largely stable, as shown in figures RA.5 and RA.6), but rather by a 25% fall in the number of listed companies from 2009 to 2010. This decrease in the number of companies with listed shares is likely to be one of the consequences of the global financial crisis of 2007-2008.

RA.7

Impact of MiFID II on research coverage

<1/2 of companies covered by research analysts

■ Number of firms with available EPS estimates relative to total listed firms
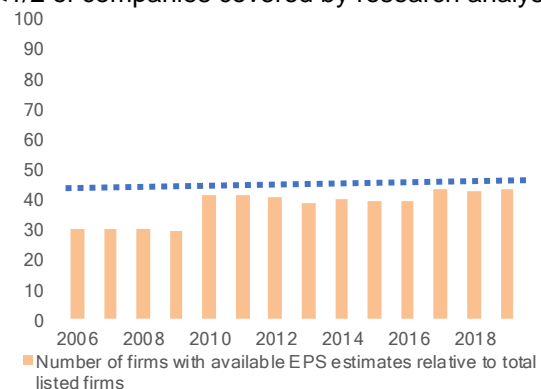
Note: Percentage (%) of firms with available EPS estimates at the end-of-year relative to the total number of firms with listed shares in the EU. The trend line indicates the long-term change in this percentage.
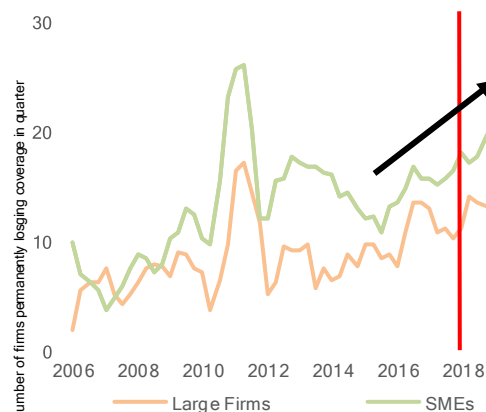Sources: FESE, Refinitiv I/B/E/S, ESMA calculations,

Figure RA.8 presents the number of companies that had no longer EPS estimates produced by analysts, over the period 2006 to end-2019 — i.e. an indicator of 'loss of coverage'. Information is presented on a quarterly basis for a total of about 6,800 companies, separated into SMEs (c. 3,200 companies), large companies (c. 2,800 companies), and companies that could not be

classified (c. 760). Companies that drop out of the data sample owing to bankruptcies, mergers, or delisting are excluded from the sample. Only companies that continue to be listed and are no longer covered on a permanent basis are included in the figure.[123]

We find that the number of companies losing coverage increases – however this increase began much earlier than the introduction of MiFID II. In particular, since 2012 there has mostly been a steady rise in the number of companies that are no longer receiving EPS estimates from any analyst, which suggests a steady rise in the number of companies losing research coverage. It is likely that this trend is driven by reductions in the number of research analysts. Indeed, recent estimates point to steady reductions since 2012, related in part to rationalisation following a greater use of technology and 'big data', the steady rise in passive alternatives to active asset management, as well as a fall in equity commissions (Noonan 2016, Wigglesworth 2017a, Wigglesworth 2017b, Mayhew 2019).

RA.8
Impact of MiFID II on research coverage
Long-term increase in companies losing coverage

Note: Sample of 6,140 EU firms that have at any time from 2006 to end 2019 permanently ceased to be researched (i.e. have EPS estimates produced) by all analysts. SMEs classified as per European Commission (2003). Sources: Refinitiv, I/B/E/S, ESMA calculations.

More recently, roughly 270 EU companies were no longer covered by sell-side research analysts during 2019, in comparison to 140 companies losing coverage in 2017. In both years, the proportion of SMEs losing coverage as a share of total companies losing research coverage was roughly constant (55% of companies losing coverage in a year were SMEs).

The number of large companies (orange line) losing coverage actually declined for roughly 1.5 years after the introduction of MiFID II, before sharply increasing at the end of 2019[124]. The sharp increase in loss of coverage (both for large companies and SMEs) has only appeared in recent months and it is difficult to conclude that this is a trend that is driven by MiFID II, also since the research unbundling provisions were widely known in advance, as described in the introduction. Similarly, although there has been a sharp increase in the number of SMEs (green line) losing coverage since January 2019, other sharp jumps have been observed in the past, including from mid-2015 to mid-2016.

In addition, it is important to recall that there are also companies that gain coverage at any point in time, and that have not been covered in earlier years. This fact must also be considered when examining the overall impact of the MiFID research unbundling provisions on the quantity of research produced on EU companies. Figure RA.9 subtracts the number of companies losing research coverage from the number of companies gaining coverage in each quarter (starting from 2009)—roughly 6,120 SME or large firm companies are tracked (not classifiable companies are omitted for the sake of brevity).

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[123] For firms that lose coverage during 2019, it is challenging to assess whether that loss is temporary or permanent. This is because past data since 2006 indicates that some firms that are no longer covered by analysts in a given time period will subsequently resume to be covered by the same or other analysts in future years. The numbers presented in figure RA.8 include a correction for the average number of firms losing coverage on a temporary basis in each year between 2011 and 2018. The total number of firms deemed to lose coverage in 2019 is reduced by this correction, which has been calculated

separately for SMEs, non-SMEs, and not classifiable firms.

[124] It is likely that the large jump in firms losing research coverage during 2010 and 2011 is at least in part driven by brokerages and other research providers reducing their number of research analysts, as part of widespread layoffs in the EU financial services sector during 2009, 2010, and 2011 (see for example Eurostat employment data: series code nama_10_a64_e and industry sector "*Financial service activities, except insurance and pension funding*").

RA.9
Impact of MiFID II on research coverage
Net loss of research coverage starting in 2019
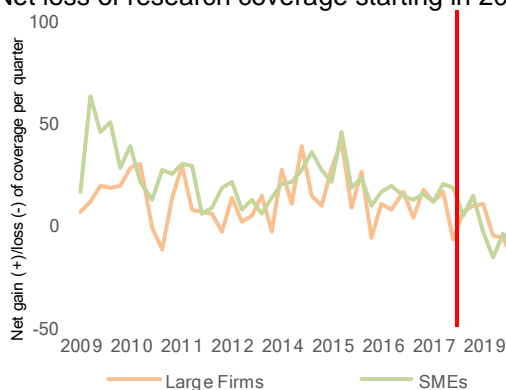
Note: Sample of 6,140 EU firms that have at any time from 2006 to end 2019 either begun or permanently ceased to be researched (i.e. have EPS estimates produced) by at least one analyst. Firms that cannot be classified as either SMEs or Large are excluded.
Sources: Refinitiv, I/B/E/S, ESMA calculations.

Figure RA.9 suggests that both large and SME companies steadily *gained* analyst coverage until around the end of 2018[125]. However, in early 2019, and for the first time since 2006, both SMEs and large companies across the EU began, in net terms, to lose research coverage. Further investigations and more experience with the MiFID II era are needed to identify the drivers of these trends, and to assess the role of the MiFID II research unbundling provisions. For example, it may be that research providers adopted a 'wait and see' stance during 2018 (i.e. the first year of application of the research unbundling provisions) and maintained coverage until contracts with their clients were renegotiated and possible revenue impacts could be better ascertained. On the other hand, there is recent evidence that the COVID-19 pandemic and resulting economic uncertainty has led to a surge in research analyst coverage (Clarke 2020).

These results are further explored and corroborated econometrically in Amzallag et al. (forthcoming): the probability of losing coverage has increased after MiFID II implementation (in line with the academic literature cited earlier in this article, e.g. Fang et al. (2020)) but this appears to have affected larger companies more than SMEs.

Impact on research quality

The following sub-section analyses the potential impact of the MiFID II research unbundling on the *quality* of research produced on EU companies. As described in the 'Data and Methodology' section, the variable used to measure research *quality* is the "EPS annual surprise percentage difference" across companies.

Figure RA.10 shows the trends in the EPS annual surprise from 2006. The sample on which the chart is based includes approximately 5,200 EU companies tracked from 2006 to 2019.

RA.10
Impact of MiFID II on research quality
Research quality stable post vs. pre-MiFID II
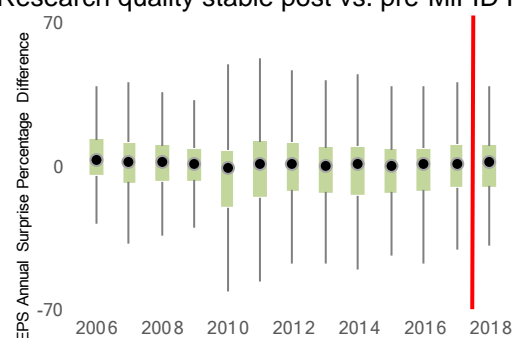
Note: Sample of 5,200 EU firms that have at any time been in operation at all times bet. 2006 and end-2019, and at all times researched (i.e. have EPs estimates produced) by analysts. Black horizontal bars in each box = median across firms in the year. 25th and 75th percentiles = bottom and top edges in each box. Additional lines ('whiskers') = 10th and 90th percentiles. MiFID II date of application = vertical red line.
Sources: Refinitiv, I/B/E/S, ESMA calculations.

The analysis suggests that the quality of EPS forecasts after the implementation of MiFID II has remained broadly stable (see the vertical red line). This is illustrated by the median (black dot), in the two bars after the vertical line, approaching zero (i.e. no surprise in terms of EPS forecasts and therefore good quality).

Interestingly, the 90th and 10th percentiles of the data sample (top of the vertical lines) seem to narrow since 2014. This trend suggests that research quality has been improving in the last years, rather than merely following the application of the MiFID II research unbundling provisions. One reason for this improvement could be that, despite the increase in the number of companies losing coverage, the analysts' continuing to follow the companies are the ones producing more accurate EPS Estimates—which

[125] Additionally, further calculations suggest that, although the cumulative number of firms gaining coverage is overall higher than the one of firms losing coverage entirely, the growth rate of the two go in the opposite

directions. In other words, it seems that in the data sample, firms are losing coverage faster than firms are gaining coverage.

appears to be in line with the recent academic studies discussed above.

However, the low market volatility environment which was prevalent for most of the time since the volatility peaks in 2012 (Goedhart and Mehta 2016; ECB 2020) has also created favourable conditions for an improvement in forecast accuracy, in addition to improvements by individual research providers. In other words, when market conditions are 'favourable', it is likely that there will be less dispersion across analyst forecasts.

Finally, research quality appears to improve slightly for large companies. Although the median forecast error approaches zero for both SMEs and large companies, dispersion for SMEs (90th and 10th percentiles) tends to expand after the application of MiFID II. However, there may be other confounding factors behind this as well, such as greater data availability for large companies combined with a trend toward using 'big data' techniques to conduct research.

Overall, these findings suggest that:

— Research *quality* in the EU as measured by EPS forecast accuracy has generally improved since 2012, reflecting long-term trends, but there is little discernible effect of MiFID II (at least at the descriptive level of analysis).
— Large companies might have experienced a greater improvement in research quality than SMEs, when comparing the variation in forecast accuracy in each group.

These visualisations are in line with the academic papers cited above as well, such as Fang et al. (2020) and Lang et al. (2019). The differential impact between large companies and SMEs are further explored econometrically in Amzallag et al (forthcoming).

Trends in market liquidity

Since the application of the MiFID II research unbundling provisions, several concerns have been raised regarding potential unintended side effects of a reduction in equity market liquidity. In particular, it is alleged that the increase in the number of companies losing research coverage may be related to a widening of bid-ask spreads of EU companies' moveable assets.

Figure RA.11 presents the quarterly evolution in median bid-ask spread for the companies in the sample. The figure shows that, for both SMEs

and large companies in the EU, bid-ask spreads have not substantially changed since 2018, compared with the pre-MiFID II period. This period of relative stability follows a general trend of tightening from 2009 to 2015, again both for large companies and SMEs.

Nevertheless, there are many elements that may influence bid-ask spread (including tick sizes and broader market trends in volatility and trading volumes), and the aim in this section is to provide a first visual interpretation. This topic is further explored econometrically and in greater detail in Amzallag et al. (forthcoming), which explores the possible differential impact of the unbundling provisions on SME liquidity conditions (relative to large companies), using various measures of market liquidity (bid-ask spreads, Amihud ratio and Turnover ratio).

RA.11
Impact of MiFID II on firm liquidity
Liquidity conditions stable post vs. pre-MiFID II
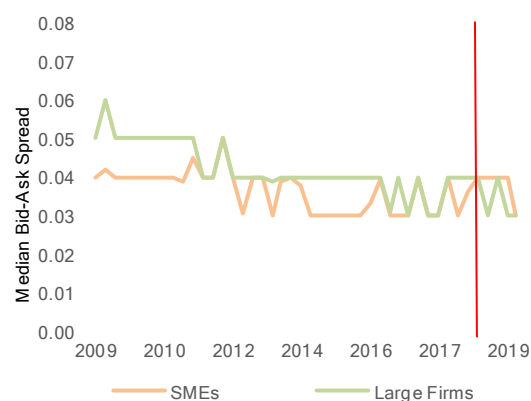
Note: Median bid-ask spread for a sample of 3,320 SMEs and 3,920 large firms that have been covered by research analysts at any point between 2006 and end-2019. MiFID II date of application = vertical red line.
Sources: Refinitiv, ESMA calculations.

Conclusions and next steps

Our analysis, based on a large dataset composed of around 8,000 companies over a long time series (2006-2019), suggests that since the MiFID II research unbundling provisions began to apply in January 2018, there has not been a significant change in the number of analysts producing research on EU listed companies. The reduction in research intensity for companies

appears to mainly affect large companies, rather than SMEs.

Elsewhere, there has also been an increase in the number of EU companies for which no research is produced at all. This increase appears to affect both SMEs and large companies in a similar way — SMEs do not appear to be particularly vulnerable to losing coverage.

At the same time, the fall in research intensity and rise in loss of coverage, continue a trend that began as far back as 2012. Over the analysed period, the research industry has undergone a steady process of consolidation and rationalisation of the amount of research coverage being provided on companies in the EU, and this trend is concentrated on companies that are larger than SMEs.

However, the rate of increase in loss of coverage has increased recently. Indeed, for the first time since 2006, both SMEs and large companies across the EU have, in net terms (i.e. subtracting the number of companies gaining coverage from number of companies losing coverage), begun to lose research coverage. This has begun to be apparent during 2019, i.e. with some delay compared with the MiFID II date of application.

In addition, our analysis shows that the quality of research on EU companies has not worsened since January 2018 and in fact has been improving slightly for large companies. This would be coherent with the above-mentioned possibility of the research industry rationalising its coverage of large companies (i.e. fewer analysts per firm but of greater quality). At the same time, it may also reflect the continuation of a trend also observed since as far back as in 2012, with steady reductions in market volatility (and thus uncertainty) in the background.

The empirical evidence gathered so far and described in this article is consistent with the emerging data-based academic literature on the impact of the MiFID II research unbundling provisions. It is also consistent with the econometric analysis conducted by the authors of this article in Amzallag et al. (forthcoming) and with the recently developed academic studies as Anselmi and Petrella (forthcoming) and Fang et al (2019), while it differs from the studies based on surveys as AMF (2020) and FCA (2019) showing a more negative impact of the unbundling measure.

The main difference between academic data-based and survey-based evidence relates to the impact of the unbundling provisions on research quality. As explained in the article, there are various definitions of research quality. This leads to a potential for disagreement, as results may vary depending on the metric chosen to measure the impact of the MiFID II research unbundling provisions (for example, whether research quality is measured in terms of forecast accuracy, in terms of research report length, or in terms of 'neutrality' of the research piece).

The MiFID II research unbundling provisions may also have had differential impacts on subsets of the EU market for research, such as on buy-side analysts in contrast to sell-side analysts, as well as on different types of research like unsolicited research versus sponsored research, as well as independent research providers. These areas, in particular the possible impact on sponsored research and on independent research providers, were not considered in this article owing to limitations in data availability. However, they are noted here as interesting avenues for further research.

References

AMF (2020), "Reviving Research in the Wake of MiFID II: Observations, issues, and recommendations", January.

Amzallag, A., C. Guagliano and V. Lo Passo (forthcoming) "MiFID II Research unbundling – impact on EU equity markets", ESMA Working Paper.

Anselmi, G. and G. Petrella (forthcoming), "Regulation and stock market quality: The impact of MiFID II on liquidity and efficiency on European stocks", Working Paper, 18 June 2020, mimeo.

Basar, S. (2019), "MiFID II Increases Research Unbundling In US", 23 April, Markets Media.

CFA Institute (2019), "MIFID II: ONE YEAR ON Assessing the Market for Investment Research".

Clarke, P. (2020), "Nervous clients flock to banks for virus research in boost to battered analysts", 22 April, Financial News.

ECB (2020), "Composite Index of Systemic Stress", accessed on 30 March 2020, see here.

European Commission (2003), "Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises", 2003/361/EC.

European Commission (2020), "Public consultation on the review of the MiFID II/MiFIR regulatory framework", 18 January.

Fang, B., Hope, O-K., Huang, Z., and R. Moldovan (2020), "The Effects of MiFID II on Sell-

Side Analysts, Buy-Side Analysts, and Firms", Working Paper, May.

FCA (2019), "Implementing MiFID II – multi-firm review of research unbundling reforms", 19 September.

Giordano, S. (2019), "MIFID 2 and research: a script to be reworked", Société Générale Securities Services, 7 November.

Guo, Y. and L. Mota (2019), "Should Information be Sold Separately? Evidence from MiFID II", Working Paper, December.

Goedhart, M. and D. Mehta (2016), "The long and the short of stock-market volatility", McKinsey & Company, May.

Hull, J. (2019), "Mifid II: research, reductions and revolution", FT Alphaville, 4 July.

Kwan, Y. and B. Quinlan (2017), "Research.com – The Rise of Online Research Marketplaces", Quinlan & Associates, 14 March.

Lang, M., Pinto, J., and E. Sul (2019), "MiFID II unbundling and sell side analyst research", Working Paper, June.

Marriage, M. (2016), "Banks face $5bn hit to research teams as asset managers cut spending", Financial Times, 18 September.

Mayhew, M. (2019), "2019 Bulge Research Analyst Headcount Shrinks 8%", Integrity Research Associates, 30 December.

Noonan, L. (2016), "UBS hires psychologists to help revamp research reports", Financial Times, 30 August.

Wigglesworth (2017a), "Final call for the research analyst?", Financial Times, 7 February.

Wigglesworth, R. (2017b), "Investors mine Big Data for cutting-edge strategies", Financial Times, 21 August.