



Analysis of the behaviour of retail investors in the financial markets during the COVID-19 crisis

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No. 78



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Summary

This working paper analyses retail investors' trading trends in the equity market in 2019 and 2020 and seeks to identify changes they may have undergone as a result of the COVID-19 crisis and whether or not these changes will persist over time. To do so, a sufficiently representative sample of retail investors' trading in Ibex 35 and Ibex Growth Market 15 shares during the two years was taken. The start of the pandemic caused turmoil in global financial markets, which manifested itself in episodes of high volatility and sharp falls in stock markets' quoted prices.

The main results of the study show a strong increase in trading in Ibex 35 shares by retail investors from the onset of the crisis, at first with more intensity on the buy side (the volume of purchases quadrupled in March 2020) and later on the sell side. The increase in trading was due to the substantial increase in the number of transactions carried out by these investors, which intensified as a result of the mass advent of new investors to the market at times of greatest turbulence. Since then, the participation of retail investors has reduced progressively but has not returned to pre-crisis levels.

The increase in retail trading during the crisis is a trend also identified in other European countries such as France and Belgium. In Spain, in the first stage of the crisis, incredibly significant increases were observed in the trading volume (purchases and sales) of Ibex 35 shares by retail investors. Before the crisis, in 2019, monthly purchases were approximately €1,000 million and sales, which fluctuated a bit more, did not exceed €1,600 million. These data increased notably in 2020, especially the months of March, June and November which registered the highest monthly volumes. The maximum purchase volume point was hit in March, which was close to €4,000 million (€2,500 million of sales), coinciding with the month in which the Ibex 35 fell 22.2% with respect to February. The highest monthly volume of sales was recorded in November (€2.825 billion), at which time Ibex 35 rebounded by 25% compared with the previous month.

In the same way, the number of transactions carried out in the first weeks of the crisis saw a very sharp increase: in March 2020, the number of purchase transactions executed increased more than fourfold and the number of sales transactions more than doubled compared with the same month in 2019. This development led to a strong rebound in total trading volume by retail investors as the median value per trade fell during the COVID-19 crisis. After the first few months of the health crisis, the boom in stock market transactions slackened, and we saw a gradual return to initial trading values, which had not however been reached by the end of 2020.

The predominant sectors in which retail investors traded changed slightly as the crisis progressed: most of the trading continued to take place in the sectors that

were already most significant before the crisis, although some of them, such as the financial and communications sectors, lost ground relatively in favour of other sectors such as industrials and health care.

The presence of retail investors with respect to total trading increased during the first wave of the virus, going from 4.0% in purchase transactions and 4.5% in sales transactions before the crisis to 9.4% and 6.4% respectively in the initial stages of the crisis. Subsequently, these proportions returned to the values registered before COVID-19, although at the end of 2020 they had not yet been reached. Remarkably, the greatest increases in retail investors' involvement were in the sectors most affected by the crisis, such as tourism, communications and finance. However, share ownership data by type of investor for 2020 do not reveal significant changes in the percentages attributed to households, the position of retail investors being similar to that of previous years (17.1% in 2020, 1 point above the figure for 2019, although far from those of previous years, whose average was 23% from 2010 to 2018).

In general, a majority proportion of the volume traded in Ibex 35 shares between 2019 and 2020 was carried out by men (around 80%), with this proportion increasing slightly in the first months of the crisis. The median age of retail investors as a whole reflects the fact that the women trading these stocks are older than the men. Although both average ages decreased at the beginning of the pandemic, they later increased again, despite which they ended 2020 at lower levels than their initial ones.

Another aspect to highlight about the first moments of the crisis is the massive incorporation of retail investors to the market: the days in which the Ibex 35 registered its most intense falls in March were the same ones in which a greater number of new investors entered the market. The demographic characteristics of these new investors differ slightly from those of the overall pool of investors. Their average age is lower at the beginning of the crisis, the proportion of men trading in the market decreases (although it continues to be the majority) and the median volume per transaction of these new investors is also lower than the overall group of investors.

In conclusion, this paper describes the evolution of the investment behaviour of retailers in the equity markets in the face of a crisis like the one experienced in 2020, detecting a significant increase in their participation in them, especially in the first moments of that crisis. This increase is explained by the major growth in the number of transactions in the market (smaller on average) and by an extraordinary incorporation of investors on the days in which the greatest drops of the Ibex 35 took place, all of this in an environment in which new technology does much to facilitate access to markets. In these initial stages, the increase in trading was above all on the buy side, while at the end of the year, when quoted prices recovered, there was a greater increase in activity on the sell side. These results seem to show that at least some retail investors identified attractive opportunities to invest in shares at times of greatest price declines, expecting a recovery in prices in the future, and to disinvest at the end of the year, when the recovery of these prices made it possible to obtain a return. Despite the increase in retail investors' participation in the markets in the first months of the pandemic, the different indicators evaluated have subsequently shown a progressive return to pre-crisis values, although at the end of 2020 they had not yet been reached. There was also no substantial change in the percentage of share ownership held by families in 2020.

This report's results are accompanied by the publication of an interactive dashboard accessible online for all users from any electronic device.¹ Through this dashboard, users can access the main dynamic figures appearing in this paper, which can easily be modified by users, who can then observe the results themselves by selecting a specific period, type of market, sector, age group, gender and type of investor. This way of presenting the data gives the final consumer of the information flexibility and freedom and makes their visualisation more efficient, since the dashboard in question is slated to be updated periodically.

1 <https://app.powerbi.com/view?r=eyJrIjoizmNmNmVkNzktYTlmNC00YWNkLWE5N2EtY2E1ZDZiNmQ4ODgzliwidCl6lRiZDE1NWQzLWNiYjUtNGFjMC04MzZiLWJkMmFhMjJjZDk2OSIsImMiOjI9>

1 Introduction and motivation of the analysis

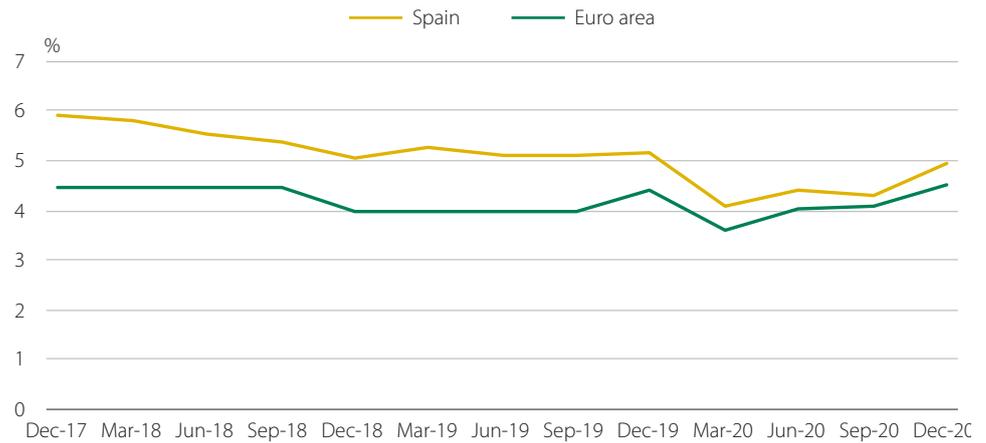
The crisis unleashed by the spread of COVID-19 in the first quarter of 2020 led to abrupt declines in prices on national and international equity markets, as well as spikes in volatility indicators that, in some cases, peaked at levels higher than those recorded in the financial crisis of 2008. The turbulence caused in the stock market gave rise to an increase in activity on the Spanish stock market in March 2020, with notable increases in trading volumes observed, in line with the trends in other European markets. The lockdown due to the spread of the virus, in a context of falling share prices, led to an increase in investor interest in carrying out transactions on the stock market.²

Between 2019 and 2020, only 5.5% of the trading volume for purchase and sale transactions executed on Ibex 35 shares on the Spanish stock exchanges was carried out by retail investors. Although this proportion is not very high, a specific analysis of these investors' transactions is of interest for several reasons. In the first place, households' investment in listed shares represents a significant part of the total portfolio of their financial assets, even above the average for the euro area. As can be seen in Figure 1, in 2019, the investment of Spanish households in listed shares represented just over 5% of their total portfolio (around 4.4% in the euro area as a whole). In March 2020, this proportion fell to 4.1%, as the drop in the value of these assets more than offset the increase in their trading. Subsequently, a moderate recovery was observed to 4.4% in June and 4.9% in December, figures closer to those existing before the crisis. In the euro area, the trend followed was very similar: investment in listed shares decreased in March 2020 to 3.6% and a subsequent increase was recorded to represent 4.0% of the total portfolio in June and 4.5% in December. Secondly, pursuit of the CNMV's objective of protecting retail investors can benefit from better information on the investment patterns of this group, extending the analysis to times of turbulence or exogenous shocks such as that of the COVID-19 crisis.

2 According to the Google Trends database, in Spain, from mid-February to the second week of March, searches relating to investment in the stock market increased by more than 220%, and those relating to the Ibex and the stock exchange increased by more than 160%.

Importance of listed shares in households in Spain and the euro area¹

FIGURE 1



Source: Compiled by the authors.

1 Based on data from the financial accounts of households and non-profit institutions serving households published in the Bank of Spain and the European Central Bank.

This work analyses the behaviour of retail investors in the equity market in 2019 and 2020, establishing four sub-periods that make it possible to identify any significant changes in the investment patterns of this group as a result of the pandemic. In this way it aligns with other similar works carried out by the securities authorities of France and Belgium. In particular, the work pursues several objectives: i) to show the evolution of the number and amount of purchases and sales of listed shares by retail investors during 2019 and 2020, ii) to relate these data to certain demographic characteristics of individuals and iii) to identify whether the COVID-19 crisis brought about a structural change in the behaviour of retail investors.

The second section of this work describes the data sample on which the study is based. Next, in the third and fourth sections, the evolution of stock market operations and the demographic and investment-related (sector, frequency in trading on the stock market, etc.) characteristics of retail investors before and after the outbreak of the COVID-19 crisis are described. Finally, the fifth section presents the conclusions reached and future lines of research.

2 Description of the data sample

This paper is part of the attempt to build a readily available tool to monitor the behaviour of retail investors in financial markets. For analytical purposes, “retail investor” is taken to mean any natural person regardless of investment experience. It should be noted that this criterion is not totally equivalent to the one established by the regulations, which classifies the clients of those companies that provide investment services as: eligible, professional and retail counterparties.³ The “eligible counterparties” are those defined in Article 207 of the recast text of the Spanish Securities Market Act as those entities authorised to trade in the financial markets, such as, for example, investment services and activities firms, credit institutions or insurance entities. In accordance with these regulations, those who are presumed to have some experience and the knowledge and qualifications necessary to make their own investment decisions and correctly assess their risks are considered “professional investors”.⁴ Finally, it is established that all those investors who are not professionals will be considered retail investors.⁵

In accordance with Article 26 of the MiFIR (Markets in Financial Instruments Regulation, Regulation (EU) No. 600/2014), investment firms that execute transactions in financial instruments must report these transactions to the competent authority. The bulk of this analysis was carried out based on the information collected through this communication of transactions and order records, the financial instruments reference database system (FIRDS), the statistical database of the ECB and the Statistics of the Continuous Population Register of the National Institute of Statistics.

The data used to draw up the study have correctly passed all the controls foreseen in the applicable regulations to be entered into the corresponding databases. It should be noted that despite the fact that the quality of the information in the databases is quite remarkable, small errors or inconsistencies can always be found that must be fixed to achieve the highest possible level of integrity and quality in the information to analyse. For this reason, as a result of this analysis, a series of additional and predefined quality controls have been developed to automate and standardise the extraction of a reliable and coherent set of data on which to carry out the study. In addition, sometimes the regulatory reporting structure is not ideal for carrying out this type of study, which is why the necessary transformation of the data

3 See Article 203 of the recast text of the Spanish Securities Market Act (Royal Legislative Decree 4/2015).

4 However, Annex II of the MiFID II (Directive 2014/65/EU) establishes other clients who may request to be considered professionals if they meet certain requirements regarding the number of quarterly transactions, volume of their financial portfolio and professional position in the financial sector. Therefore, in accordance with this regulation, there are natural persons who could be considered professional investors and who will be considered retail investors in this working paper.

5 See Article 204 of the recast text of the Spanish Securities Market Act.

has been added in addition to the previous quality controls to achieve an information distribution that makes this process's execution as efficient as possible.

The analysis that is carried out in the body of this work is done based on the trading data of retail investors (as defined at the beginning of the section) on the Ibex 35 securities in regulated markets and in the main multilateral trading facilities (MTFs) and systematic internalisers (IS), since in this way the most liquid listed shares traded in Spain are taken into account.⁶ Transactions carried out in individual accounts are taken into consideration, since for certain demographic classifications of investors (for example, investor age and gender) analysing those accounts with shared ownership is not possible. To complement this analysis, the appendix to this paper includes an assessment, parallel to the previous one, of the behaviour of retail investors referring to the Ibex Growth Market 15 index, which is made up of the fifteen companies with the greatest trading volume in the BME Growth segment.⁷

The extracted information corresponds to 2019 and 2020, which allows for segmentation into sub-periods of time based on the events and progress of the virus's spread in Spain. This segmentation facilitates detailed analysis of the impact of the crisis on investor behaviour. In this way, four sub-periods are differentiated: the first, prior to the outbreak of the COVID-19 crisis, runs from 1 January 2019 to 15 February 2020. This pre-crisis sub-period would show the stock market trading of retail investors in normal times (or in the absence of turbulence). The following sub-period corresponds to the first wave of the virus, from 16 February to 30 April 2020, which stands out for the imposition on the population of restrictive measures such as lockdown. It is followed by the de-escalation sub-period, which begins on 1 May and ends on 30 September, in which some of the measures that limited people's movement, among others, are gradually withdrawn; and the last sub-period corresponds to a second wave of the virus, which runs from 1 October to the end of 2020.

The study sample is made up of a total of 18,752,123 transactions by retail investors who trade with both Ibex 35 and Ibex Growth Market 15 shares, in individual and shared ownership accounts (79% and 21%, respectively). Approximately 34% of these were carried out in 2019, while almost 66% were carried out in 2020, thus coinciding with the outbreak of the COVID-19 crisis (see Table 1). In fact, based on the classification by sub-periods explained above, in the first wave of the virus, which covers two and a half months, 19% of the transactions of those two years were carried out, which is equivalent to almost half of the amount recorded in the pre-crisis stage (39%), which in this study includes 13 and a half months. In the de-escalation, from the beginning of May to the beginning of October, 26% of retail transactions were registered between 2019 and 2020 and in the second wave, the last quarter of 2020, the remaining 16%.

In relation to the type of transactions that were executed in these periods, in the pre-crisis stage, the proportion of purchases and sales was very similar (48.8% in

6 A total of 93% of the volume traded on the continuous market corresponds to Ibex 35 shares.

7 This segment, together with the BME CIS and BME venture capital firm segments, make up an MTF called BME MTF Equity, on which the companies of the former Alternative Investment Market (MAB) have been listed since September 2020.

the first case and 51.2% in the second). However, in the first wave, purchase transactions shot up to 64.3% of trading, probably driven by the sharp dips suffered by companies, which accumulated significant losses in just a few days. The Ibex 35 lost 28.9% of its value in the first quarter of the year⁸ and the Ibex Growth Market 15 receded 13.3%. In the de-escalation period, the proportion of purchases was also higher than that of sales (56.4% versus 43.6%, respectively), although a decrease towards more balanced values between both trades began to be observed. Following this trend, in the second wave (period that includes the last quarter of 2020), the proportion of purchases and sales was very similar to that of the period before the pandemic (the percentage of sales transactions was slightly higher than that of purchases, at 51.4%).

Most of transactions carried out by retailers are executed on regulated markets (around 95% of them). However, after the beginning of the crisis, there was an increase in the proportion of transactions carried out through multilateral trading facilities. Thus, in the pre-crisis period, they stood at 3.3%, in the first wave 4% and in the second, 5.4% (for regulated markets these percentages were 95.5%, 95.1% and 93.6%, respectively).

Descriptive statistics of the data sample

TABLE 1

| | Sub-period 1 01/01/2019 – 15/02/2020 | Sub-period 2 16/02/2020 – 30/04/2020 | Sub-period 3 01/05/2020 – 30/09/2020 | Sub-period 4 01/10/2020 – 15/02/2020 | Total |
|---------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|-------|
| | Pre-crisis | Lockdown | De-escalation | Second wave | |
| Transactions | | | | | |
| % of transactions | 39.2 | 19.0 | 26.1 | 15.7 | – |
| % of purchases | 48.8 | 64.3 | 56.4 | 48.6 | 53.7 |
| % of sales | 51.2 | 35.7 | 43.6 | 51.4 | 46.3 |
| Markets | | | | | |
| % in regulated markets | 95.5 | 95.1 | 95.0 | 93.6 | 95.0 |
| % on MTFs | 3.3 | 4.0 | 4.2 | 5.4 | 4.0 |
| % on SIs | 1.2 | 0.9 | 0.8 | 1.0 | 1.0 |
| Gender¹ | | | | | |
| % men | 79.4 | 84.3 | 84.2 | 82.0 | 82.0 |
| % women | 20.6 | 15.7 | 15.8 | 18.0 | 18.0 |
| Age¹ | | | | | |
| % 18-34 | 5.3 | 9.5 | 8.2 | 7.0 | 7.2 |
| % 35-49 | 28.0 | 37.1 | 38.0 | 35.5 | 33.6 |
| % 50-64 | 35.5 | 33.0 | 33.5 | 34.7 | 34.3 |
| % 65-99 | 31.2 | 20.5 | 20.3 | 22.8 | 24.9 |

Source: CNMV.

1 Prepared with data of the individual transactions carried out with Ibex 35 and Ibex Growth Market 15 securities, excluding those of accounts with shared ownership.

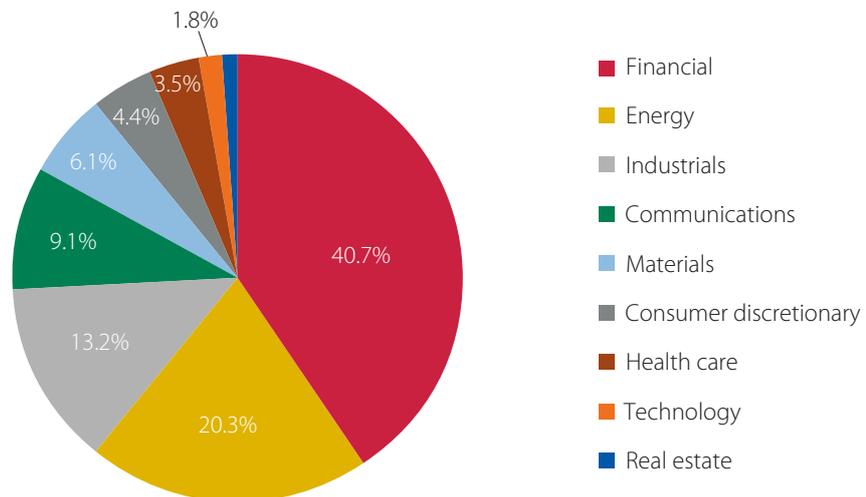
8 The Ibex 35 registered the largest daily loss in the history of the index on 12 March 2020, with 14.1%.

In relation to the sectors of the securities traded, as shown in Figure 2, trading in the financial sector stands out: 40.7% of the total volume traded by retail investors between 2019 and 2020 is destined for companies in this sector. It is followed by trading in energy (20.3%), industrial (13.2%) and communications companies (9.1%). During the various stages of the crisis, these percentages varied, depending on the index, as will be seen later: in the Ibx 35, retailers reduced trading where they had traded the most, the financial sector, in favour of others that gained weight like, for example, healthcare. Regarding the trading of securities of the Ibx Growth Market 15 index, variations were also observed in the sectors in which retailers invested throughout the crisis, especially technology (the predominant one at first), which increased in the first wave and decreased as the year progressed giving way to the communications sector.

The information on the most significant demographic variables shows that 64.8% of the people in the total sample are male, and 14.2% female. For the remaining 21%, sex is not obtained, since these transactions were carried out in accounts with two or more co-owners. In view of these data, it is clear that there is a greater presence of men who invest in listed shares than women, and this gap increased in the first wave of the virus. Excluding the data on transactions through jointly held accounts, it can be seen that before the outbreak of the crisis the percentage of men was 79.4%, while that of women was 20.6%. In the first wave, the percentage of men increased to 84.3%, remaining in that proportion during the de-escalation period to later decrease during the second wave to 82%. Therefore, it is observed that the proportion of men increased starting in February 2020 and that, subsequently, there was a partial reversal of this trend.

Trading volume by sectors¹

FIGURE 2



Source: Transaction reporting. Compiled by the authors.

1 Prepared from data of the individual transactions carried out with Ibx 35 and Ibx Growth Market 15 securities, excluding those of accounts with shared ownership. All values are considered in the study.

The age of the investors also provides significant information about possible changes in retail investor behaviour. For this analysis, the sample was divided into four age groups: from 18 to 34 years old, from 35 to 49, from 50 to 64 and from 65 to 99.

Before the start of the crisis, almost 67% of transactions were executed by individuals 50 and over.⁹ Subsequently, that proportion fell, with an increase in the younger age ranges. The percentage of investors belonging to the first two age brackets increased considerably in the first wave of COVID-19. Of the total retailers that traded in those months, 9.5% were 18 to 34 years old, compared to 5.3% that was registered in the pre-crisis stage; and 37.1% were 35 to 49 years old, compared to 28% previously. The population over 65 was the one that reduced the number of transactions executed during this period the most (from 31.2% to 20.5%), although individuals 50 to 65 years old also carried out fewer stock transactions (they went from executing 35.5% of the total to 33%). This last age group experienced the least changes.

In the third sub-period, the proportions of participation according to the age ranges hardly changed. However, in the last sub-period studied, the second wave, a certain return to the initial percentages can be observed. The youngest age groups decreased their proportion: individuals between 18 and 34 years old executed 7% of transactions in the last quarter of 2020, and those between 35 and 49, 35.5%. This encompasses 42.5% of the total transactions compared to 46.6% in the first wave, so there was a more limited presence of retailers belonging to the younger age groups, although it continued to be greater than that observed before the outbreak of the crisis. These aspects will be discussed in greater depth in the section on the characteristics of retail investors in financial markets.

9 In this regard, only individual transactions are taken into consideration, excluding those of accounts with shared ownership.

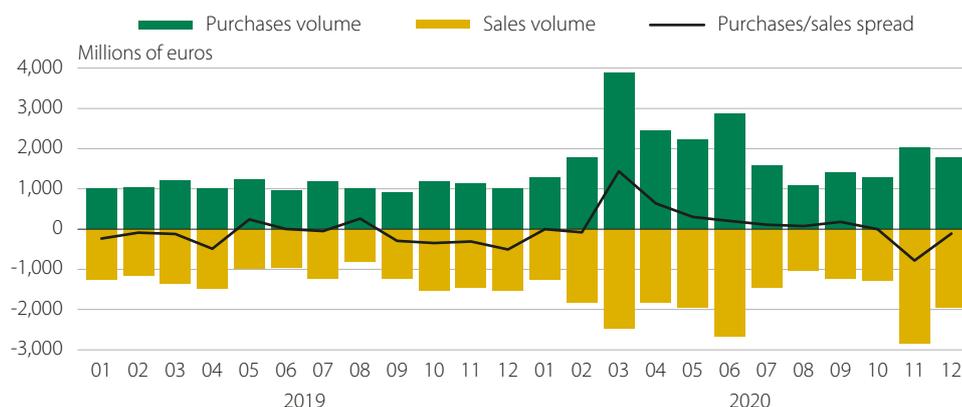
3 Retail investor trading during the COVID-19 crisis

This section provides evidence on the increase in stock transactions by retail investors in the wake of the COVID-19 crisis. To do this, a detailed analysis has been carried out of the transactions by these investors in individual accounts on Ibx 35 shares between 2019 and 2020.^{10, 11}

Figure 3 shows the monthly buying and selling volume of those investors from January 2019 to December 2020. It can be seen that that volume during 2020 was greater than in 2019, especially the months of March, June and November. During the pre-crisis stage, monthly purchases were around €1 billion, and sales, which fluctuated a little more, never exceeded €1.6 billion. The difference between the volume of purchases and sales during this period varied throughout the months, although in general the volume of sales was greater than of purchases. Only in four of the almost 14 months of the pre-crisis period was a volume of purchases higher than that of sales, which reached a maximum of approximately €266 million in March 2019. In contrast, the largest difference between sales and purchases (in favour of sales) occurred in December 2019 and stood at €490 million.

Evolution of the trading volume of monthly purchases and sales

FIGURE 3



Source: Transaction reporting. Compiled by the authors.

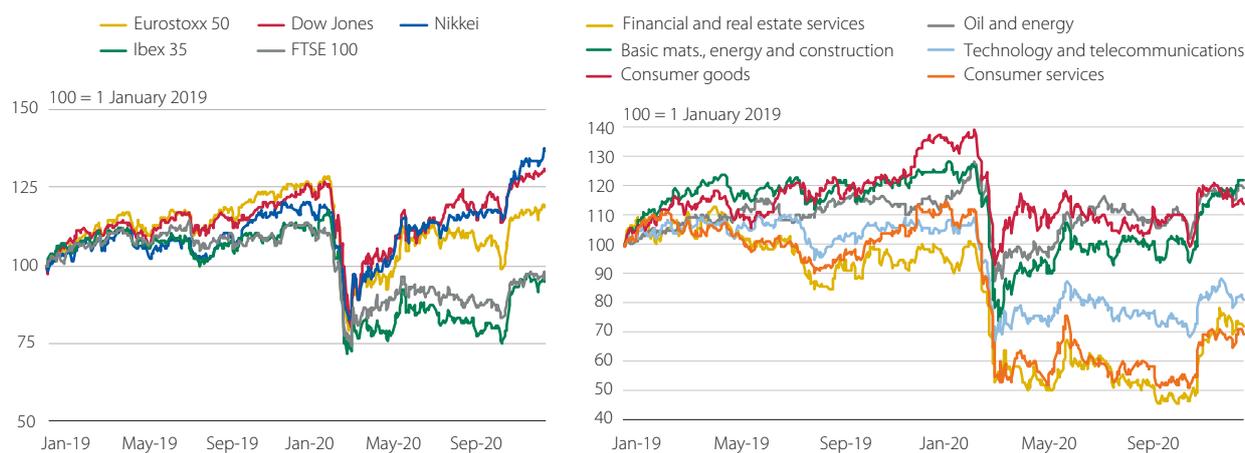
10 During these two years, four companies were added to the index: in June 2019, MásMóvil replaced Técnicas Reunidas; in June 2020, Almirall replaced Mediaset; in September 2020 MásMóvil was excluded from the index and Pharma Mar replaced Ence, and, finally, in October 2020 Solaria was added. Analysis of the data shows that retail investors carried out transactions on all the stocks listed in the Ibx 35 during 2019 and 2020, with the exception of Técnicas Reunidas.

11 In this analysis, only individual transactions are taken into consideration, excluding those of accounts with shared ownership.

As indicated above, in March 2020 during the first wave, the volume of purchases was significantly higher than of sales, a trend that was also observed in other countries such as Belgium and France. Trading volume grew rapidly, reaching almost €4 billion in purchases and €2.5 billion in sales for the month as a whole. At the same time, Ibex 35 quoted prices had collapsed, the index posting the biggest daily dip in its history (14.1%)¹² and closing the month with losses of 22.2% compared to February and 28.9% in the first quarter of the year (see Figure 4).

Evolution of the returns of the international indices and of the sectors of the IGBM (Madrid Stock Exchange General Index)

FIGURE 4



Source: Refinitiv Datastream.

The weekly analysis of the information for 2020 (see Figure 5) reveals a clear change in the investment trends starting the ninth week of the year (24 February), with a sharp increase in activity, especially buying. Between the eighth and the ninth week (the week of February 17 and of February 24), the volume of purchases increased by 139%, and the difference between purchases and sales went from €36 million in favour of sales to 315 in favour of purchases. The following weeks that make up this period also see abundant stock market activity, with the maximum of this first wave being observed in the eleventh week of the year (from 9 to 13 March), with a purchase volume of more than €1,140 million and sales of 700 million. That week also saw the two biggest daily drops in the Ibex 35 quoted price between 2019 and 2020. The same trend was observed in countries such as Belgium, where in a few weeks of this first wave retail investors bought up to three times more than they sold, which gave rise to a purchase and sale spread of €634 million in the period in favour of purchases.¹³

The spread between purchases and sales began a growing trend (in favour of purchases) starting the sixth week of the year, before the first wave began in Spain (although the first cases of COVID-19 had already appeared in the country).¹⁴ The spread's growing trend extended up to the eleventh week, reaching a maximum of

¹² On 12 March 2020.

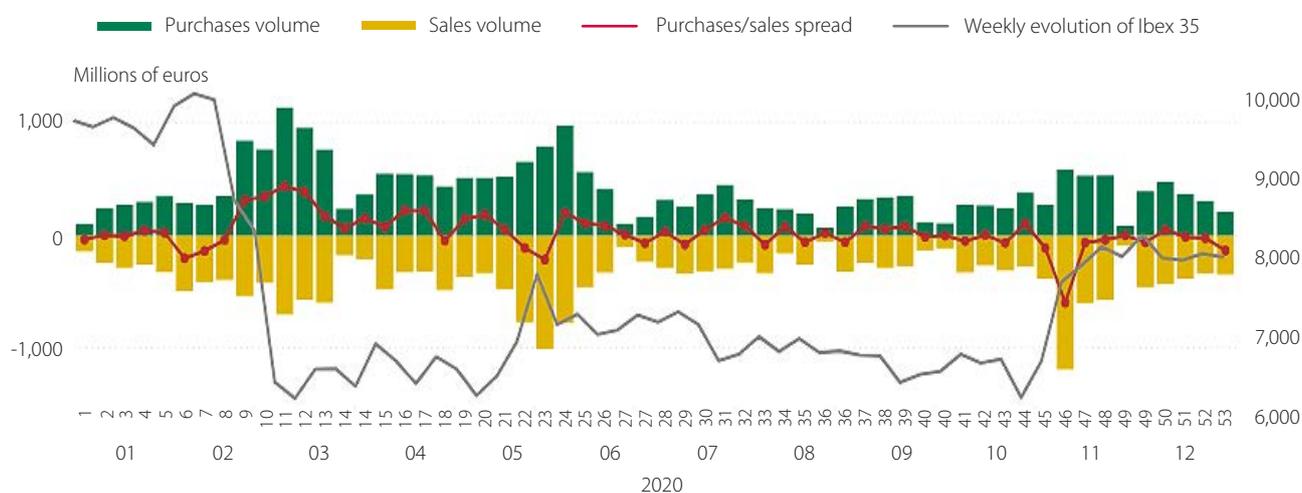
¹³ In Spain, this accumulated differential during the first wave was almost €2,355 million.

¹⁴ In Spain, the first case of COVID-19 was confirmed on 31 January 2020 on the island of La Gomera: <https://www.sanidad.gob.es/en/gabinete/notasPrensa.do>

approximately €442 million of net purchases (per week). Subsequently, a progressive decrease in this spread was observed, although the net position continued to clearly be towards de purchases for several more weeks (practically until week 18, from 27 to 30 April). The monthly analysis reveals, as previously indicated, that the maximum purchase and sale spread occurred in March and then fell off sharply until May. From then until October, it showed a much more stable trend. In November, the volume of sales reached a maximum and, although purchases also grew significantly, the difference between the two was €790 million in favour of sales. This sales peak in November, which occurs at a time when the Ibx 35 is rising sharply (25.2% compared to October), reflects the desire of retail investors to realize profits in certain securities after the falls in prices of previous months. Finally, in the final months of the year the net selling position continued, although for a lower amount (€165 million).

Evolution of the trading volume of weekly purchases and sales. 2020

FIGURE 5



Source: Transaction reporting. Compiled by the authors.

When observing the data estimated by other national authorities (Belgium and France), the trading trends in volume of purchases and sales was very similar to that experienced in Spain. In France, the number of purchase transactions quadrupled in March 2020 compared with the monthly average for 2019 and their amount tripled. In Spain, the growth was similar: the number of purchase transactions carried out in March 2020 increased more than fourfold compared with the monthly average for 2019, while sales more than doubled, and the volume of purchases in March 2020 was three times higher than the average values of 2019.

The trends in purchases and sales in Spain in the three sub-periods that have been identified since the start of the crisis are described below and these data are related to the figures from the pre-crisis stage. In the first of these sub-periods, which corresponds to the first wave (from week 8 to 18 of 2020), weekly purchases were on average 180% higher than the average weekly purchases of the pre-crisis period; sales also grew significantly, but less (67%). During this sub-period, the high volumes of purchases and sales registered in the first weeks (approximately until week 13 of 2020) are notable. Subsequently, these decreased slightly, although they con-

tinued to be higher than in the pre-crisis section and remained more stable until almost the beginning of the next sub-period (de-escalation).

During the fifth week of the de-escalation period (week 23, in June 2020), a first sales maximum (€1,000 million) was registered, in a context in which the quoted price of the Ibex 35 had increased for several weeks (9.3% from the beginning of week 22 and 15.2% from week 21). The recovery of share prices could partially explain this increase in sales. The following three weeks continued to see intense activity, while in the rest of the de-escalation months, coinciding with the summer months, retail activity was observed that was relatively similar to 2019's.

Finally, retail activity changed dramatically again in the second wave. In November the maximum amount of monthly sales (€2,825 million, compared to €2,450 million in March and €2,661 million in June) and weekly sales (only in week 46 of the year, the second of November, retailers sold a total of €1,190 million) were recorded. Once again, these figures coincide with a period of recovery in quoted share prices (the Ibex 35 reached 8,000 points, a quoted price not seen since March). The rest of the weeks that make up the period of the second wave were also characterised by a high volume of purchases and sales, but slightly lower than in the first wave.

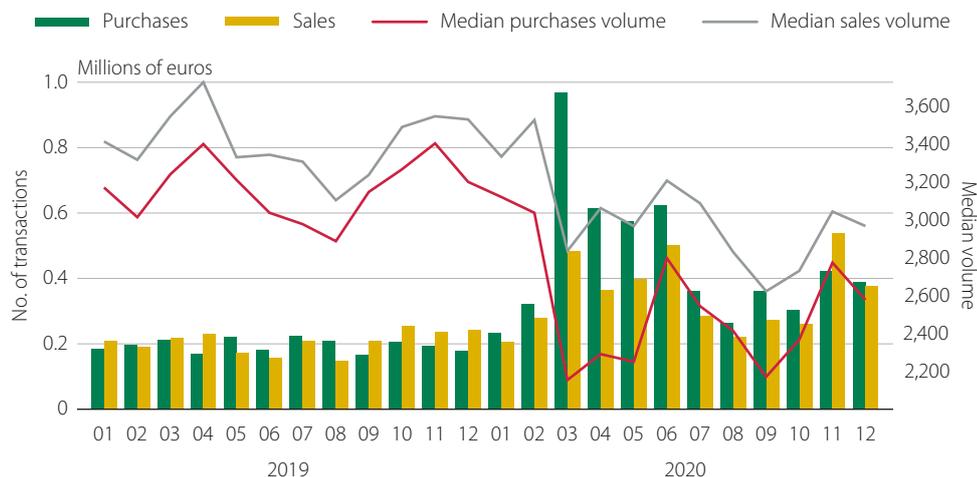
It is interesting to observe the monthly median size of transactions carried out by retail investors in the period analysed (see Figure 6). In the pre-crisis stage, this ranged between approximately €2,900 and €3,400 for purchase transactions and between €3,100 and €3,700 for sale transactions. In the months immediately preceding the pandemic, there was a significant decrease in these amounts: the median amount of purchase transactions fell from €3,030 at the beginning of the year to €2,170 in March, and the median monthly amount of sales fell from €3,320 in January 2020 to €2,845 in March, with the pandemic in full swing. The fact that in March the maximum monthly purchase amount of the period under analysis and one of the maximum sales amounts were reached in a context of decreases in the median value of transactions can only be explained by the strong increase in the number of transactions executed: in March 2019, retail investors carried out 212,306 buy transactions and 217,812 sell transactions, while in the same month of 2020 purchases were more than four times higher (969,998 transactions) and sales were more than double (487,400 transactions). This declining evolution of the median value per transaction was not observed in France, where purchase volumes remained relatively stable during the first wave of the virus and sales volumes increased.

As of March, and until the end of 2020, the maximum monthly median volume of purchases for Ibex 35 shares recovered slightly with some ups and downs, standing at around €2,800, but did not exceed the lowest values of the pre-crisis stage (€2,900). The maximum sales were €3,200, exceeding the minimum of the pre-crisis stage (€3,100). Both medians followed a similar trend throughout the sub-periods of the crisis although with different intensities. They dropped off sharply in the first wave, posting a first low of the year in March. Then, in full de-escalation, the median volume increased, reaching approximately €2,800 in June in purchase transactions and €3,200 in sales. The increase was more pronounced for purchase transactions, so the gap between the median sales and purchases, which had widened significantly in the first wave (going from around €200 at the beginning of 2020 to 680 in March),

was reduced considerably. From June to September, the median volume of both transactions decreased to register a new low in sales transactions (€2,615) and a figure similar to that of March in purchase transactions (€2,167). In the last months of the year, volumes grew again (except in December), but in no case did they reach pre-crisis levels.

Number of monthly purchase and sale transactions and average volume per transaction

FIGURE 6



Source: Transaction reporting. Compiled by the authors.

The sector analysis reveals that most of the trading by retail investors was in financial institutions' securities. However, this sector lost importance in each of the study's sub-periods, as shown in the panels of Figure 7. In the pre-crisis stage, 44.5% of the total volume of retail trading was in financial sector shares, a proportion that fell to 41.1% in the first wave, 38.6% in the de-escalation and 35.4% in the second wave. Similarly, retail investors reduced the proportion of their trading in shares of companies specialising in materials (they traded 9% in the pre-crisis stage, 4.2% in the first wave and 3.4% in the second). In sectors such as energy, trading remained relatively stable, with slight increases and decreases throughout the periods (on average around 21% of the total). Finally, the trading trades in the healthcare sector are worth noting,¹⁵ in which in the pre-COVID-19 stage retailers carried out 1.2% of their transactions: in the first wave it nearly doubled to 2.1%, continued to increase to 4.6% in the de-escalation stage and was finally 9.2% in the second wave. The same trend was also observed for the industrial sector (8.6% in the pre-crisis stage and 17.1% in the second wave).

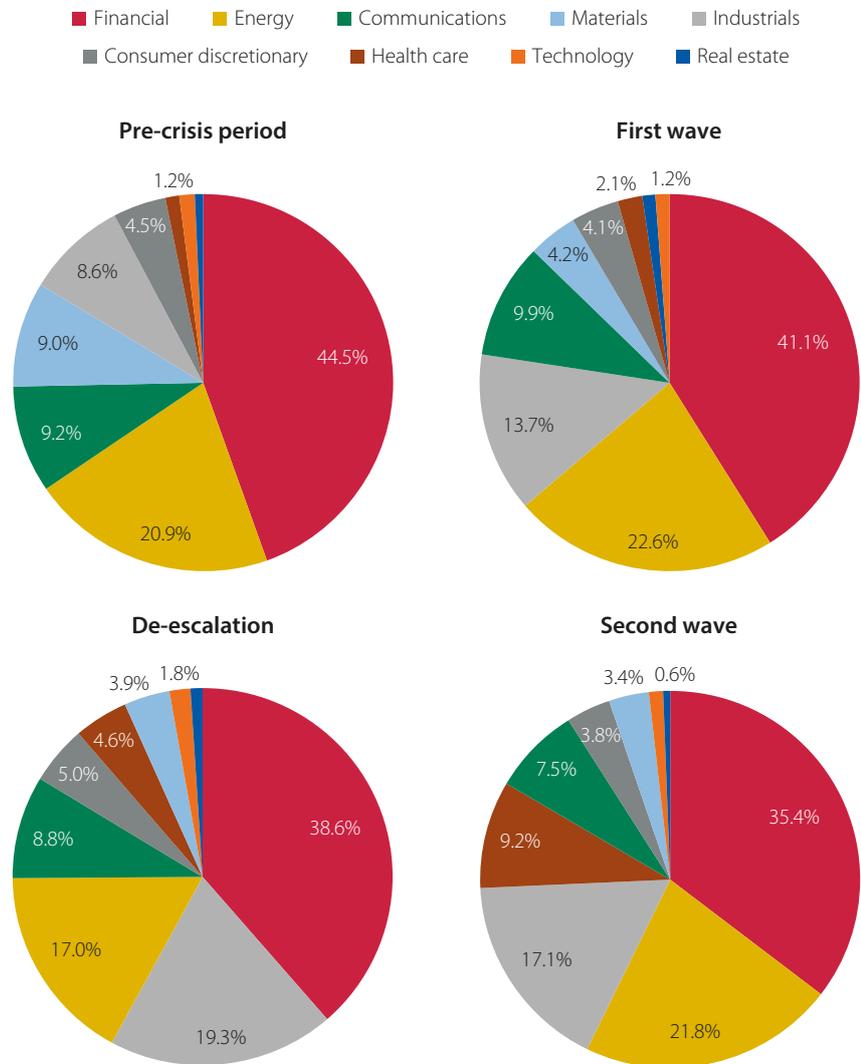
The panels in Figure 8 show the relevance of total trading carried out by retail investors and distinguish the four sub-periods, the various sectors and the purchase and sale transactions. As indicated in the motivation behind this paper, the retail investor's participation is low, since it represents around 5.5% of the total transactions in the period under study (considering Ibex 35 shares traded on the regulated market).

15 This increase was also partly due to the inclusion in the index of the pharmaceutical company Pharma Mar.

However, there are some interesting patterns depending on the period and sector. In general, before the COVID-19 crisis, the presence of retail investors in the sectors in which the Ibex 35 securities have been classified is low and, in most cases, less than 5% (with the exception of the financial and the materials sectors).

Trading by sectors and periods

FIGURE 7



Source: Transaction reporting. Compiled by the authors.

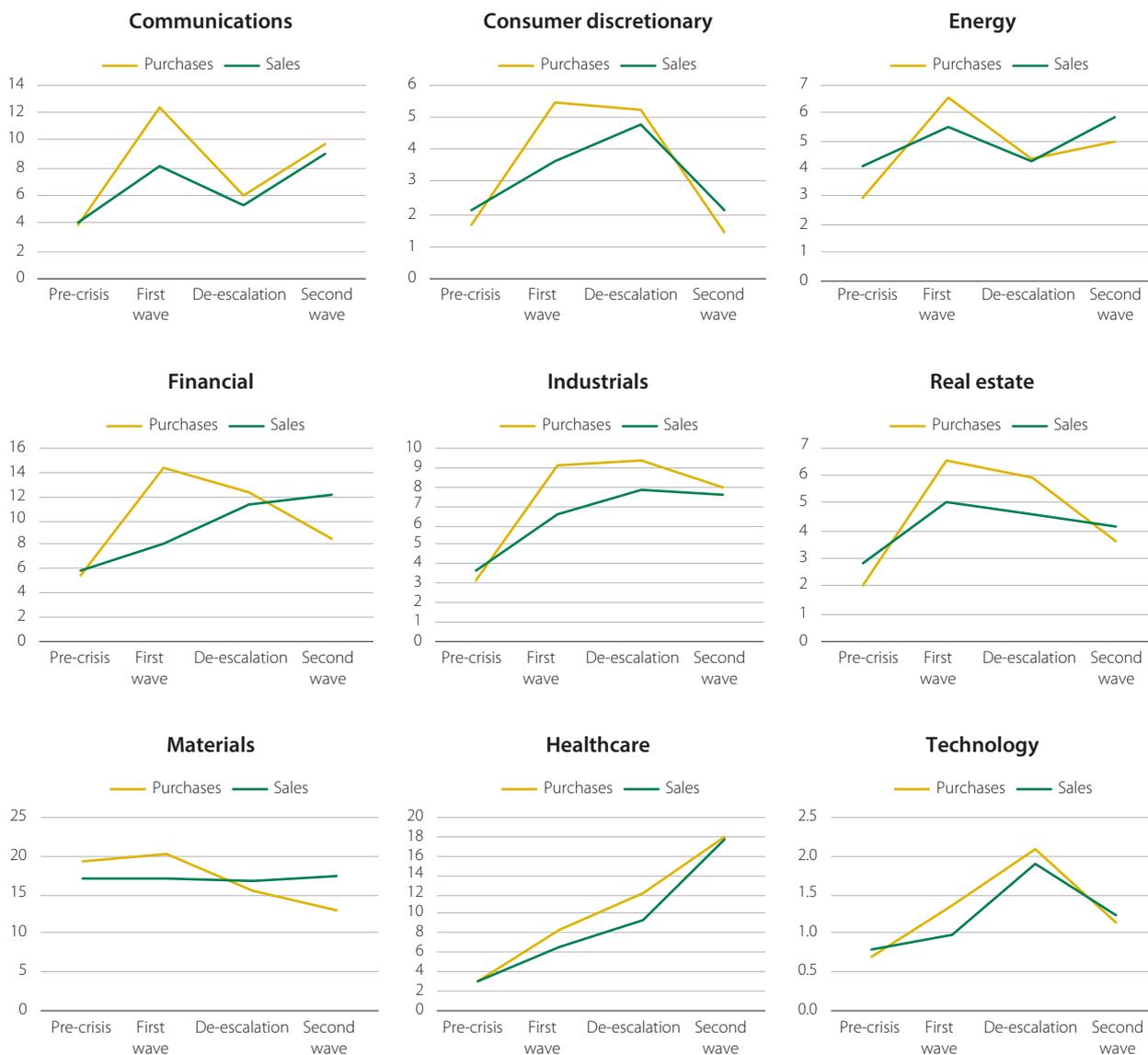
With the arrival of the first wave of the virus, the significant increase in trading by retail investors led to increases in their presence in most of the sectors. The importance of retail purchase transactions increased threefold or more in some sectors such as communications, consumer goods, and real estate in the first wave. One thing that stands out is that retail investors significantly strengthened their presence in companies and sectors that are more volatile or affected by the pandemic (for example, companies dependent on tourism¹⁶ or the financial sector), probably with the expectation of obtaining a future return in a recovery context. We infer from these

16 These companies are classified in the consumer discretionary and industrial sectors.

data that retail investors were more inclined to enter the market in this period of uncertainty than were institutional investors. After the increase registered in the first wave, a decrease in the presence of retail investors in total trading was observed during the rest of the year, but it remained higher than that observed before the pandemic. In aggregate terms, retail purchase transactions increased from 4% of the total before the crisis to a peak of 9.4% in the first wave and ended 2020 at 6.4%.

Presence of retail investors by sector with respect to total trading

FIGURE 8



Source: Transaction reporting. Compiled by the authors.

There was also an increase in the relevance of sales transactions in total trading during the first wave, since retail investors' stock transactions grew generally. However, comparatively, this increase was less. The sectors with the greatest rises in the presence of retail investors in sales transactions were communications and healthcare. In both cases, that presence doubled, going from 4.0% in the communications sector and 3.1% in the healthcare sector in the pre-crisis stage to 8.1% and 6.6% in the first wave, respectively. After the first wave there was no uniform trend across sectors,

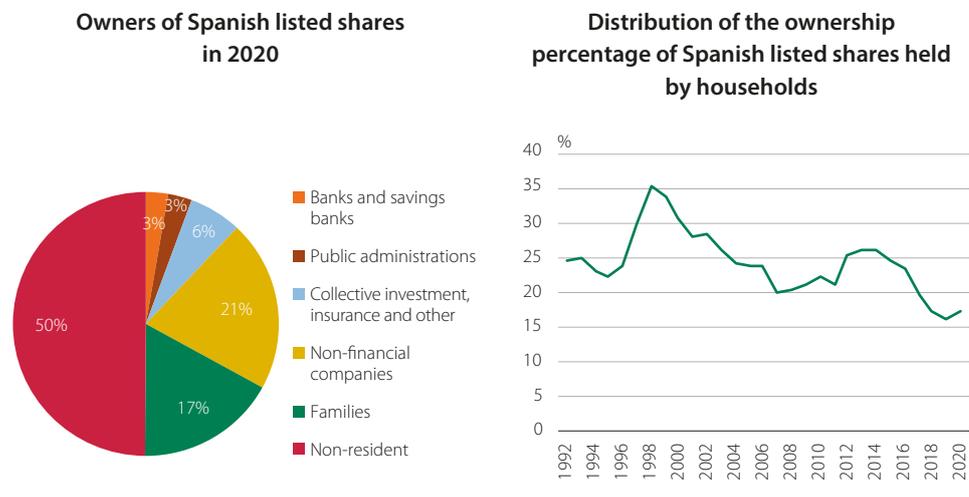
although in aggregate the proportion of total sales transactions carried out by retail investors continued to increase, going from 4.5% in the pre-crisis phase to 6.4% in the first wave and 7.6% at the end of the year.

From the panels of Figure 8 it can be said that the most significant increases both in buying and selling transactions took place in the first wave and that, despite the subsequent decline, the relevance of trading by retail investors ended 2020 at above pre-crisis values. Some exceptions to this general behaviour can be observed, such as in the discretionary consumer goods and materials sectors, in which the presence of retail investors in purchase transactions was lower in the second wave than the values of the pre-crisis stage. The sectors that experienced the greatest increases in the presence of retailers at the end of the year were healthcare, industrial goods, communications and finance (the latter especially in sales transactions).

Despite the increase in trading by retail investors during the COVID-19 crisis, their relative importance in terms of the distribution of ownership of the shares of Spanish listed companies increased only slightly in 2020, remaining at historically low proportions. The data published by BME in its *Annual report on ownership of listed shares* – which are not fully equivalent to those of this study, among other reasons because they refer to all listed shares – show that the participation of families in the ownership of listed shares of Spanish companies stood at 17.1% in 2020, one point above the 2019 figure. Despite this slight increase, the first since 2014, this proportion is far from the data from previous years, which were almost always above 20% and with maximums close to 35% (see right-hand panel of Figure 9).

Ownership of Spanish listed shares

FIGURE 9



Source: BME

4 Characteristics of retail investors during the COVID-19 crisis

After the description of the retail investor transaction trends in 2019 and 2020, emphasising the changes from the COVID-19 crisis, this section presents a description of the main characteristics of the retail investors. Information is shown regarding their age and gender and investment indicators by age groups, both for the total sample of investors and for those identified as new investors.¹⁷

An analysis of investors' gender reveals that most of the volume traded in Ibex 35 shares between 2019 and 2020 was carried out by men (around 80%), and that this proportion increased slightly in the first months of the crisis. In January 2020, the proportion of traded volume executed by men was 79%. This percentage increased in the months that make up the first wave and part of the de-escalation (between March and July) to almost 85%, so that, consequently, the proportion of women fell considerably to just 15%. In the rest of the de-escalation period, these proportions remained relatively stable (around 84% of the volume traded was by men and 16% by women) and in the second wave they were slightly corrected (to 82% by men and 18% by women), proportions more similar to those of the pre-crisis stage.

Figure 10, which represents the average age of investors for each gender, reveals interesting patterns. The first indicates that on average women who trade Ibex 35 shares are older than men (around three years throughout the entire period). The second shows that, because of the COVID-19 crisis (between February and March 2020), the average age of both genders decreased significantly, reaching minimum values in April. It then showed a slight increase until July 2020 and remained relatively stable after that, although always at figures lower than those of the pre-pandemic stage.

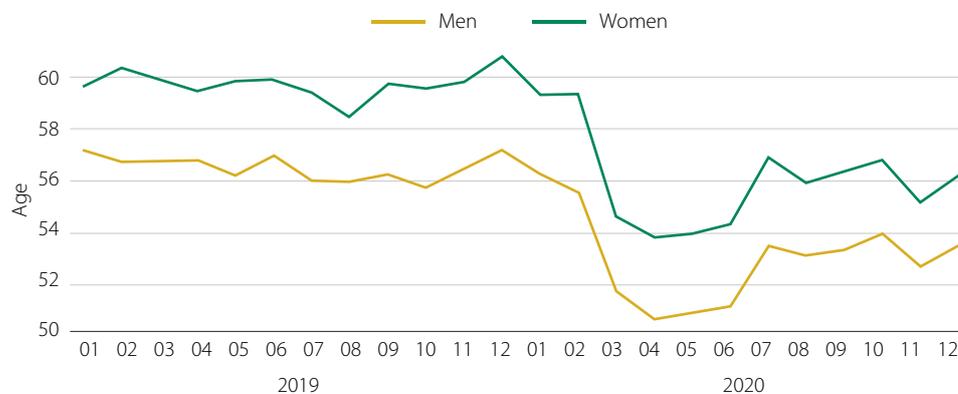
In particular, in the pre-crisis stage, the average age of the women fluctuated between 58 and 60; in April, during the first wave, it fell to 53, probably influenced by a wave of new younger investors. During the de-escalation, slight increases were observed in the average age of women who participated in the market trading Ibex 35 shares, reaching an average of 56 years old in July, a figure that was maintained until the end of the year. The average age of men followed the same trend, although with a lower starting point, since their average age in the pre-crisis stage was approximately 56. In the first wave, a minimum was observed in the average age of men (around 50), with a subsequent increase to 53 at the end of the year. Therefore, a similar trend is identified in the average age of men and women who traded on the

17 In this analysis, only individual transactions are taken into consideration, excluding those of accounts with shared ownership.

stock market during the crisis, with a decrease of approximately three years and a subsequent recovery, although the levels prior to the COVID-19 crisis were not reached in either case.

Average age of retail investors

FIGURE 10



Source: Transaction reporting. Compiled by the authors.

The distribution of buying and selling trading volume based on the age of retail investors also reveals interesting patterns. In 2019, the age group with the highest volume of purchases was 50 to 64, followed by the over 65s, the 36 to 49 group and, finally, the youngest, from 18 to 34. In 2020, the order according to the volume of investment of the age groups was different: although the first (from 50 to 64) and the last (the youngest) maintained the same positions, a change was observed in the intermediate groups, since those between 36 and 49 years old bought a greater volume of shares than those over 65.

Although the youngest investors continued to be the ones who made the least volume of purchases, they were the ones who increased their purchases the most with respect to the rest of the age groups. In 2020, these investors tripled their purchases compared to the figures for 2019, far from the increases of the rest of the age groups (the most notable case, although some distance away, was that of the group of investors 36 to 49 years old, 132% more compared to 2019). If the analysis is carried out only on the data for the month of March 2020 with respect to the previous year, it can be seen that the youngest investors multiplied their purchase volume by more than six, those 36 to 49 years old multiplied it by four, those 50 to 64 by three and investors over 65 by more than two. In Belgium, it was also found that younger investors invested more than other age groups, although those groups with more active investment activity remained the same. Regarding the volume of sales, a very similar trend is observed, although with less sharp increases in all age groups. The groups that registered the most significant increases in sales volume in 2020 compared to 2019 were the youngest: 128% with 18 to 34-year-olds and 95% with 36 to 49-year-olds.

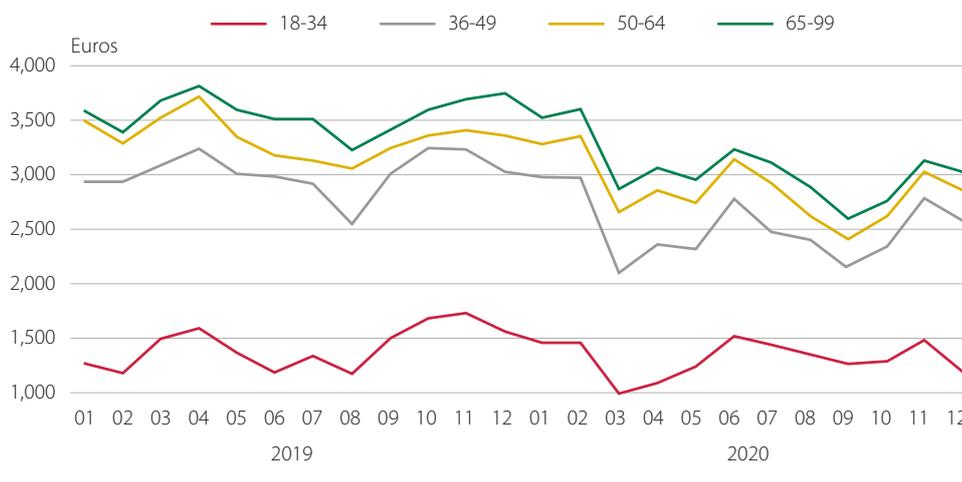
As can be seen in Figure 11, the largest transaction trading volumes (as a median) occur among older investors. In general terms, this result could be attributed to the fact that older groups tend to have a higher level of income and wealth, as well as more experience in making investment decisions. In particular, the 65 to 99 age

group presented the highest median volume per transaction in all periods. In the pre-crisis stage, minimums of €3,240 of median volume per transaction and maximums of €3,810 were observed in this age group, followed by investors in the 50 to 64 age group, with close investments, although slightly lower. In the 35 to 49 age bracket, the median investment volume before the crisis ranged from €2,550 to €3,240 per transaction and, finally, among younger investors (18 to 34), the median investment volume was significantly lower (€1,180 to €1,730).

In all age groups, a similar trend was observed in the temporal evolution of the average volumes per transaction: in the first wave of the virus there was a significant decrease in them, which were at minimums of €2,880, €2,650, €2,104 and €1,012 in each age group, respectively. These figures represent decreases of between 450 and almost €900 per transaction, depending on the group. An irregular trend was then observed, with increases in June and November and decreases in other months, which left the median investment volumes at the end of 2020 below those existing before the crisis.

Median transaction volume of retail investors by age group

FIGURE 11



Source: Transaction reporting. Compiled by the authors.

4.1 Characteristics of the new investors

So far, the trading volume trends, the behaviour and the characteristics of all the retail investors who participated in the markets because of the COVID-19 crisis have been pointed out. This section illustrates how the pandemic gave rise to a massive influx of new investors and offers some of their characteristics. In this respect, a transaction will be deemed to be carried out by a “new investor” if it is the first transaction that the individual carries out in the 2019–2020 period. After that first transaction, that investor will be classified as an “existing investor”.

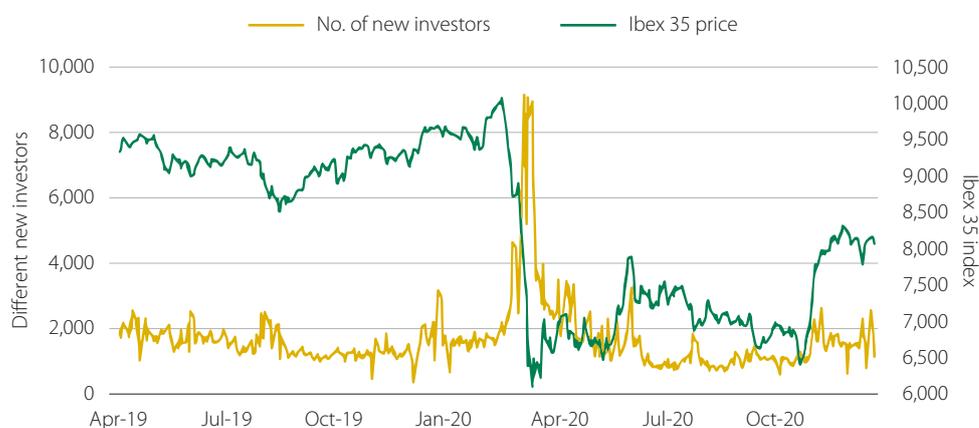
As can be seen in Figure 12, in the pre-crisis stage the number of new daily investors stood at an average of 1,630 individuals, with specific maximums and minimums of 3,187 and 370, respectively. At the end of February 2020, in the first wave of the virus, there were major increases in the number of new daily investors, cor-

responding to the beginning of the decline in quoted stock prices. In fact, the days of the greatest daily falls in the Ibex 35 saw the greatest increases in the number of new investors, with figures close to 9,000 individuals per day. The week of 9 March, in which emergency measures started to be implemented to contain the spread of the virus,¹⁸ is when the greatest increase in the number of new investors in the trading of Ibex 35 shares occurs. The three peaks identified occurred on 9, 12 and 16 March, with 9,175, 9,095 and 8,970 new investors, respectively. The daily drops in the Ibex 35 on those days were the greatest since those observed at the end of June 2016 due to the Brexit, especially the one on 12 March, which was the biggest drop in the index's history. In chronological order, these were 8%, 14.1% and 7.9% in each case.

During the following weeks, the number of new investors decreased, until stabilizing at figures similar to those observed before the crisis, or lower, like in the de-escalation period, where a daily average of 1,213 new investors were registered. Finally, in the last quarter of the year and corresponding to the second wave of the virus, a slight increase in new investors was observed in some sessions, which raised its average to 1,428 individuals. This trend, which is not similar to the one observed in the first wave, occurred at a time when the Ibex 35 was rising (since November, the index's quoted price began an upward trend that closed with an increase of 20.2% in the fourth quarter). Therefore, it seems to follow that the incentive for investors to enter the market, at least in the 2020 financial year, was greater at times of abrupt drop-offs in price.

Number of new investors in relation to the Ibex 35

FIGURE 12



Source: Transaction reporting. Compiled by the authors.

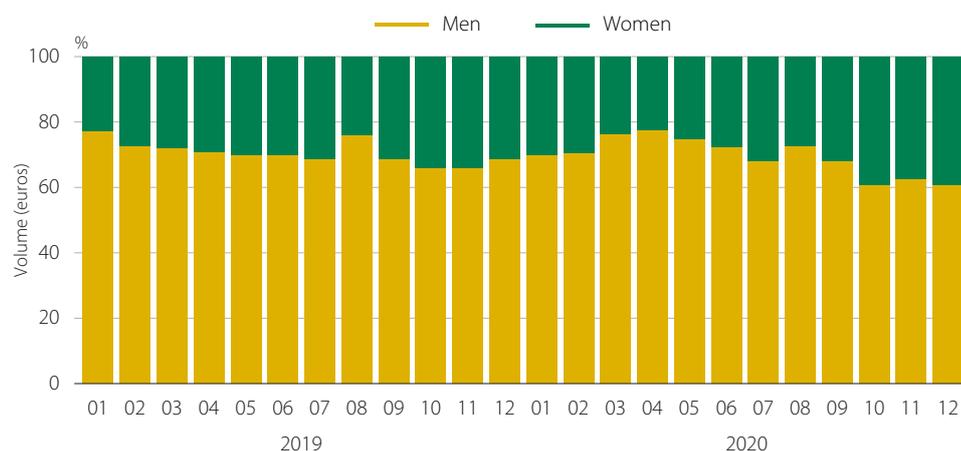
The demographic characteristics of the new investors also present slight variations with respect to those observed in the complete sample. Earlier it was noted that approximately 80% of retail investors during 2019 and 2020 were men (except for slight variations in certain periods). The analysis of new investors reveals a much

18 For example, in Italy the population's movement was restricted and in Spain school was cancelled in some autonomous communities, and the Spanish population was locked down at the end of that same week.

smaller proportion of men in the whole of 2020 (67% on average,¹⁹ see Figure 13). However, in the months when the pandemic began, this percentage grew, so that a higher proportion of retail investors who started trading in the market were men (around 77% and 78% in March and April). At the beginning of the de-escalation period, these percentages decreased significantly towards figures of 60% at the end of the year.

Presence of new investors by gender

FIGURE 13



Source: Transaction reporting. Compiled by the authors.

Regarding the average age of the new investors, it can be seen that women who participate in the market are older than men. This also occurs with the data from the full sample, but in that case, there is a three year age difference between men and women on average in 2020, while in the sample of new investors men are on average five years younger than women. There was also a decrease in the age of new investors in the first wave of the pandemic, considerably more intense than that of investors as a whole. In particular, the median age of first-time investors who are women – which was well over 60 in 2019 – fell to 52 in March and 50 in April (for the full sample the median age of these two months was 54). Meanwhile, the median age of new male investors, which oscillated between 56 and 57 in 2019, fell to 48-49 during the first few months of the pandemic (around 51 for the full sample of investors). As such, considerably lower average ages were observed in these new investors in the first wave of the virus. This trend could be explained, in part, by the greater use that younger people make of new technologies applied to finance, technologies that became even more significant when in lockdown.

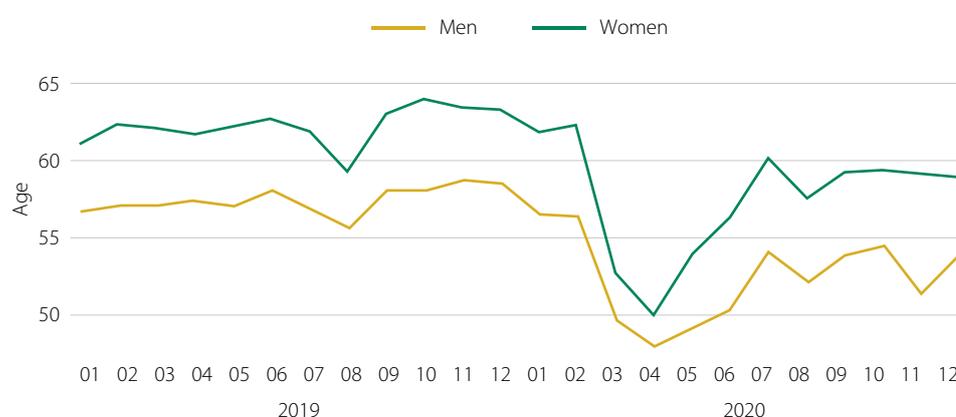
Between May and July, the age of the new investors increased, and later a greater stability was observed (with some ups and downs). At the end of the year, the average age of the new female investors was around 59, three years older than the average age of the entire sample at that time. The same was true for new male investors: their average age was around 54 (one year older than the entire sample). Although the figures for men and women at the end of the year were lower than the

19 The analysis uses data for 2020, since the interest in this question lies in seeing the changes in the type of investor that joins the market after the COVID-19 crisis.

pre-crisis values, the upward trend they followed after the de-escalation period was more intense than the one observed for the complete sample of retail investors.

Average age of new investors

FIGURE 14



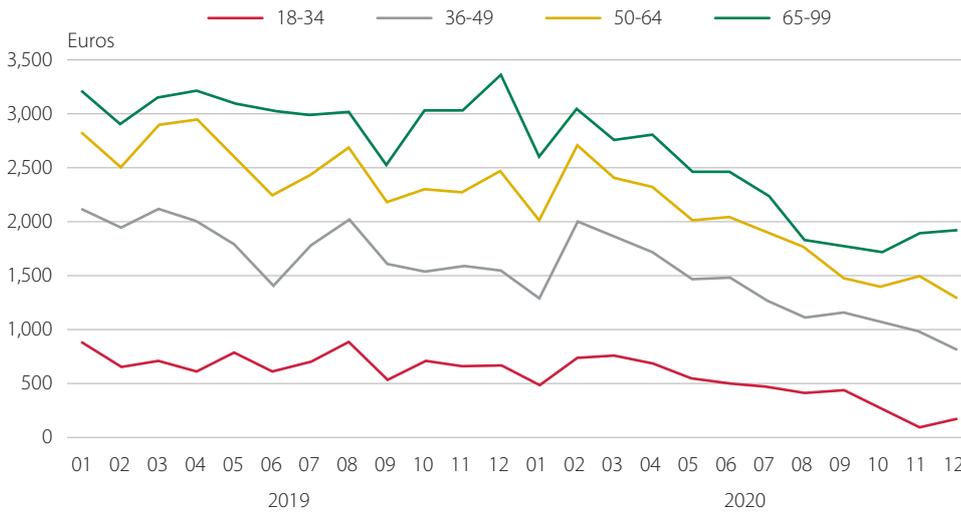
Source: Transaction reporting. Compiled by the authors.

The median volume of transactions for the sample of new investors was lower than the one for retail investors as a whole. In 2020 this was €1,513 per transaction, while in 2019 it was €2,318. The figures for the total sample were almost €1,150 and €900 higher than them, respectively. This trend is in line with the one observed in other countries such as France and Belgium and is also partly explained by the fact that these new investors are in general younger, so their financial capacity to invest could be lower.

The median volume of new investor transactions increases with their age, just as it does for the total sample of investors. Its temporal evolution, however, was somewhat different. The most important drop in the median volume of these investors occurs in January and not in March, as observed for the total sample. Subsequently, in February there was an increase in the median volume of investment in all age groups and from that moment on, a clearly downward trend was observed. The declines in median transaction volumes were greater for the group of retailers aged 65 to 99 than for the rest. In February they were €3,021 and in May, after the first wave, €2,434; in the de-escalation period, the decline continued until they approached the median volumes of the 50 to 64 year-old-age group (€1,797 and €1,755 in August for these groups, respectively), and it was not until the second wave when these volumes saw a slight uptick to finish the year at €1,907. Investors in the 50-64 and 36-49 age brackets followed much the same trend, with an increase in February and a gradual decline in median volume per transaction through the end of the year. For the first age group, the median volume went from €2,689 in February to €1,288 after the second wave. The data for the 36 to 49 year old age bracket were on average around €500 less on the same dates. As for the youngest ages, 18 to 34 years old, the decrease in the median volume per transaction in 2020 was slighter than in the rest, since they trade with significantly smaller amounts (between €133 in November and almost €800 in March).

Median volume of retail investor transactions by age group

FIGURE 15



Source: Transaction reporting. Compiled by the authors.

5 Conclusions

This paper discusses the evolution of the transactions of retail investors in the equity markets during 2019 and 2020 in order to identify the characteristics and differences arising as a result of the COVID-19 crisis. As other European authorities have done, the intention is to analyse the behaviour of natural persons in the stock market in a context of unprecedented global uncertainty.

The analysis shows that at the beginning of the first wave of the virus in Spain, at a time of sharp falls in quoted prices and high volatility, there was a significant increase in the trading volumes of individuals in the equity markets. This evidence has also been found in other European countries such as France and Belgium. In particular, in March 2020, coinciding with the biggest falls in the history of the Ibex 35 (22.2% compared to February), the maximum volume of purchases by these investors occurred (up to €4 billion in the month, four times the monthly average for 2019). By contrast, the maximum volume of monthly sales was seen in November (€2.83 billion a month, compared with the monthly maximum of €1.6 billion reached in 2019), coinciding with the largest monthly rally of the Ibex 35 in 2020 (25%). In addition, it is observed that the median value of transactions decreased during the COVID-19 crisis, so the increase in the amount of trading by retail investors is explained by the major increase in the number of transactions, especially purchases. This trend seems to indicate that retail investors saw an attractive investment opportunity at a time of sharp drops in prices due to the expectation of their subsequent recovery, which occurred partially in November, and which possibly determined the increase in sales in that month.

This study has also revealed certain interesting demographic characteristics of retail investors: around 80% of the volume traded in Ibex 35 shares was carried out by men, a proportion that increased slightly in the first months of the crisis. Regarding the average age of investors, it is worth highlighting the fact that men are younger than women (by around three years throughout the period) and that for both groups the age decreased significantly between February and April 2020. Subsequently, it increased and remained stable, although it ended the year with lower figures than those recorded before the crisis. In addition, a massive inflow of new retail investors was observed at the beginning of the crisis. In fact, the days in which the number of new investors entering the market was higher, corresponded to those in which the Ibex 35 registered its most dramatic falls. The demographic characteristics of these new investors differ slightly from those of the overall pool of investors. Specifically, their average age is lower than that of all retail investors at the beginning of the crisis, although the average age of women is still higher than that of men. Although the proportion of men who invest in Ibex 35 shares continues to predominate within new investors (67% on average in 2020), it is lower than that of the total sample of investors. In addition, in their case the median volume per transaction is also

lower, among other reasons, because as the average age of new investors decreases, their purchasing power probably decreases as well.

These extraordinarily strong initial increases in trading volumes and number of transactions can be explained in different ways. In the first place, and as mentioned above, the major drops in quoted prices observed in the equity market in March could have led to a massively buying attitude on the part of investors, who had an expectation of yields in a given period of time. In addition, the lockdown period was the ideal breeding ground to give wings to these investors' trading, since it gave rise to an increase both in the time to trade on the stock market in a relatively informed manner and in the resources available to them, at least a part of the retail investors, due to the savings recorded due to the impossibility of spending on activities that were restricted or limited. Finally, there is a fundamental aspect that also triggered this increase in trading: the use of new technologies applied to finance, which does away with the need to go to any financial service provider in person to trade on the stock market.

After the first months of the health crisis, the boom in stock market trading started to deflate, and during the rest of the 2020 financial year there was a gradual return to the initial trading values, without having reached them at the end of that year. Significant variations could be seen in the presence of retail investors in total trading. It increased both in buying and selling transactions with respect to the data prior to the crisis. In purchase transactions, this presence, which was 4% in the pre-crisis sub-period, increased to 9.4% during the first wave. It subsequently decreased, although in the last sub-period (the second wave) it was still higher than the initial values (6.4%). The initial increase in the presence of retail investors in sectors highly affected by the pandemic, such as communications, consumer goods, or finance, is notable. There was also an increase in the presence of retailers in sales transactions, although this was comparatively less than the increase above, especially in the communications and healthcare sectors. In all these transactions, the proportion of retailers with respect to the total trading increased in each sub-period, standing at 4.5% before the crisis, 6.4% in the first wave and 7.6% in the second wave.

Even though these intense increases in of retail investors' stock market activity were recorded and that their presence in total trading rose, the data on share ownership by type of investor for 2020 does not reveal significant changes in the percentages attributed to families. These place the participation of families in the ownership of listed shares of Spanish companies at 17.1%, a figure that represents 1 point more than 2019 but that is far from those observed in previous years (23% on average between 2010 and 2018).

This paper allows us to conclude that retail investors significantly increased their trading in the equity markets at times of greatest turbulence of the COVID-19 crisis and that there was subsequently a partial normalisation of this trend towards the values observed before it. Determining whether this normalisation is going to be completed or whether, on the contrary, the participation of retail investors will remain structurally higher requires having a longer time period. For this reason, the simultaneous publication on the CNMV website – together with this study – of a dashboard, with the main results of this work, which will be updated periodically, should prove particularly useful.

In addition to the time limitation of this work, there are other limitations related to the type of asset under study. This work is limited to the analysis of the trading of retail investors in Spanish listed shares and does not consider other assets such as foreign shares, investment funds, debt or even crypto-assets, which are outside its scope of study. The inclusion of these assets, which is not possible in some cases due to lack of information, would allow a more complete view of the investment behaviour of retail investors in the financial markets during the COVID-19 crisis.

References

FSMA (2020). *The purchase and sale of BEL20 shares by individual investors during the coronavirus crisis.*

AMF, Markets Directorate (2020). *Retail investor behaviour during the COVID-19 crisis.*

BME, Research & Analysis (2021). *Annual Report on ownership of listed shares.*

Bank of Spain. *Financial accounts of the Spanish economy.*

European Central Bank. *Statistical Data Warehouse. Financial accounts of the euro area.*

Appendix

As a complement to the main analysis of the retail investors' trading trends in Ibex 35 securities, this appendix describes the evolution of retail investors' transactions in Ibex Growth Market 15 securities during the crisis. This index is made up of the securities of the 15 companies with the greatest trading volume in the BME Growth segment, which together with another two segments of BME make up a multilateral trading facility (BME MTF Equity) on which the companies of the former Alternative Stock Market have been listed since September 2020.

As can be seen in Figure A.1, the volume of monthly purchases and sales by retail investors was much higher in 2020 than in 2019 (€298 million compared to €60 million), something that was already observed in the analysis of the Ibex 35. However, in the case of the Ibex Growth Market 15, a notable increase in trading by retail investors has been detected since December 2019, before the phase that has been called "first wave". This fact may be related to the very nature of this index, made up of fewer companies that are less liquid and with a higher level of concentration. These characteristics mean that when new companies with good prospects are added or, in general, in periods of greater market volatility, trading increases substantially and tends to concentrate on a few securities. For example, the first notable increase in the trading of the securities of this index, which occurred in December 2019, had its main origin in the addition of Holaluz to the market, which aroused notable interest in investors, and from Greenalia's strong revaluation. In 2020, in the context of the crisis, the two months with the highest volumes of both purchases and sales were February and August: in February trading was concentrated in two securities (FacePhi Biometrics and Asturiana de Laminados) and in August in one (Lleidanetworks Services). The rest of 2020 was relatively stable, with a volume of purchases close to €23 million and €21.5 million for sales, levels well above those observed in 2019.

Evolution of the trading volume of monthly purchases and sales

FIGURE A.1



Source: Transaction reporting. Compiled by the authors.

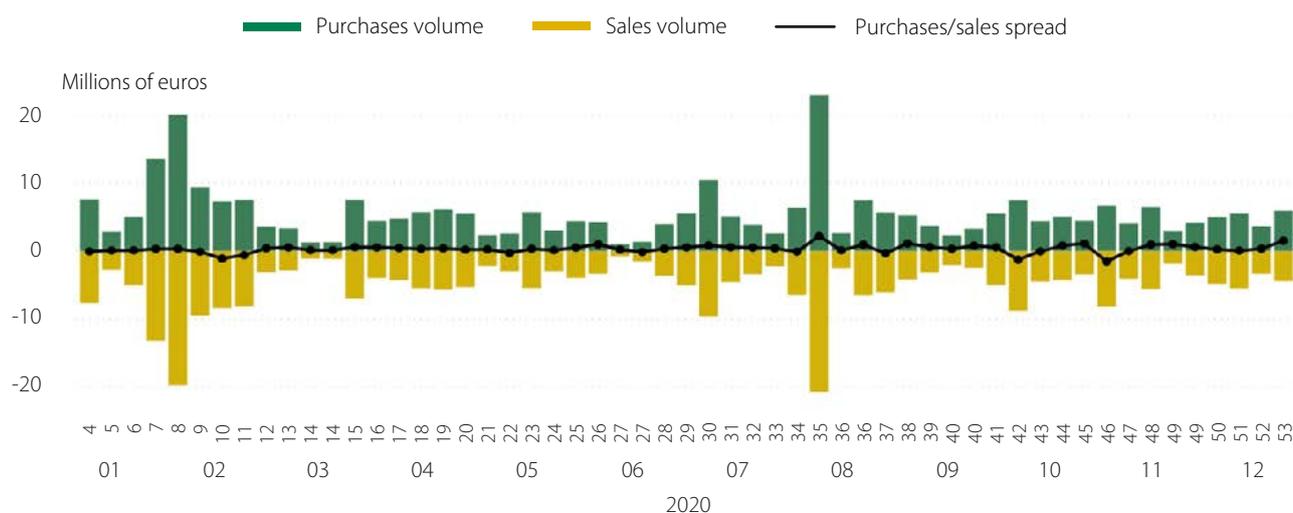
The monthly highs for February were reached with purchase and sales figures close to €48 million in both cases, while those of August, less intense, were almost €39 million for purchases and 35 million for sales. Only in 2 of the 24 months that make up the sample was the difference between purchases and sales in favour of sales. One of these months was March 2020 during the first wave of the virus, so, contrary to what was observed with the trading of Ibex 35 securities, where a buying attitude prevailed amongst investors, in this case they leaned more towards sales: retail investors sold almost €515,000 more than they bought in Ibex Growth Market 15 securities.

The weekly analysis of the information for 2020 reveals that, especially in the last weeks of February and the first weeks of March, corresponding to the virus's first wave, the trading of retail investors with the values of this index were high, as previously mentioned (see Figure A.2). Weeks 7 and 8 registered the highest purchase and sale volumes, approximately €13 million and €20 million respectively, compared to the €5 million observed at the beginning of February. It is worth mentioning that in week 8 this stock market index begins to experience daily falls, which continue until week 11 of 2020, from 12 to 19 March, in which the largest drop is recorded (27.3% weekly and 15.3% on 12 March). However, contrary to what happens with the Ibex 35, that week trading volume by retail investors was not greater and was close to €8 million for purchases and sales, similar figures to those of the previous two weeks. Therefore, it can be deduced that, although the behaviour of retail investors who traded with Ibex 35 securities was to massively increase trading during the first wave, taking advantage of falls in the index, a similar trend does not appear in the case of the Ibex Growth Market 15, and there is an increase in trading prior to the start of the Ibex Growth Market 15 setbacks, which continues for fewer weeks.

During the de-escalation period, relatively stable trading volumes are recorded with the exception of week 35, from 27 August to 3 September, when the weekly maximum of both the volume of purchases and sales is reached (€23 and €21 million, respectively), at a time of advances in the index. Subsequently, in the second wave, trading volumes were recorded with little variation between weeks.

Evolution of the trading volume of monthly purchases and sales (2020)

FIGURE A.2



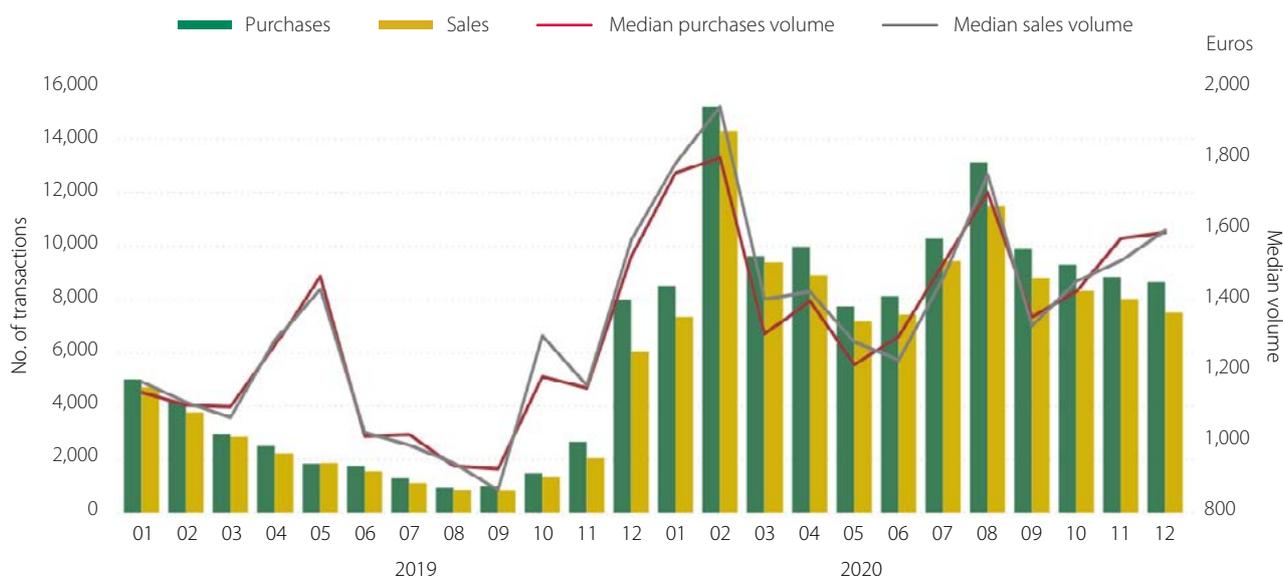
Source: Transaction reporting. Compiled by the authors.

The evolution of the number of transactions carried out by retail investors was very similar to that of the trading volume of purchases and sales (see Figure A.3). In December 2019, the number of transactions carried out by retail investors increased significantly, going from 2,660 purchase transactions and 2,046 sales transactions in November to 7,979 and 6,042, respectively. In February 2020, these almost doubled to 15,204 buy transactions and 14,308 sell transactions, similar to the volumes in trading trend discussed. During the rest of the first wave period, the number of transactions compared to February decreased, although it remained high and stable (around 9,500 transactions of each type). Subsequently, during the de-escalation, they decreased slightly although they increased in July and reached a maximum again in August (less than in February, 13,132 and 11,510 purchase and sale transactions, respectively). Until the end of the year, and coinciding with the period of the second wave, transactions fell slightly each month to 8,640 and 7,501 purchase and sale transactions.

Regarding the median volume per transaction, it is observed that the months in which more transactions are carried out are those in which it is higher. For example, in February 2020 this average volume was around €1,800 per purchase transaction and €1,940 per sale transaction; and in August, these figures were €1,700 and €1,750, respectively. As occurred with the behaviour of retail investors with Ibx 35 securities, in this case there was also a decrease in the median volume per transaction during the first wave (from mid-February to May), although subsequently the trends are uneven. In this case, the median volume per transaction, as shown in Figure A.3, shot up during the months of de-escalation (from approximately €1,250 for each type of transaction in May to €1,750 in August) and fell in September, to around €1,350 per transaction. Subsequently, this median volume increased again during the second wave to €1,600 per transaction. Therefore, from the analysis of this index, it could be deduced that the increase in trading volumes is explained both by the rise in the number of transactions carried out and by the increase in the average volume per transaction.

Number of monthly purchase and sale transactions and average volume per transaction

FIGURE A.3



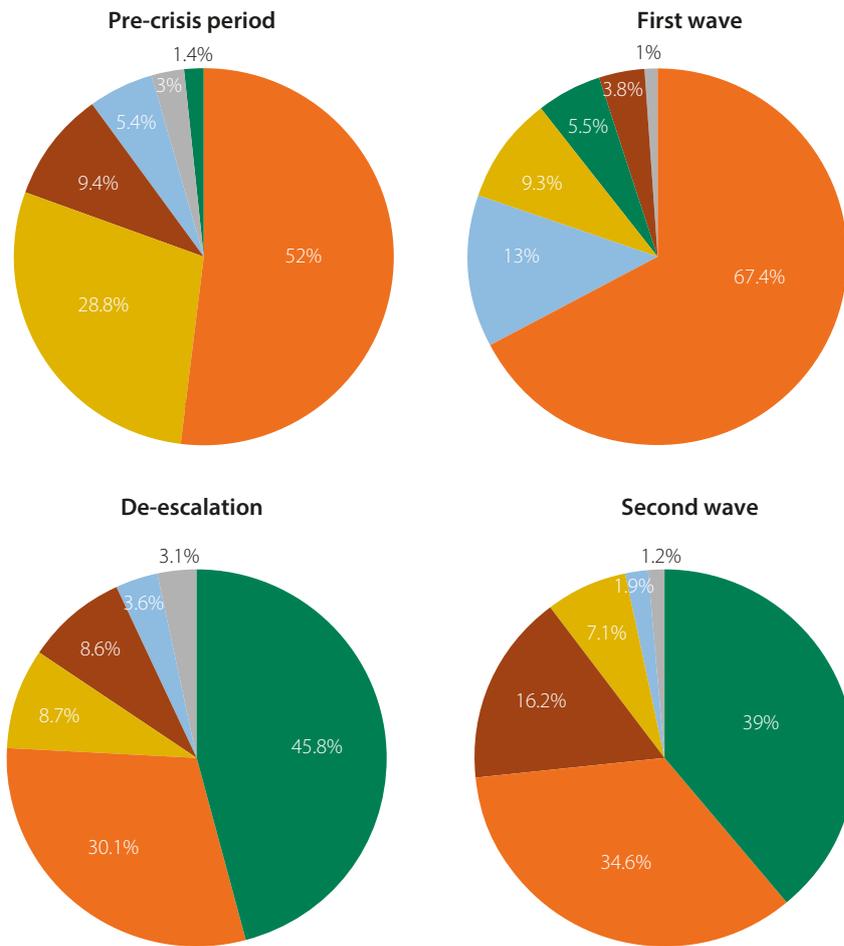
Source: Transaction reporting. Compiled by the authors.

The sectoral analysis shows that most of the trading by retail investors with Ibx Growth Market 15 securities between 2019 and 2020 was carried out in the technology and communications sectors. As the crisis progressed, the first of them lost ground to the other, as shown in the panels of Figure A.4. Thus, in the pre-crisis period, 52% of the total volume of retail trading was carried out in the technology sector, while only 1.4% was done in the communications sector. In the first wave, both percentages increased considerably, to 67.4% and 5.5% respectively. In the de-escalation, however, while the percentage of investment in the communications sector increased substantially, up to 45.8%, to become the sector in which individuals traded the most, that percentage in the technology sector decreased to 30.1%. Lastly, in the second wave, the proportion traded in both sectors decreased, to 39% and 34.6% respectively, although they remained the two majority sectors. Finally, the trading trends in the healthcare sector is noteworthy, which, although it fell from 9.4% to 3.8% between the pre-crisis period and the first wave, later rose to 16.2% during the second wave. The trading trends in the energy sector should also be mentioned, although their behaviour was the opposite, since there the percentage of trading by retail investors fell in each period, going from 28.8% in the pre-crisis period to 9.3% in the first wave and 7.1% in the second wave.

Trading by sectors and periods

FIGURE A.4

Energy Communications Materials Industrials Health care Technology

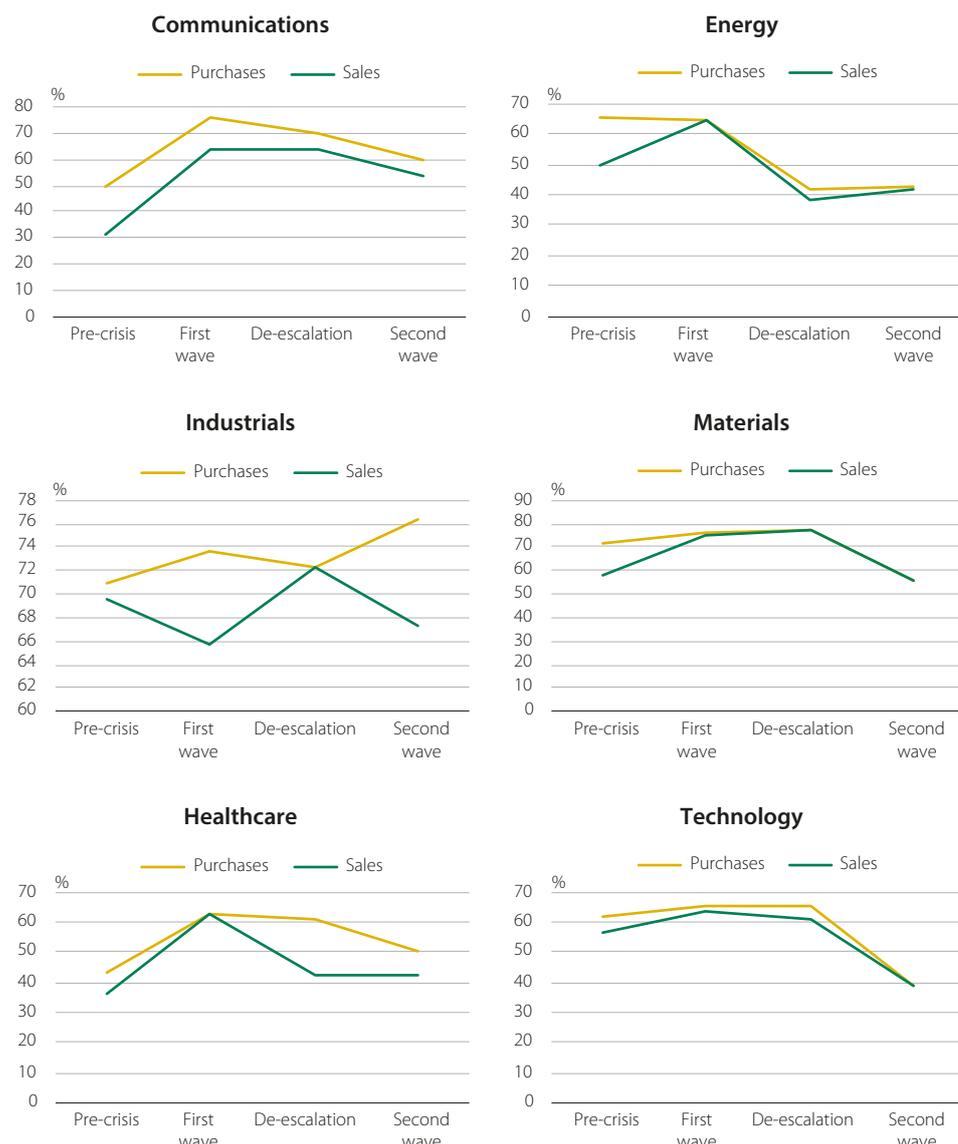


Source: Transaction reporting. Compiled by the authors.

In relation to the relevance of retail investors' trading with respect to the total trading of Ibex Growth Market 15 securities (considering the shares traded on the regulated market), a significant difference should be noted in terms of the trend observed for the case of the Ibex 35. The analysis of the Ibex Growth Market 15 reveals that the participation of retailers is significantly higher and a majority with respect to the total trading, since it represents almost 57% of total operations in the 2019-2020 period (5.5% in the case of the Ibex 35). This high presence of retailers and, in contrast, the reduced participation of institutional investors could be explained by the lower liquidity of the securities in this index, which makes them less attractive, or by the fact that they cannot be chosen by certain institutions like in the case of investment or pension funds due to their investment policy or the existing regulatory framework.

Presence of retail investors by sector with respect to total trading

FIGURE A.5



Source: Transaction reporting. Compiled by the authors.

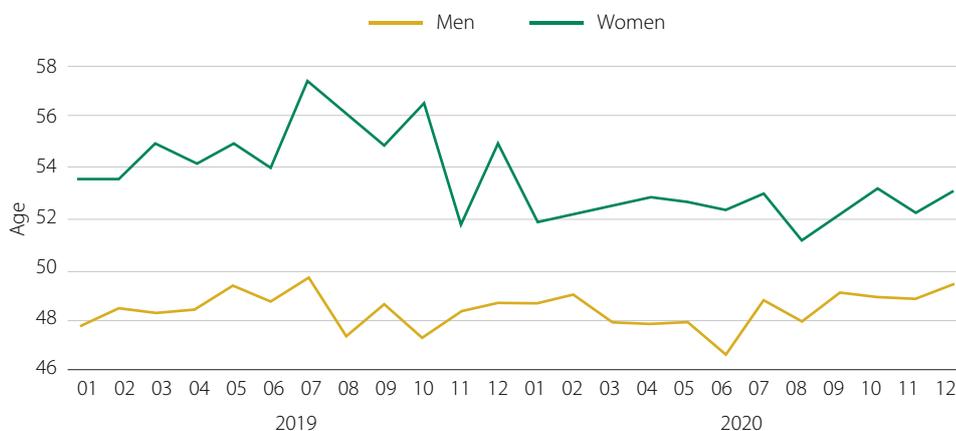
As seen in the panels of Figure A.5, the presence of retailers increased during the first wave of the virus in all sectors. In purchase transactions, their participation was more than 62% in all of them, reaching figures close to 75% in communications, materials and industrial goods (previously the participation was 49.9%, 71.3% and 70.9%, respectively). Particularly noteworthy is the increase in the healthcare sector, which went from 43.5% to 62.4%. In sales transactions, the participation of retail investors in the pre-crisis period was lower (around 52%). However, it increased very significantly in all sectors during the first wave (up to approximately 65%). Subsequently, in the de-escalation period and the second wave, the presence of retailers with respect to the total gradually decreased and, in fact, in the last period of the year it was lower than what was registered in the pre-crisis period (48.4% in purchase transactions and 44.9% in sales transactions, compared to 60.7% and 51.8%, respectively).

The information regarding the main demographic characteristics of the retail investors who trade with securities of this index reveals that a majority proportion of the volume traded with shares of the Ibex Growth Market 15 between 2019 and 2020 was carried out by men, around 85%, a higher proportion than in the analysis of the Ibex 35. In March 2020, during the first wave of the virus, this proportion increased to 87%, although then it fell and remained around 85% in the rest of the periods. However, this 87% presence of men in March 2020 was not the highest proportion observed, since in different months of 2019 percentages of up to 89% were recorded. Therefore, although the proportion of men operating with these values increased as a result of the COVID-19 crisis with respect to the 2020 average, it did not reach the maximum values of 2019.

Figure A.6, which shows the average age of investors by gender, reveals – as was the case with the Ibex 35 securities – that the average age of women is higher than of men throughout the entire period (on average there is a difference of five years). The average age of men is 48 in both 2019 and 2020, while the average age of women is 55 in 2019 and 52 in 2020. In the first months of the COVID-19 crisis (during the first wave), the average age of women remained relatively stable at around 53, while that of men decreased from February to March (from 49 to 48) and subsequently held steady. From then on, both displayed similar trends, with an increase in the average age in the last months of 2020. Therefore, with the values of this index, a decrease in the average age of retail investors as pronounced as in the case of the Ibex 35 is not observed.

Average age of retail investors

FIGURE A.6



Source: Transaction reporting. Compiled by the authors.

In relation to retail investors' median volume of transactions by age group, Figure A.7 shows that all the brackets except 18 to 34 follow similar trends, with significant increases between September 2019 and early 2020, falls until March and then a somewhat more irregular trend. The highest median volume per transaction was reached in February 2020 (€2,100 for those over 64 and around €1,900 for those 36 to 64), since although during the rest of the year advances and setbacks were observed those figures were not reached in any of the age groups. In addition, the largest trading volumes per transaction are not always among older investors, even if it is assumed that they have greater wealth and experience. In the pre-crisis period

this was true, but as of March 2020 the 50 to 64 year old and 36 to 49 year old age groups traded with larger median volumes per transaction than investors over 64. In fact, starting in July 2020, investors aged 36-49 traded larger median volumes per transaction. Finally, it should be noted that the median volume of transactions is significantly lower than that of trading with Ibex 35 securities in each age group.

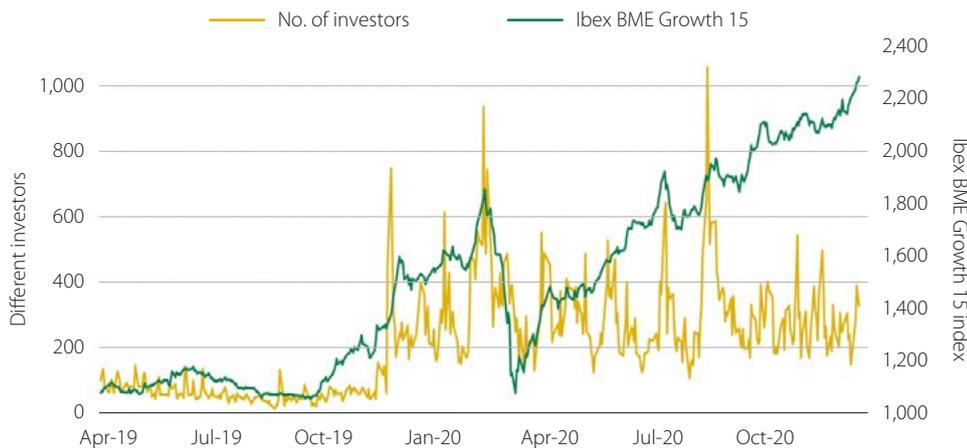


Finally, Figure A.8 compares the number of new daily investors with the quoted price of the Ibex Growth Market 15. It can be seen that starting in December 2019, the number of new investors was much greater than in the previous months of the year (on average, the number of new daily investors in 2019 is 65 and in December it is 288 new investors). In mid-February, a rebound in new investors was observed, coinciding with the beginning of the first wave of the virus: in fact, on 18 February, a first peak was reached with 941 new investors. Until that week, the stock market index registered revaluations and, later, when it began to fall, so did the number of new investors accessing the market (from week 9 of the year, 24 February), with which, once again, a different trend is observed in relation to the analysis of the Ibex 35.

At the end of August, during the de-escalation, a new maximum for the entire period was registered again in the number of new daily investors (1,061 on 25 August). Subsequently, in the second wave, the number of new daily investors shrank, with the number of people accessing the market for the first time standing at 275 on average.

Number of new investors in relation to the Ibex Growth Market 15

FIGURE A.8



Source: Transaction reporting. Compiled by the authors.

In general, and as it occurs in the case of retail investors who traded with Ibex 35 securities, certain differences are also observed between these new investors accessing the market who trade with the Ibex Growth Market 15 and the sample overall. In addition, these differences are similar between both indices.

First, the proportion of men trading these securities is lower than in the sample overall: 75% in 2020, compared to 85% in the sample overall. As in the case of the Ibex 35, the proportion of men who traded the securities of this index increased during the first months of the crisis. This proportion went from 72% in February 2020 to 79% and 80% in March and April. In addition, greater variations were observed in the gender of the new investors with respect to the total sample. For example, during the months of de-escalation, the proportion of men remained relatively stable around 72%, while in the second wave it fell to 55% and then increased again to 81%.

A reduction in the average age of the new investors is also observed with respect to the total sample during the first wave of the crisis to then in the de-escalation and the second wave experience slight variations that in general followed an upward trend. In the pre-crisis stage, the average age of new investors was 48 for men and 54 for women. In the first wave, these ages fell sharply to 44 and 50, respectively, and then rose again to 46 and 49 on average during the second wave.

In conclusion, both similarities and differences are observed between the evolution of retail investors' transactions with Ibex 35 and Ibex Growth Market 15 securities during the period studied. In both cases, trading by retail investors increased as a result of the COVID-19 crisis, although for the latter index this rise was observed a few weeks earlier. The peculiarities of this index in relation to the Ibex 35 commented at the beginning of the annex and its differential behaviour with respect to the trends in its quoted price (the Ibex Growth Market 15 recovered from the drops it experienced in March 2020 and appreciated 54.1% in value in the year compared to 2019) can explain at least part of this evolution.

