

# **Investor Behaviour and Investor Education in Times of Turmoil: Recommended Framework for Regulators based on Lessons Learned from the COVID-19 Pandemic**

## **Final Report**



**The Board  
OF THE  
INTERNATIONAL ORGANIZATION OF SECURITIES COMMISSIONS**

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## Executive Summary

Major events, such as the COVID-19 pandemic, can magnify or accelerate changes in retail investor behaviour, information sources, investment alternatives, and trading technologies. While some changes can be beneficial for retail investors, others can negatively affect investor protection and confidence in the markets, including around issues such as financial well-being and investment fraud. The COVID-19 pandemic has led to worldwide concerns in these areas.

In 2021, the IOSCO Board approved a project specification entitled *The Impact of COVID-19 on Investor Behaviour and Investor Education*, aimed at assisting IOSCO members in better understanding retail investor trends, vulnerabilities, and behaviours during periods of crisis. The project also sought to inform members about investor protection and educational measures, including fraud prevention.

The project followed the lines of the IOSCO 2021-2022 work program, as the IOSCO Board identified risks exacerbated by the COVID-19 pandemic as one of two new priorities and expressed its support for investor education as a critical pillar of investor protection.<sup>1</sup> The project was also informed by the report on “Initial Findings and Observations About the Impact of COVID-19” that was prepared by the Retail Market Conduct Task Force (RMCTF) in December 2020.<sup>2</sup> According to the project specification, the final deliverable would be a report that would identify sound investor protection and education practices for securities regulators to consider in a crisis situation. In this vein, this report provides:

- 1) A literature review conducted as well as insights from IOSCO members (notably obtained during an IOSCO-World Investor Week 2021 webinar) that found evidence of worldwide shifts in trading patterns and decisions, social media use, market participation, and volatility during COVID-19.
- 2) The results of a survey conducted among member regulators working on the development of this framework,<sup>3</sup> designed after the analysis of the literature review, on the types of measures implemented during the pandemic that helped protect retail investors (directly or indirectly). Findings from the survey strongly suggest that COVID-19 led to changes in investor behaviour, with a corresponding uptick in potential investor vulnerabilities.
- 3) Information on the measures regulators and investor educators took to increase retail investor protection during periods of extreme market volatility and economic turmoil.
- 4) Sound practices for retail investor protection and investor education based upon research carried out during the pandemic.

Investor education and regulatory measures play an important role in securities regulators’ efforts to protect investors and preserve market confidence in times of crisis. Investor education

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<sup>1</sup> See *IOSCO Board Priorities - Work Program 2021-2022*, 26 February 2021, page 2, available at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD673.pdf>

<sup>2</sup> *Initial Findings and Observations About the Impact of COVID-19 on Retail Market Conduct*, 22 December 2020, available at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD669.pdf>

<sup>3</sup> See the list of member regulators in Appendix C.

is one tool among several others available to regulators. Investor education is not meant to replace or substitute proper regulation, sound oversight, nor effective enforcement in relation to investor protection. Rather, investor education interacts with other tools available to regulators and can serve as a complement to the policies, oversight, and enforcement actions that regulators undertake to accomplish their mandates, including investor protection.<sup>4</sup>

In this context, IOSCO members, as observed through the measures taken by C8 members, have taken different actions to protect investors and enhance investor education during the COVID-19 pandemic. Most regulators introduced or modified educational programmes and/or investor protection measures to aid investors. However, findings suggest in many cases the regulators have yet to empirically evaluate the measures they introduced. Empirical evaluations are critical to understand the impact of educational measures and improve expected outcomes. It should be noted that evaluations require additional work and resources from regulators and their financial education departments. It takes time to find funding for research, develop the research design, collect, and analyze the data, and come up with the respective conclusions, so it is possible that empirical evaluations will be conducted in the future. Hence, while the assessment of the outcomes is not covered in this report, it is acknowledged that empirical evaluations may have potential benefits to continue improving both the measures and the expected outcomes.

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<sup>4</sup> A recent, large-scale meta-analysis examining 68 financial education initiatives across 33 different countries found financial education to be a cost-effective mechanism that, on average, increases knowledge and practical financial skills. See Kaiser, T., Lusardi, A., Menkhoff L., & Urban., C. (2022). “Financial education affects financial knowledge and downstream behaviors”, *Journal of Financial Economics*, 145(2, Part A), 255-272. <https://doi.org/10.1016/j.jfineco.2021.09.022>.

## 1. Introduction and Background

One of IOSCO's core objectives is to "enhance investor protection and promote investor confidence in the integrity of securities markets".<sup>5</sup> Protecting retail investors was a significant and urgent priority given the pre-existing or new challenges that the global COVID-19 pandemic exacerbated or introduced. This report highlights the research insights and experiences IOSCO members gained during the pandemic. It explores changes in investor behaviour during the pandemic and regulators' responses worldwide. Some lessons learned are documented to assist regulators in protecting investors during uncertain times, as they navigate future crises. This report complements other work at IOSCO, including the work undertaken by the Retail Market Conduct Task Force.<sup>6</sup>

### The Pre-pandemic Investing Environment

Prior to the COVID-19 pandemic, regulators were already aware of the difficult and complex decisions retail investors must make, often on their own, when choosing investments. Many individuals struggle with the complexity of investment decisions and may not fully appreciate the level of risk they are taking. For example, in the United Kingdom, 57% of adults report low financial capability or find it hard to find suitable financial products or services.<sup>7</sup> In the United States, investing knowledge, as measured by five questions in a 2020 survey conducted by the FINRA Foundation and the National Opinion Research Center (NORC) at the University of Chicago, is low for all groups, but particularly for first-time account openers, potentially leaving these newer investors unprepared to make sound investment decisions in their new accounts.<sup>8</sup>

Beyond knowledge, investment decisions can be influenced by other factors that were also present pre-pandemic. For example, both the way choices are presented and a host of well-established behavioural biases can negatively affect investment decisions. Although some of these potential biases could be addressed through investor education, addressing them in a more comprehensive way may require regulatory and supervisory action, thus making it clear that investor education outcomes are more likely to be achieved in a context of proper regulation and efficient oversight.

Digital Engagement Practices (DEPs), that is, tools that use data analytics, behavioral prompts, differential marketing, game-like features (commonly referred to as gamification), and/or other design elements or features to engage with retail investors on digital platforms can also materially affect investing outcomes for retail investors. Specifically, DEPs can hurt investors by creating or exacerbating conflicts of interest (e.g., investor best interest vs. optimizing

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<sup>5</sup> See *By-Laws of IOSCO*, page 2, available at [https://www.iosco.org/library/by\\_laws/pdf/IOSCO-By-Laws-Section-1-English.pdf](https://www.iosco.org/library/by_laws/pdf/IOSCO-By-Laws-Section-1-English.pdf)

<sup>6</sup> During the development of the project specifications and the draft report, the Committee 8 kept a close dialogue with and feedback from the RMCTF leadership, which was very useful for the C8 project.

<sup>7</sup> See UK FCA, *Financial Lives 2020 survey: the impact of coronavirus*, (11 February 2021), page 13, available at <https://www.fca.org.uk/publication/research/financial-lives-survey-2020.pdf> and <https://www.fca.org.uk/publications/research/financial-lives-2020-survey-impact-coronavirus>

<sup>8</sup> See *Investing 2020: New Accounts and the People Who Opened Them*, February 2021, available at [https://www.finrafoundation.org/sites/finrafoundation/files/investing-2020-new-accounts-and-the-people-who-opened-them\\_1\\_0.pdf](https://www.finrafoundation.org/sites/finrafoundation/files/investing-2020-new-accounts-and-the-people-who-opened-them_1_0.pdf)

revenue) and biases. For example, analytical data potentially reflects historical biases relating to protected characteristics like race and gender, and its use could perpetuate these biases. Well before COVID-19, regulators were already working to protect investors facing an array of complex investment choices and low levels of investment knowledge, as well as addressing financial services companies' use of behavioural biases to influence investor behavior, especially in cases that did not seem to benefit investors. However, the pandemic introduced new challenges and exacerbated some existing issues. Markets were inundated with new and sometimes naive investors fuelled, in part, by the ease of investing, lack of social activities, and the availability of stimulus funds to invest, as further explained in the next section below.

#### **INVESTOR EDUCATION IN ACTION**

##### *Digital marketing campaigns*

UK Financial Conduct Authority (FCA)

The FCA ran three digital campaigns via Google and Twitter warning consumers of high-risk investments. The aim of the campaigns was to disrupt the user journey investors take online by placing FCA advertising at key points in their investment journey.

The FCA plans to use a range of channels to reach audiences including partnerships with influencers, social media, online videos, paid ads on Google and more.

### **A Pandemic Begins**

Although the roots of COVID-19 date back to late 2019, it was not until February and March 2020 that financial markets throughout the world felt the impact of the pandemic. Between mid-February 2020 and late March 2020, the MSCI World Index fell 32%. Volatility continued in the ensuing months, but by the end of 2021 many indices were above their pre-pandemic levels.

This level of high market volatility attracted the attention of investors and non-investors alike. However, volatility was far from the only pandemic-related factor affecting interest in and perceptions about the markets. During the height of COVID-19, much of the world shut down,

#### **INVESTOR EDUCATION IN ACTION**

##### *Analysis of the portfolio composition of Mexican investors during COVID-19*

National Banking and Securities Commission (CNBV), Mexico  
Comparison 1Q2020 – 1Q2021

1. Retail investors between the ages of 18 and 39 hold 57% of their portfolio in investment funds, and 21% in domestic and foreign shares.
2. Retail investors over 40 years old hold 67% of their portfolio in investment funds and 11% in cash equivalent assets.

and many activities became inaccessible. While personal gatherings, travel, live sporting events, movies, shopping, and other communal activities were non-existent or severely curtailed, investing and trading remained widely available. Further, in addition to the extra money some people might have had as a result of not being able to spend

it on dining, travel and other communal activities, stimulus payments – which many countries granted to their citizens to replace lost income and job dislocation and meet existing debt repayment obligations – provided many with unexpected income or capital to use, including for making investments in the capital markets. These and other pandemic-related phenomena created both opportunities and pitfalls for investors. It became incumbent upon regulators to

quickly assess and respond to the situation, leading them to create and adapt tools to protect investors in new and unfamiliar environment.

The pandemic raised concerns about the vulnerability of investors across all age groups in an increasingly digitalized world, particularly in the context of physical social isolation, the continuing rise of social media, commission-free trading, and the ability to trade fractional shares in some jurisdictions. In short, the COVID-19 period has seen, among others:

- High levels of market volatility.
- More investors trading for themselves.
- An increase in gamification of investing.
- An increased reliance on social media for advice.
- An increase in fraud and scams.

As previously mentioned, many of these trends pre-dated the pandemic, but some appear to have been accelerated (or exacerbated) by the pandemic and will continue to be issues for investors well after the pandemic is over.<sup>9</sup> That said, it is worth noting that according to the RMCTF consultation report, the pandemic did not appear to slow down investor education efforts. In fact, many regulators reported that they continued, expanded, and/or adapted their investor education efforts throughout the pandemic and initiated research projects, which is very similar to what this report found and documents below.<sup>10</sup>

#### **INVESTOR EDUCATION IN ACTION**

*Exploring new ways to reach and educate new, self-directed retail investors*  
FINRA USA

On June 30, 2021, FINRA announced a multi-year, multi-faceted initiative to explore innovative ways to reach and educate investors, especially new, self-directed retail investors who conduct transactions through online accounts or using mobile apps. <https://www.finra.org/media-center/newsreleases/2021/finra-launches-educational-initiative-aimed-newer-investors>

Phase 1: FINRA and the FINRA Foundation issued a Special Notice soliciting input from firms, investors, investor advocates, academics and other stakeholders concerning effective ways to reach these new investors. Comments have been reviewed and are being used to inform the development of Phase 2 initiatives. <https://www.finra.org/rules-guidance/notices/special-notice-063021>

Phase 2: FINRA and the FINRA Foundation will launch a comprehensive program aimed at educating this rapidly growing segment of novice retail investors who are leveraging advancements in technology to enter U.S. securities markets.

### **Scope and Methodology of the Report**

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<sup>9</sup> See the IOSCO Report on Initial Findings and Observations About the Impact of COVID-19 on Retail Market Conduct, op. cit.

<sup>10</sup> See the IOSCO Retail Market Conduct Task Force Consultation Report, March 2022, <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD698.pdf>, page 36.



Considering the background described in the previous sections, and with a view to carry out the project, the Committee 8 made use of the sources of information indicated in the Executive Summary. Moreover, this report also builds on earlier work by IOSCO. For example, the work on behavioural biases related to investing (*IOSCO-OECD's Core Competencies Framework on Financial Literacy for Investors*),<sup>11</sup> and the use of online financial services (*Application of Behavioural Insights to Financial Literacy and Investor Education Programmes and Initiatives*).<sup>12</sup> The work was conducted in two phases.

### Project Approach

In phase 1 of the C8 work, the C8 examined existing academic and regulator-generated research and held a webinar on the Impact of COVID-19 (on 5 October 2021) during the IOSCO World Investor Week (WIW) campaign of 2021 to discuss the topic. In phase 2, the C8 conducted its own research by surveying its members.<sup>13</sup>

#### Phase 1 (Review of Academic and Regulatory Research and IOSCO WIW 2021 Webinar)

The C8 reviewed and summarised the insights from 64 research studies spanning 23 jurisdictions (Appendix A of this report provides further details), covering three different categories:

- Research carried out prior to the pandemic with relevant pre-pandemic investing information (e.g., the demographic characteristics of investors).
- Research carried out prior to the pandemic addressing issues and topics that became more relevant during the pandemic (e.g., gamification, isolation, social media).
- Research carried out during the pandemic<sup>14</sup> that looked at issues related to investing, investor behaviour, attitudes or beliefs, and investor protection.

The studies generally found shifts in market performance and in the behaviour, attitudes, and vulnerabilities of investors. Several studies reported pandemic-related volatility and an increase in trading volume. Investors' approaches and motivations varied across studies, but evidence of behavioural biases and interest in high-risk financial products, such as cryptocurrencies, was well-documented. Many studies reported marked increases in new investors, with some findings suggesting that FinTech innovations, increased free time, and reduced opportunity costs from many activities (such as gambling) during the pandemic may have facilitated stock-market participation. Notably, new investors tended to be younger, more racially and ethnically diverse, and with lower incomes than more traditional investors. While encouraging, other findings were troubling. New investors displayed lower financial and investing knowledge than more experienced counterparts. Among other findings, studies reported a rise in the influence of social media and a prevalence of scams during COVID-19.

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<sup>11</sup> <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD639.pdf>

<sup>12</sup> <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD626.pdf>

<sup>13</sup> Please see the list to C8 Working Group members at Appendix C of this report.

<sup>14</sup> Herein defined, for practical purposes, as beginning on January 1, 2020 (although it was declared to be a global pandemic by the World Health Organization (WHO) on 11 March, 2020 – see <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>).

The C8 also held a webinar, under the umbrella of IOSCO World Investor Week, on how to effectively educate a new generation of investors in a world marked by apps, gamification, social media, and behavioural change. The webinar allowed for discussion on this topic with other investor educators and consumer representatives and led to various insights (see the bullet points below) that helped the C8 to conclude that financial education must meet retail investors where they are—whether on traditional media or social media—and be presented in a simple, light, and digestible manner:<sup>15</sup>

- New investors are younger and more demographically diverse than their more experienced counterparts.
- The influx of new investors can be explained, in part, by the ease of opening investment accounts via mobile apps and the user-friendly nature of such apps. In addition, the availability of fractional shares in some jurisdictions enable new investors to invest with small amounts of money.
- Social media trading communities have grown in popularity, and many new investors rely on social media as their primary source of investing information.
- New investors tend to overestimate their knowledge and often lack in-depth knowledge of the stock market or the investment vehicles they are using.

### Phase 2 (Survey)

The C8 used the findings from the literature review to inform the development of a survey that was administered to C8 members (see Appendix B for full survey). The survey looked at changes in retail investment markets and investor behaviour, as well as educational and investor protection initiatives introduced by regulators. It examined whether regulators are mapping trends or changes in investor behaviour; regulators' perceptions of investors' reactions to the current crisis and whether it is possible to predict a shift in investor attitudes and behaviour; investor protection response measures during the pandemic to assist retail investors (whether direct or indirect); investor protection response measures taken during the pandemic to address pandemic-related fraud; and whether regulators customize their educational programmes in a crisis. The survey included both closed-ended and open-ended questions, which allowed the C8 to gain a nuanced understanding of the issues at hand.

## **2. Survey Findings**

This section presents a summary of the findings of the survey conducted by C8 across 31 members from 28 developed and emerging markets of the four Regional Committees of IOSCO.<sup>16</sup> This is complemented with the analysis made by C8 through the literature review.

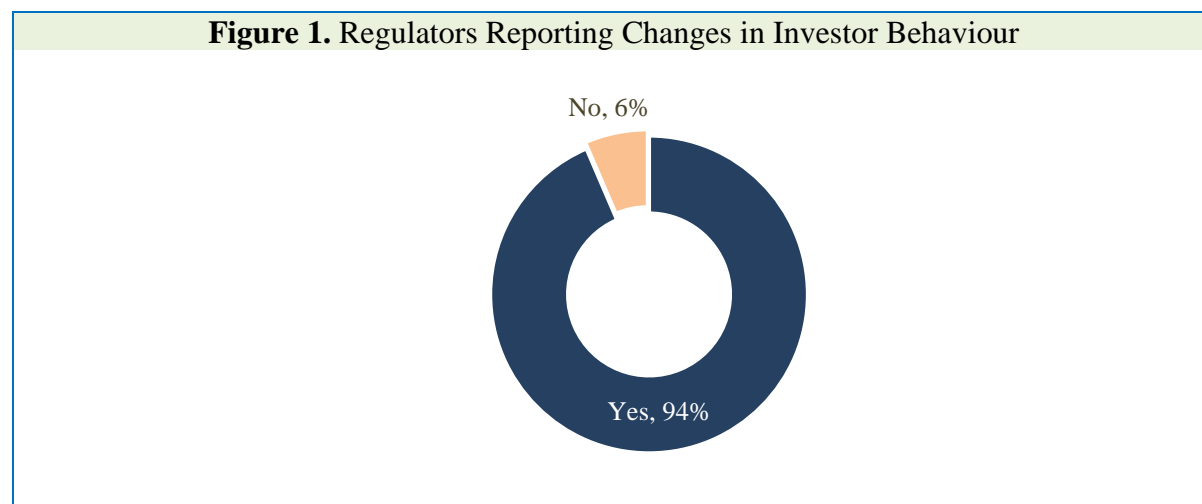
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<sup>15</sup> This webinar was hosted by the AMF Quebec. Speakers were from the World Federation of Exchanges, US FINRA, Hong Kong SFC-IFEC, Italy Consob, Ontario OSC, and FMA New Zealand. See *The Impact of COVID-19. The recent stock market frenzy: Is COVID-19 the only key factor driving it? How to effectively educate a new generation of investors in a world marked by apps, gamification, social media and behavioural change*, in the *World Investor Week 2021 Public Report*, 17 August 2022, page 339, available at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD710.pdf>

<sup>16</sup> Africa/Middle-East Regional Committee; Asia-Pacific Regional Committee; European Regional Committee; and Inter-American Regional Committee: Angola, Argentina, Australia, Belgium, France, Germany, Hong Kong, India, Indonesia, Italy, Japan, Jersey, Luxembourg, Malaysia, Mexico, Nigeria,

## Investor Behaviour

Nearly all regulators (94%) saw changes in investor behaviour during COVID-19. Notably, 77% agreed or strongly agreed that changes in attitudes and behaviours during COVID-19 will endure post-pandemic.



New Investors and Trading Volume: Most regulators (86%) reported an influx of new retail investors and trading activity. Many noted that new account openings were partially driven by a new generation of younger investors, who recently joined the markets.

Investing Decisions and Products: Most regulators saw that trading behaviours (79%) and/or investing decisions (66%) had also shifted. In their comments, many regulators said investors became more interested in self-directed investing during the COVID-19 crisis. Others saw an appetite for low-fee and user-friendly online trading platforms. Some reported that investors had more free time and were looking for potentially higher returns as an alternative to low interest rates. And, while unclear how much of it can be attributed to COVID-19, many regulators saw a rise in crypto trading.

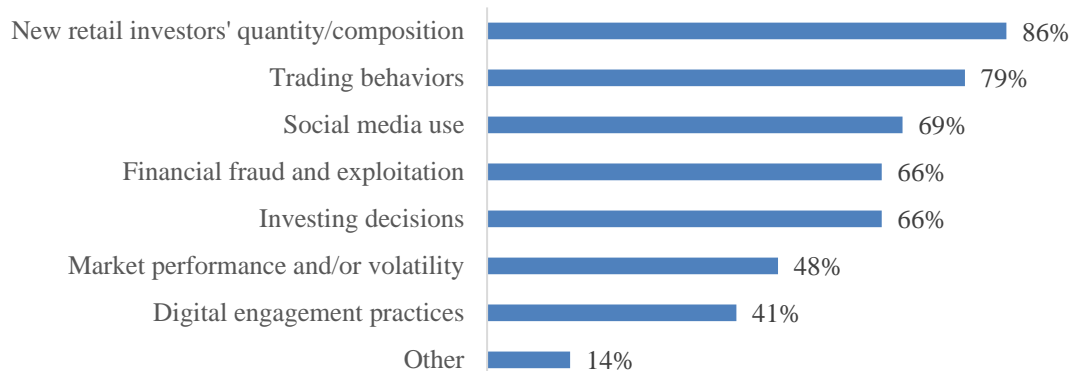
Social Media Use: The relevance of social media also increased. About 69% of regulators observed changes in social media use, with many reporting that it has gained popularity as an information source, particularly among young investors. This has raised both concerns and opportunities. While its use can lead investors to rely on information sources that may lack reliability and pursue riskier and unsuitable investments, social media opens possibilities for regulators to distribute information through a new and far-reaching medium that is used by many retail investors.

Financial Fraud: The search for high returns may have also led some investors on a path to fraudulent investments. Simultaneously, it is likely that fraudsters saw the influx of new and potentially naive investors, some of whom may have been socially isolated, as very attractive targets. Nearly 66% of regulators reported an increase in financial fraud and exploitation, and many regulators saw an increase in investor complaints.

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Ontario, Portugal, Quebec, Romania, Singapore, Spain, Sri Lanka, Sweden, Chinese Taipei, Thailand, United Kingdom, and the United States of America.

**Figure 2. Regulators' Observed Changes during the COVID-19 Crisis**



### 3. Educational Programmes during COVID-19

While some aims differed, according to the above-mentioned survey among C8 members, most regulators (87%) used educational programmes to address COVID-19 related changes. Likely due to pandemic-related restrictions, a large number increased online seminars to replace in person offerings. Many added informational content on their websites about government support and relief and on financial resilience and planning during difficult times. One regulator set up a COVID-19 consultation line.

Social Media Use: During the early waves of COVID-19, various regulators allocated additional budget and efforts to increasing their presence on social and conventional media (e.g., TV advertisements). Some developed social media campaigns in response to events, such as the GameStop phenomenon.

#### **INVESTOR EDUCATION IN ACTION**

*A Multi-pronged approach to investor education*

Financial Supervisory Commission (FSC), Chinese Taipei

The Taiwan Stock Exchange (TWSE), Taipei Exchange (TPEX) and Taiwan Futures Exchange (TAIFEX) launched a learning website to provide investors with educational programs during the pandemic. This website contains different types of learning resources, including comics, leaflets, videos and new products/measures information.

[https://investoredu.twse.com.tw/Pages/TWSE.aspx#gsc.tab=0%20%20https://dsp.tpex.org.tw/web/event/home\\_edu/intro.php](https://investoredu.twse.com.tw/Pages/TWSE.aspx#gsc.tab=0%20%20https://dsp.tpex.org.tw/web/event/home_edu/intro.php)

Risk and Return Relationship: Worried about the risky nature of portfolios of some young investors, some regulators provided information about the relationship between risk and return, market volatility and cryptocurrencies. In fact, 89% of educational programmes addressed the risk-return relationship. Relatedly, other topics targeted by education programmes included

those to help discern between reliable and unreliable information sources (85%) and on specific investment products (81%).

### **INVESTOR EDUCATION IN ACTION**

*A multimedia campaign promoting prudent investment attitude*

Investor and Financial Education Council (IFEC), Hong Kong, China

In light of younger investors participating in the stock market during the COVID-19 pandemic, the IFEC launched a public awareness campaign themed “*Cultivate Good Investment Attitude*” during World Investor Week 2021 to reinforce the importance of sound fundamental investment principles through a series of webinars, short video clips promoted via multiple channels targeting young investors.

<https://www.ifec.org.hk/web/en/other-resources/activities-and-events/world-investor-week-2021.page>

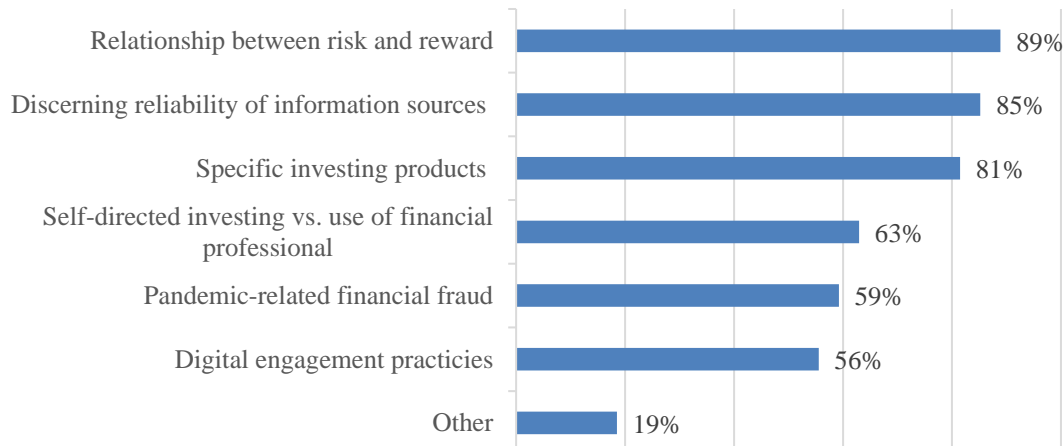
**Financial Fraud:** About 59% of programmes addressed pandemic-related fraud. Alerts on COVID-19-related scams were common, with some regulators alerting consumers about “too good to be true” investments.

**Image 1.** Pandemic-related Fraud Warnings



*Note:* AMF Quebec, AMF France and CNMV Spain have taken inspiration from strong symbols of the pandemic to alert investors on COVID-19-related fraud.

**Figure 3.** Focus of Educational Programmes During COVID-19



### **INVESTOR EDUCATION IN ACTION**

*Responding to increased interest in self-directed investing:*  
AMF Quebec (AMFQ)

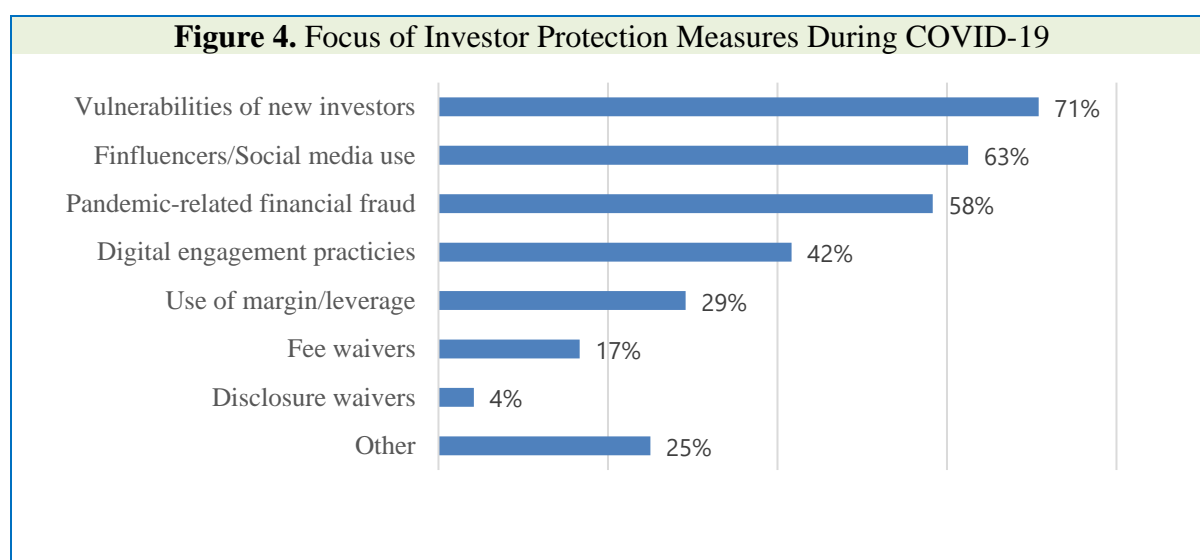
AMFQ redesigned the “Investing on your own” section on its website.<sup>17</sup> An increase of self-directed investors during the COVID-19 lockdown prompted a need for new content and a stronger than usual stance on the risks involved. The updated section includes a page cautioning novice investors about knowledge, time and risk tolerance requirements. Other sections are aimed at helping investors understand basic information to understand financial statements and ratios. The target groups for these additions on the website are Generation Z and millennials (ages 18-40), and potentially tech savvy but novice investors. Moreover, the AMFQ also offered its new webinar “Investing on your own: beware of costly mistakes” twice during the 2020 IOSCO-World Investor Week (October is Investor Education Month in Canada). The webinar covered more specifically the risks of trying to time the market. The target group for this webinar was novice self-directed investors.

Evaluation of Educational Programmes: While many regulators implemented educational programmes during COVID-19, fewer than half (44%) had evaluated their effectiveness at the time of this report. However, 25% were planning to do so. Evaluation techniques varied widely. However, most regulators relied on surveys that assessed investors’ attitudes and behaviours. User feedback, and educational surveys assessing pre and post campaign perceptions were also cited. Social media campaigns were generally evaluated using web indicators – including impressions, reach, engagement, and website traffic. Some evaluated the reaction on social media accounts. Many webinars and seminars used satisfaction surveys to assess people’s engagement. One regulator noted an interest in conducting a randomized-control trial to evaluate their program, arguably the most stringent method for assessing program effectiveness.

<sup>17</sup> See *Investing on your own in the stock market: It’s not for novices!*, available at <https://lautorite.qc.ca/en/general-public/investments/investing-on-your-own-its-not-for-novices>

## 4. Investor Protection Measures

According to the survey conducted among C8 members, many regulators (77%) implemented investor protection measures during COVID-19. However, it is unclear which initiatives were enacted in response to the pandemic and which simply coincided with COVID-19. In addition, the line between investor protection measures and educational programming was often blurred. Education, regulatory policy, supervision, and enforcement are not mutually exclusive, and can complement each other for more robust investor protection. For example, regulators can use awareness campaigns to educate people about a certain product, while introducing restrictions on how it is marketed, enhancing the licensing requirements for those selling it, requiring investors wanting to use it to pass a knowledge test on the product and enhancing the product disclosure requirements for it. While protection measures covered several major areas (presented below in more detail), regulators' primary focus involved addressing vulnerabilities of new investors (71%).



**Market Monitoring and Restrictions:** In response to increased market volatility, three regulators introduced bans on short selling as a means of protecting investors. Other efforts included changes in margin requirements in the futures markets, increased market monitoring and supervision. In one jurisdiction, exchanges introduced supervisory technology to improve market surveillance, and the regulator added monitoring and analysis of social media discussion.

**Social Media Activity and Digital Engagement Practices:** Some regulators (63%) enacted measures against social media activity, particularly targeting influencers giving “investment advice” (i.e., “finfluencers”) without a license to do so. Some issued guidance on when social media activity can be considered a form of recommendation or advice and trigger obligations under securities legislation. In one case, this measure was combined with an informational social media campaign explaining differences between general and personal advice, choosing and working with a financial adviser, and relying on official and impartial information sources. Although less common, 42% of regulators targeted digital engagement practices more broadly, including the use of gamification, nudges/notifications, and design features. One organization

disclosed plans to reduce potential harm to retail investors by continuing work on social media influencers or combining this with other work looking at wider digital engagement practices.<sup>18</sup>

### **INVESTOR EDUCATION IN ACTION**

*Responding to new risks (crypto-assets and influencers)*

CNMV, Spain

In January 2022, the Spanish Securities Commission (CNMV) published a [Circular on the advertising of crypto-assets for investment purposes](#), which establishes the rules, principles, and criteria for this advertising activity. The Circular is applicable to crypto-asset service providers when they carry on these advertising activities, to advertising service providers, and to any other natural or legal persons who carry on such activity on their own initiative or on behalf of third parties. These include natural persons paid to advertise and promote crypto-assets (products or services promoted via influencers).

The aim is to ensure that the advertising of the products offers true, understandable, and not misleading content, and includes a prominent warning of the associated risks. This is particularly relevant in the field of crypto-assets as the absence of a complete regulation is a challenge for investor protection. To this end, it defines the scope, specifies the advertising activity that must be subject to a prior communication regime and establishes the tools and procedures to be used to make the supervision of the crypto-asset advertising activity effective.

The Circular establishes that the advertising of crypto-assets must be clear, balanced, and fair, and the messages shall provide information on the risks of the product which is easily understandable and visible. Specifically, the following warning must be included: *“Investments in crypto-assets are not regulated. They may not be appropriate for retail investors and the full amount invested may be lost”*. In addition, links or indications to access further information shall be included, with expressions such as, *“It is important to read and understand the risks of this investment, which are explained in detail at this link”*.

The Circular defines the way in which the CNMV shall supervise and establishes a mandatory prior communication regime for mass advertising campaigns addressed to 100,000 people or more, which must be communicated to the CNMV at least ten days in advance. The remaining promotional activities shall also be subject to the supervisory action of the CNMV, but prior notice shall not be required.

[https://cnmv.es/DocPortal/Legislacion/Circulares/Circular\\_1\\_2022\\_EN.pdf](https://cnmv.es/DocPortal/Legislacion/Circulares/Circular_1_2022_EN.pdf)

### **INVESTOR EDUCATION IN ACTION**

*Responding to novel trends (social media influencers)*

ASIC, Australia

In March 2022, the Australian Securities and Investments Commission (ASIC) released an information sheet (INFO 269) outlining how the law applies to social media influencers who discuss financial products and services online (*“It is your responsibility to ensure that any content you post complies with the law”*), and the licensees who use those social media

<sup>18</sup> See <https://www.euronews.com/next/2022/01/17/spain-moves-to-regulate-crypto-asset-advertising-including-promotions-by-influencers>



influencers (“*You should be aware of your obligations as you may also be liable for any misconduct by the influencer*”).

<https://asic.gov.au/regulatory-resources/financial-services/giving-financial-product-advice/discussing-financial-products-and-services-online/>

### **INVESTOR EDUCATION IN ACTION**

*A game based on...gamification*

CONSOB, Italy

In January 2020, CONSOB introduced “App... prendimento”, a game developed in collaboration with the University of Trento for high school and university students. The game allows potential investors to simulate an investment path and understand which cognitive and behavioural errors (the so-called traps) can influence the choices of investors, jeopardizing the desired outcome. The game is used in webinars or in person classrooms. The game concludes with a debriefing on the results obtained by the audience.

**Restrictions and Disclosures on Investing Products:** Many regulators acted on retail investors’ increased interest in risky investment products during the pandemic. Some enacted regulations against contracts for difference (CFDs) and binary options, bans on the sale of crypto-derivatives to retail investors, and bans on the marketing of speculative illiquid securities (including speculative mini-bonds). Others increased regulatory requirements, such as a knowledge test for retail investors who want to open crypto-assets trading accounts. There were also increased requirements implemented for advertisements, promotional materials, and disclosures. One organization strengthened obligations for advertisements related to leveraged and inverse exchange-traded funds (ETFs) to ensure investors are made fully aware of the risk differences in between these ETFs and general ETFs. Another established new rules to raise the standard of digital asset advertisements. One regulator consulted with internal experts on behavioural economics and design units to strengthen its rules on financial promotions for high-risk investments, including crypto assets.

Further, some regulators established enhanced disclosures on newer forms of investments, including additional requirements for crypto-asset businesses and ESG investment funds. One regulator is proposing a new “Key Information Sheet,” which summarizes important product information and allows investors to understand and compare products more easily. Following customer complaints related to certain products, one regulator introduced new methods for member firms to check the sufficiency of the framework their company uses to explain structured products to retail investors, such as structured bonds.

### **INVESTOR EDUCATION IN ACTION**

*Responding to new risks (greenwashing)*

ASIC, Australia

The Australian Securities and Investments Commission (ASIC) has supported consumer messaging relating to greenwashing/ESG investing (through social media and Moneysmart content).

<https://moneysmart.gov.au/>

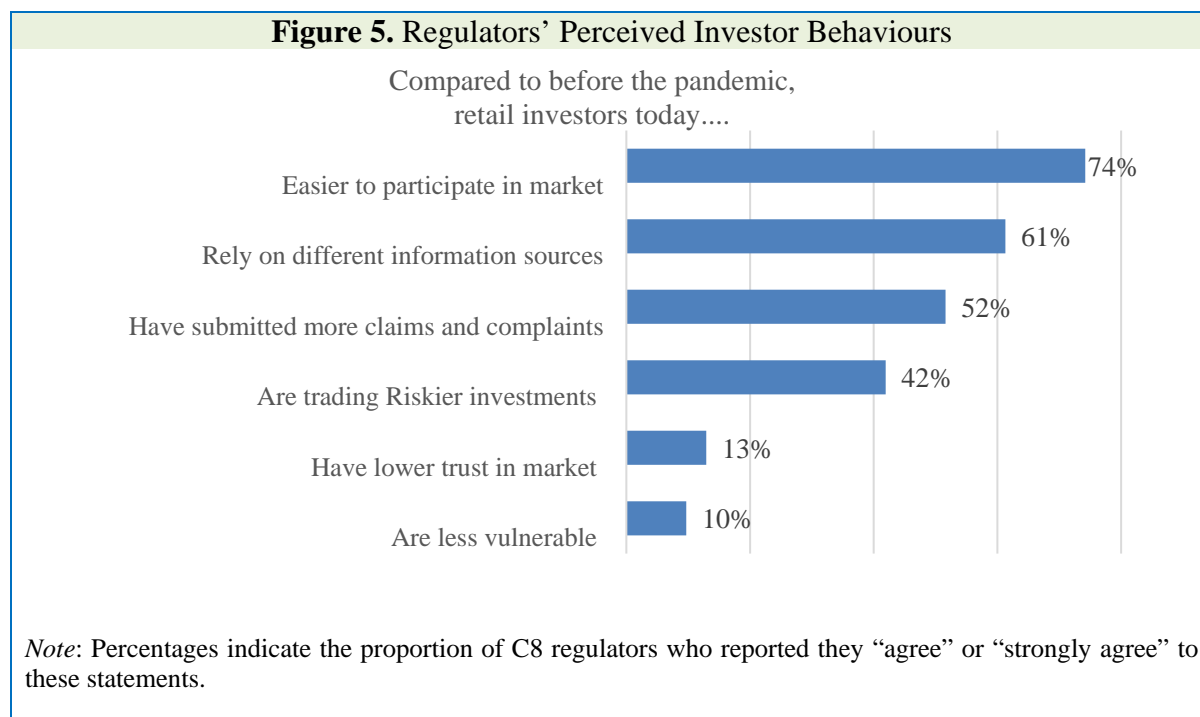
**Fraud:** More than half (58%) of regulators enacted measures to combat financial fraud and exploitation. One regulator reported working with public and private institutions to develop an

Action Plan Against Financial Fraud (APAFF) to detect fraud in new consumer and investment practices related to heavy technology use, social media influence, and popularity of markets.

Evaluation of Investor Protection Measures: Although very few regulators who implemented protection measures had evaluated these measures at the time of data collection (17%), a quarter (25%) had plans to test their effectiveness. Among those who had evaluated protection measures, one regulator reported carrying out a study to examine the effect of their short-selling ban. The findings suggested the ban had mixed effects. Another regulator evaluated the effectiveness of bans on the marketing of speculative illiquid securities through detailed data gathering. The regulator found it to be effective in reducing risk to retail clients.

## 5. Beyond the Pandemic

Looking forward, enacting high-quality measures aiming at protecting investors and enhancing investors education is critical given the regulators’ outlook. An overwhelming majority (78%) of C8 regulators expect the changes observed during the pandemic to endure. More than two in five (42%) think retail investors are trading riskier investments than before COVID-19, and 52% report receiving a higher volume of investor claims and complaints. Only 10% believe investors are less vulnerable than they were before the pandemic. These patterns are particularly problematic given 74% of C8 regulators observe that it is easier to participate in the financial market today than ever before.



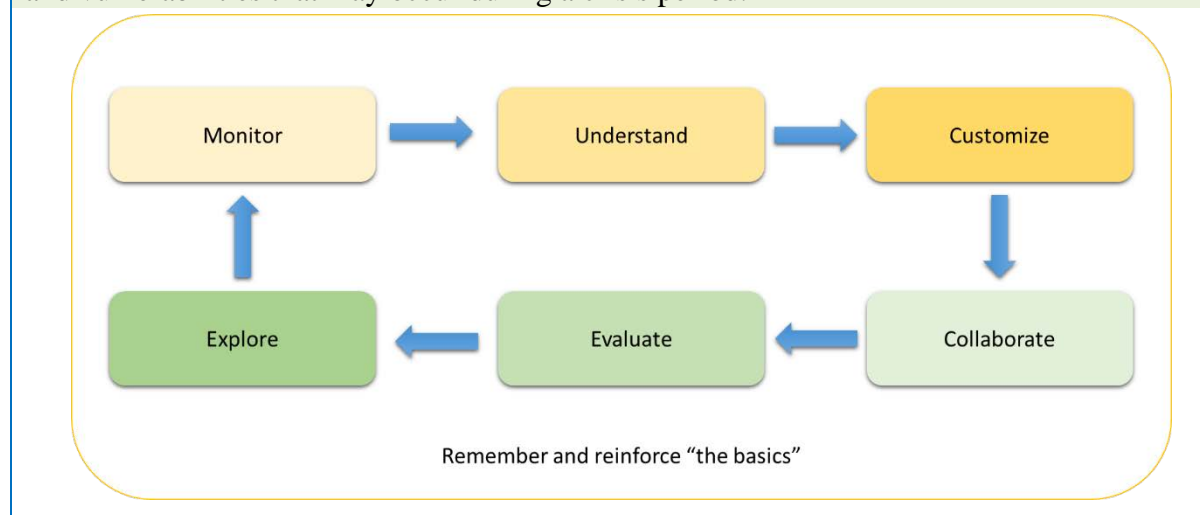
## 6. Recommended Framework for Regulators. Sound Practices and Measures: Investor Education and Investor Protection during Periods of Crisis<sup>19</sup>

Using insights gained from the COVID-19 pandemic and findings of the survey conducted among C8 members, the literature review, the WIW global webinar, and the contribution of C8 to the RMCTF work as a guideline, the report includes the following recommended framework for regulators to use in designing financial education and investor protection initiatives with a view to mitigate and address retail investor risks and vulnerabilities that may occur during a crisis period (see Figure 6 and 7 below).

As a general principle, it is noted that successful approaches are likely to combine a range of tools in their efforts to improve outcomes for retail investors. A focus solely on one aspect, such as improving investor knowledge, will not be enough to effectively address the other challenges they face.

It is noted that investor education is one tool among others available to regulators. Investor education is not meant to replace or substitute proper regulation, sound oversight, nor effective enforcement. Rather, financial education interacts and complements the policies, oversight, and enforcement actions that regulators undertake to accomplish their mandates, including investor protection. Indeed, the pandemic has provided a real case of a “situational vulnerability” in which, in addition to financial education and investors actions, regulatory focus on the supply side (e.g., firms and markets) is also required to support investor protection and confidence in the market.

**Figure 6.** Recommended framework for regulators to use in designing financial education and investor protection initiatives with a view to mitigate and address retail investor risks and vulnerabilities that may occur during a crisis period.



### Regulators should consider the following sound practices:

1. *Monitor.* Identify current patterns and emerging trends. Regulators should have (and/or develop) the tools and metrics needed to monitor deviations from typical investing and/or

<sup>19</sup> The framework is worded intentionally broadly to provide regulators flexibility in implementing the sound practices in a manner that best suits their needs, mandates and authorities, and regulatory structure.

trading patterns during crisis periods. These deviations can provide insights to investor-related risks and can inform concrete alerts and messages. Regulators should also monitor retail investors' complaints and queries as these may provide early indications of emerging issues that investors are facing.

**Regulators' Response: Example**

AMF France

The *Active Retail Investor Dashboard* created by AMF France provides quarterly updates on individuals who have carried out at least one transaction on financial instruments in the past three months.

<https://www.amf-france.org/en/news-publications/publications/household-savings-observatory/active-retail-investors-dashboard>

2. *Understand*. Learn about their target audience and identify particularly vulnerable segments. Understanding the characteristics, behaviors, attitudes, knowledge, and preferences of investors is necessary for implementing effective education and investor protection measures. Messaging only works if it reaches the intended audience in ways that are appropriate and salient to the target population. Regulators should consider conducting research to ensure they understand investors and can develop solid and successful financial education initiatives.

**Regulators' Response: Example**

Australian Securities and Investments Commission (ASIC)

ASIC has released Report 735 Retail investor research (REP 735) capturing retail investor motivations, attitudes, and behaviours in the period following the onset of the COVID-19 pandemic. The research has been informing ASIC's work in the retail sector, including changing practices in retail product design and distribution, investor protection strategies, and crypto-assets.

<https://download.asic.gov.au/media/z1nj5m5e/rep735-published-11-august-2022.pdf>;  
<https://asic.gov.au/about-asic/news-centre/find-a-media-release/2022-releases/22-215mr-asic-releases-research-about-investment-behaviour/>

**Regulators' Response: Example**

FINRA Investor Education Foundation, United States

To better understand the investing knowledge, attitudes, and behaviors of new investors who joined the market during the pandemic, the FINRA Foundation conducted a survey-based research study in 2020 in collaboration with NORC at the University of Chicago. The report, *Investing 2020: New Accounts and the People Who Opened Them*, was published in early 2021. A newer survey to explore current knowledge, attitudes, and behaviors is currently in the field as of September 2022.

[https://www.finrafoundation.org/sites/finrafoundation/files/investing-2020-new-accounts-and-the-people-who-opened-them\\_1\\_0.pdf](https://www.finrafoundation.org/sites/finrafoundation/files/investing-2020-new-accounts-and-the-people-who-opened-them_1_0.pdf)

3. *Customize*. Based on the understanding of the investor base, create targeted communications and investor protection measures that are informed by research and

specific to the needs of different sub-populations. The content and form of communications can vary by characteristics of the targeted audience (e.g., age, gender, race/ethnicity, and investing experience). Regulators should consider using simple and clear language when delivering concrete messages to retail investors and the general public (e.g., be empathetic and consider the tone of their messaging).

**Regulators' Response: Example**

AMF Quebec (AMFQ)

In response to a rise in crypto fraud attempts reported to AMFQ and an influx of calls from both younger and more mature investors to the jurisdiction, AMFQ created two customized public awareness campaigns that targeted content and delivery channels to specific audiences. For younger audiences, TikTok and YouTube campaigns providing information on fraud, high volatility, and the risks associated with the acquisition of crypto featured short-form content, humor, emojis and video messages.

To reach older audiences, AMFQ launched a public awareness campaign on crypto fraud prevention that encouraged investors to be vigilant and provided education on the red flags of fraudulent investments. The content was disseminated through radio, Facebook\*, a major newspaper, and via advertisements on various websites for six weeks.

\* <https://www.facebook.com/Autoritedesmarchesfinanciers>

**Regulators' Response: Example**

Japan Securities Dealers Association (JSDA)

In order to assist in the prevention of investment fraud, the JSDA (a self-regulatory organization, SRO) has been providing different content with specific fraud cases by age group to alert the respective sub-groups of investors.

4. *Collaborate*. Consider a “combined effort” that does not silo financial/investor education and core areas of the regulator. These two courses of action can work together to address some topics of interest or areas of concern, including investor protection-related issues. Within their own organizations, regulators should find collaborative opportunities between their financial education and their policy, oversight and enforcement departments. Outside their organization, developing new collaborations with other sectoral regulatory agencies (e.g., banking prudential regulators, insurance regulators, pension fund regulators, or consumer protection agencies) may also be helpful, and, where appropriate, collaboration with industry associations may also be considered.

**Regulators' Response: Example**

FCA UK

In the U.K., the *Digital Regulators Cooperation Forum* (DRCF) brings together the FCA and other sector regulators, such as the telecoms and media and competition regulators to identify and address issues that transcend industries on online regulatory matters.

<https://www.gov.uk/government/collections/the-digital-regulation-cooperation-forum>

**Regulators' Response: Example**

Japan Securities Dealers Association (JSDA)

In December 2021, the JSDA signed a Memorandum of Understanding (MOU) with the Japanese Bankers Association (JBA) on financial and economic education (mainly for working people), to collaborate on cross-industry activities going forward. The securities industry has been working jointly by holding seminars for spreading securities knowledge and working on projects at nationwide stock exchanges, the Investment Trust Association of Japan, and the JSDA.

**Regulators' Response: Example**

SFC - Investor and Financial Education Council (IFEC), Hong Kong, China

In March 2022, the IFEC collaborated with financial regulators, government departments, major financial institutions and industry bodies to encourage investors to “Invest in Yourself” to gain financial knowledge to be better prepared for the post-pandemic era. Apart from a TV commercial with media campaign, a total of 75 organisations across different sectors joint hands to provide free investor and financial education activities for various segments.

<https://moneymonth.hk/en/general-public/event-list.html>

5. *Evaluate*. Evaluate the effectiveness of any educational program/initiative and protection measures implemented. In crisis periods, regulators may need to enact programmes and/or measures before formally evaluating them to swiftly address issues. However, measures can be evaluated post-implementation, for instance, through survey research or administrative data collected by regulators, including the number of complaints, calls, or the level of enforcement activity. Timely evaluations of such programmes and measures can provide helpful insights into what does and does not work when regulators face new and challenging crises. Importantly, the educational programs and protection measures can be adapted or be improved based on what is learned from the evaluation so that future efforts are more impactful.

**Regulators' Response:**

Autorité des marchés financiers (AMF) France and the Dutch Authority for the Financial Markets (AFM) Netherlands

Following the COVID-19 pandemic lockdowns, some European regulators imposed a temporary ban on short selling (e.g., the AMF France), while others did not (e.g., AFM Netherlands). To evaluate the effects of the ban on returns, trading volume and transaction costs, AMF and AFM conducted a joint study comparing the French and Dutch Markets. The study, *Short Selling Ban Impact – A Comparison of the French and the Dutch Markets*, indicated that the short selling ban had mixed effects.

<https://www.amf-france.org/en/news-publications/news-releases/amf-news-releases/french-and-dutch-market-authorities-publish-joint-analysis-impact-short-selling-ban-onset-covid-19>

6. *Explore.* Explore new and different channels, formats, platforms, and messengers to reach a broader pool of investors (including younger generations). Regulators may need to be bold with their communication strategies, depending on the nature of the crisis. Strategically adapting to and communicating through a digital environment is essential.

**Regulators' Response: Example**

Ontario Securities Commission (OSC)

In response to the GameStop phenomenon – which was heavily propagated through social media – the OSC's Investor Office Branch developed innovative initiatives, including social media campaigns, to educate investors and, in particular, young investors. Over the course of two years, OSC created three Reddit posts campaigns that informed investors about the risks of using social media for investing information and the need to check registration status to avoid receiving guidance from unregistered individuals. The OSC used Reddit-style language and imagery in its posts.

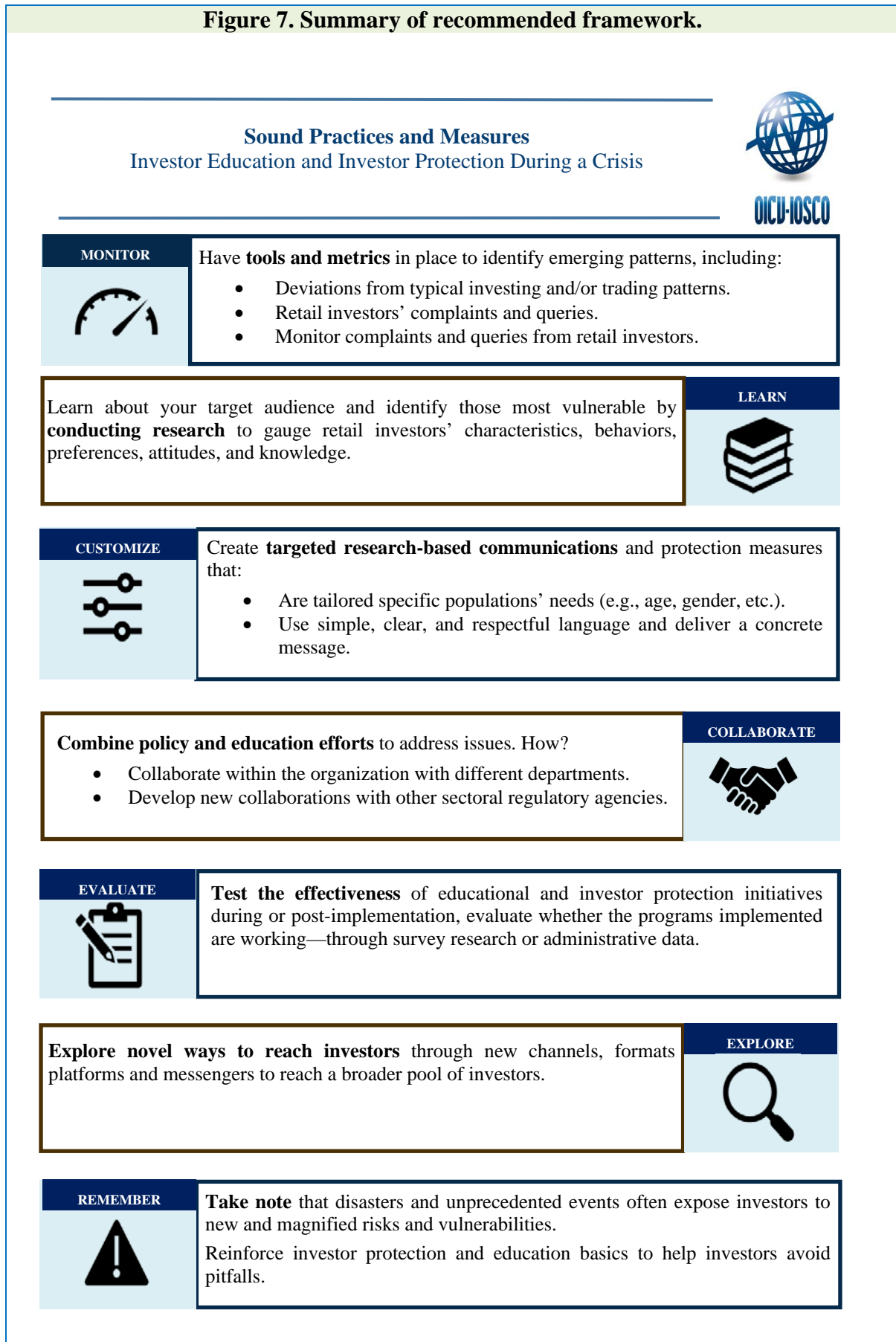
7. *Remember.* Human-caused and natural disasters and unprecedented events like COVID-19 often lead to new (and/or exacerbate pre-existing) risks or vulnerabilities to which investors (current and prospective) might be exposed. However, keeping in mind (and reinforcing) some “basics” of investor protection and investor education can help identify, understand, and react to those risks or vulnerabilities arising from a crisis, including, for example, financial fraud, among many others referred to in this report.

**Regulators' Response: Example**

Japan Securities Dealers Association (JSDA)

In December 2021, the JSDA created and provided online investment simulation tools to enable users to reproduce the actual price movements of financial instruments across the past 20 years, by category, for them to experience investment simulation based on actual price movements. The JSDA's intent is to raise public awareness on the fact that various social and other events can have significant impact on stock prices and financial products.

**Figure 7. Summary of recommended framework.**





## Appendix A—Literature Review

This note provides a high-level summary/synthesis of the 64 research studies spanning 23 jurisdictions that were identified during the literature review.

The C8 developed and used the following criteria to identify relevant research for the literature review.

- A. Research conducted during the pandemic (herein defined as beginning on January 1, 2020) addressing issues related to investing, investor behavior, attitudes or beliefs, and investor protection
- B. Research conducted prior to the pandemic containing relevant pre-pandemic investing information (e.g., the demographic characteristics of investors)
- C. Research conducted prior to the pandemic addressing issues and topics that became more relevant during the pandemic (e.g., gamification, isolation, social media)

The studies were grouped in 8 categories, which can be seen in Table 1. A high-level summary of each topic is below, though it is important to note that the research studies identified by C8 contain details and information that go far beyond this summary.

*Table 1*

Topic	Count
Trading	13
Investment Decisions	11
Multifaceted	10
Market Performance	8
New Investors	7
Financial Fraud	6
Market Participation	5
Social Media	4
<b>Total</b>	<b>64</b>

### *Trading*

The most common topic addressed was trading. In general, studies that examined trends in trading found large increases in trading volume during the pandemic.<sup>i,ii,iii,iv,v</sup> Some studies dove into very specific research questions on this topic. For example, a study conducted in Pakistan found trading was motivated by several factors, including the desire to get rich quickly, loss aversion, and gut feelings on the economy.<sup>vi</sup> Two studies indicated that culture played a role in trading volume, with larger market declines and greater volatility found in cultures with lower levels of individualism and trust and higher levels of uncertainty avoidance.<sup>vii,viii</sup>

The research suggests that most investors were aware of the pandemic-related market volatility,<sup>ix</sup> though the way investors responded to this volatility varied quite a bit. A study in India found that investors were more inclined towards investments that offer liquidity and good returns because the lockdown impacted the financial stability of many investors.<sup>x</sup> Other studies – particularly those examining well-developed markets (e.g., Belgium, Germany) saw that investors increased their equity positions during the pandemic, suggesting a contrarian strategy.<sup>xi,xii</sup> However, a U.S. study found the typical flight to safety effect, similar to those

observed during other (financial) crises was also evident during the COVID-19 crisis.<sup>xiii</sup> Both momentum and contrarian strategies were used by Robinhood investors, with retail investors reducing momentum trading and increasing contrarian trading activity during the initial phase of this pandemic.<sup>xiv</sup>

### *Investment Decisions*

Some studies examined if and how behavioral biases may have impacted investment decisions during the pandemic. Herding, hindsight, overconfidence, representativeness, and anchoring can influence trading activity, albeit to varying degrees.<sup>xv,xvi,xvii</sup>

### *New Investors*

Many studies reported marked increases in new investors.<sup>xviii,xix,xx</sup> For example, AMF France reported 150,000 new investors in a six-week period of heightened market volatility.

One study found that access to financial markets facilitated by FinTech innovations to trading platforms, along with ample free time, are significant determinants of retail-investor stock-market participation.<sup>xxi</sup> Reduced opportunity costs resulting from the limitation of many activities (e.g., betting) during the pandemic was a factor as well.

Do the new investors have the financial literacy and investing knowledge to make informed and effective investment decisions? One study found that investing knowledge of all investors was low, but the investing knowledge of new investors was incredibly low.<sup>xxii</sup> A report by CONSOB Italy also found low levels of financial knowledge among new investors but noted a slight upwards trend in knowledge occurring over the past two years.<sup>xxiii</sup> However, a study of Robinhood investors found that new investors display high financial literacy, and they score high on measures of investor literacy as well, relative to all investors.<sup>xxiv</sup>

From a demographic perspective, one study found that new investors were younger, had lower incomes, and were more racially diverse than existing investors. They also held smaller balances. A study by the FCA UK yielded similar results for self-directed investors. These investors were found to skew more female, younger, and more Black, Asian, and minority ethnic (BAME).<sup>xxv</sup>

Finally, the large influx of new investors is prompting heightened legislative and regulatory scrutiny related to consumer protection.

### *Financial Fraud*

While the studies related to financial fraud did not all specifically address COVID-19-related investment fraud, the findings can be generalized and applied to our understanding of investment fraud tied to the pandemic. An FCA UK report found that nearly half of adults experienced an unsolicited, and potentially fraudulent, approach about investments, pensions, and retirement planning during the pandemic<sup>xxvi</sup>. COVID-19 related scams were prevalent, with two studies indicating that more than one-third of respondents reported being contacted by promoters of a COVID-related fraud.<sup>xxvii</sup> However, the instance of COVID-19-related scams was low in some jurisdictions. For example, the OSC Ontario found that only 6% of Canadians reported being approached by an investment opportunity promising high returns with low risk related to COVID-19 (such as a cure, treatment or other product).<sup>xxviii</sup>

According to a study on older adults, there were very few new fraudulent approaches during COVID-19; rather, scammers used COVID-19 as a context for their existing schemes.<sup>xxix</sup> In addition, because of large-scale government assistance programs to businesses and individuals,

many people had money to spend and invest, which likely drove up victimization rates.<sup>xxx</sup> Last, one study found that naive new investors may be particularly vulnerable to fraud, which is consistent with the above-mentioned study which finds that new investors may have very low levels of financial and investment literacy.<sup>xxxii</sup>

### *Market Performance*

There were eight studies on market performance. The results are mixed, so it is difficult to draw any high-level learning from these studies. For example, one study of 13 African markets found that 10 countries had their stock markets significantly and adversely affected by the COVID-19, whereas the remaining 3 countries saw no significant impact (or a rather short-lived negative significant impact) of the COVID-19 pandemic on their stock markets. They conclude that, within their sample period, there is almost no chance that the COVID-19 pandemic would have positive effects on the stock market performance in Africa.<sup>xxxiii</sup> One interesting finding from a Chinese study is that the daily growth in total confirmed cases and in total cases of death caused by COVID-19 had significant negative effects on stock returns across all companies.<sup>xxxiv</sup> A report by CONSOB Italy found an increase purchasing of equities and mutual funds among retail investors. It also saw increased interest in cryptocurrencies and ESG funds.

### *Social Media*

Overall, the research examining the role of social media during the pandemic suggests a relationship between social media activity and market behavior. Securities markets exhibit social network spillovers, large effects of influencers and thought leaders, bubbles, bursts of high volume, price momentum, fundamental momentum, and reversal.<sup>xxxv</sup> For example, one study found a significant causal relationship between tweets on a particular day and the closing price of the FTSE MIB during the first phase of the COVID-19 epidemic.<sup>xxxvi</sup> Another found that both tone and number of comments influenced GameStop (GME) intraday returns, sentiments extracted from longer threads had a greater influence, and that fear was the dominant sentiment in all comments. Comments that express a sad sentiment show the most significant impact. While investors may just like a stock, it appears that fear and loathing are also important factors.<sup>xxxvii</sup>

### *Market Participation*

Several studies, all based on markets in the United States, show that prior to the pandemic roughly half of the U.S. population had investments. These studies also showed that women and people of color are under-represented in the investor ranks.<sup>xxxviii,xxxix</sup> One study found a small trend toward increased diversity among the investor ranks had been underway prior to the pandemic, and that this trend was likely strengthened by the pandemic as well as FinTech innovations (e.g., zero-cost trading and fractional shares) and the availability of stimulus funds. As noted above, the post-pandemic investor population, both in the U.S. and around the world, will likely be more diverse due to the influx of younger and more diverse investors associated with the pandemic.

### *General*

There are several studies that were conducted during the pandemic that cover a wide range of topics and could not be easily categorized using our topic classifications. These included analyses on numerous investor characteristics, behaviors, and attitudes during COVID-19. Among others, a study by OSC Ontario looked at data from 2,000 Canadians and drew insights on the role of the pandemic in guiding Canadian investors' preferences, beliefs, attitudes, and financial states,<sup>2</sup> while another OSC Ontario study took a closer look at the specific behaviors, preferences and attitudes of self-directed retail investors in Canada.<sup>xl</sup> A report by the FCA UK

examined a range of consumer reactions to COVID-19, including effects on fraud and scams, and a study by Vanguard examined the trading activity of their client base during a portion of the pandemic.<sup>xli</sup> A forthcoming report by CONSOB Italy examined Italian consumers' financial knowledge, attitudes and investment decisions during 2021<sup>xlii</sup>, and a report by FMA New Zealand studied the characteristics, perceptions, behaviors motivations and influences of retail investors.<sup>xliii</sup>

## Appendix B - Committee 8 Survey

### Basic Information.

Please answer the following questions about your organization's views and experiences with respect to the impact of COVID-19 on investor behaviour and investor education. Wherever possible, note if you have data to support your observations. In addition, space is provided for comments so that you can elaborate on your responses if you so choose. Please note that the C8 defines the start of the COVID-19 pandemic as January 2020.

**1. Organization/Authority Name\***

**2. Primary Survey Contact\***

**3. Email Address\***

### Investor Behaviour Changes

**4. Has your organization/authority identified any changes in investor behaviour during the COVID-19 crisis?\***

- Yes
- No
- Don't Know

**If yes, please briefly describe *how* you identified these changes. Provide links to these findings if available.**

**5. [if Question 4=Yes, please answer] In which of the following categories has your organization/authority observed changes during the COVID-19 crisis? (Check all that apply.)**

- The quantity and composition of new retail investors
- The use of social media
- Digital engagement practices (*e.g.*, gamification, nudges/notifications, design features)
- Financial fraud and exploitation
- Market performance and/or volatility
- Trading behaviours
- Investing decisions
- Other (please specify): \_\_\_\_\_
- Don't Know

**6. [if Question 4=Yes, please answer] Briefly describe what steps or actions, if any, your organization/authority has taken (or is planning to take) as a result of these observed changes?**

## Educational Programmes

7. Has your organization/authority created or customized any educational programmes to address the needs of retail investors during the COVID-19 pandemic?\*

- Yes  
 No  
 Don't know

If yes, please *briefly* describe the educational programme(s) and any specific groups that aim to help. In addition, provide any existing links

8. [if Question 7=Yes, please answer] Have any of these educational programmes addressed the following?

Pandemic-related financial fraud	Yes	No	Don't Know
Digital engagement practices (e.g., gamification, nudges/notifications, design features)	Yes	No	Don't Know
Relationship between risk and return	Yes	No	Don't Know
Self-directed investing versus use of a financial professional	Yes	No	Don't Know
Discerning reliable information sources from unreliable ones	Yes	No	Don't Know
Specific investing products (e.g., crypto, options, ESG, margin, etc.)	Yes	No	Don't Know
Other	Yes	No	Don't Know

Provide details (please be brief):

9. [if Question 7=Yes, please answer] Has your organization/authority evaluated the effectiveness of the educational programme(s) that assist retail investors during the COVID-19 crisis?

- Yes  
 No  
 Not yet, but planning to do so  
 Don't Know

If yes or planning to do so, please *briefly* describe the evaluation approach/methodology.

## Investor Protection Programmes

**10. Has your organization/authority implemented any investor protection measure(s) to assist retail investors during the COVID-19 pandemic (directly or indirectly)?\* Investor protection measures include rules, regulatory policies, guidance, disclosures or procedures designed to protect investors.**

- Yes  
 No  
 Don't know

**If yes, please *briefly* describe the investor protection measure(s).**

**11. [if Question 10=Yes, please answer] Have any of these investor protection measure(s) addressed the following?**

Pandemic-related financial fraud	Yes	No	Don't Know
Digital Engagement Practices (e.g., gamification, nudges/notifications, design features)	Yes	No	Don't Know
Vulnerabilities of new Investors	Yes	No	Don't Know
Waiving of fees and/or other effort(s) to minimize financial hardship	Yes	No	Don't Know
Waiving of disclosures	Yes	No	Don't Know
Use of margin or leverage to invest	Yes	No	Don't Know
Finfluencers/Use of social media	Yes	No	Don't Know
Other	Yes	No	Don't Know

**Provide details (please be brief):**

**12. [if Question 10=Yes, please answer] Has your organization/authority evaluated the effectiveness of investor protection measure(s) that assist retail investors during the COVID-19 crisis?**

- Yes  
 No  
 Not yet, but planning to do so  
 Don't Know

**If yes or planning to do so, please *briefly* describe the evaluation approach/methodology.**

## Appendix C – Members of Committee on Retail Investors (Committee 8)

- **Chairman** - Mr. Pasquale Munafò, Senior Finance Professional, Commissione Nazionale per le Società e la Borsa, **Italy**
- **Vice-Chairman** - Mr. Camille Beaudoin, Director, Financial Education Department, Autorité des marchés financiers, **Quebec**

### Members:

Comissão do Mercado de Capitais, **Angola**  
(*Mr. Sebastião Manuel*)

Comisión Nacional de Valores, **Argentina**  
(*Ms. Nadia Montenegro*)

Australian Securities and Investments  
Commission, **Australia**  
(*Mr. Danny McCarthy (until August 2022) /  
Mr. Gerard Fitzpatrick*)

Financial Services and Markets  
Authority, **Belgium**  
(*Mr. Jim Lannoo*)

Comissão de Valores Mobiliários, **Brazil**  
(*Mr. José Alexandre C. Vasco*)

China Securities Regulatory  
Commission, **China**  
(*Mi Zhou / Ms. Lixia Lin*)

Autorité des marchés financiers, **France**  
(*Ms. Florence Corne*)

Bundesanstalt für  
Finanzdienstleistungsaufsicht, **Germany**  
(*Mr. Jörg Janotte / Marius Maaßen*)

Securities and Futures Commission, **Hong  
Kong**  
(*Ms. Michelle Yeung*)

Securities and Exchange Board of India, **India**  
(*N. Hariharan / Girraj Prasad Garg*)

Indonesia Financial Services  
Authority, **Indonesia**  
(*Mr. Tirta Segara / Mr. Cecep Setiawan*)

Israel Securities Authority, **Israel**  
(*Ms. Hadar Horen / Ms. Yael Beuchler*)

Ontario Securities Commission, **Ontario**  
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Comissão do Mercado de Valores  
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- 
- i Ortmann, R., Pelster, M., & Wengerek, S. T. (2020). COVID-19 and investor behavior. *Finance Research Letters*, 37, 101717. <https://doi.org/10.1016/j.frl.2020.101717>
- ii Djalilov, A., & Ülkü, N. (2021). Individual investors' trading behavior in Moscow Exchange and the COVID-19 crisis. *Journal of Behavioral and Experimental Finance*, 31, 100549. <https://doi.org/10.1016/j.jbef.2021.100549>.
- iii Welch, I. (2020). The wisdom of the Robinhood crowd (No. w27866). *National Bureau of Economic Research*. <https://www.nber.org/papers/w27866>
- iv Kim, J. S. (March, 2021). Retail investors during COVID-19 pandemic. *Korea Capital Market Institute*, [https://www.kcmi.re.kr/en/publications/pub\\_detail\\_view?year=2021&zcd=002001017&zno=1584&cn o=5654](https://www.kcmi.re.kr/en/publications/pub_detail_view?year=2021&zcd=002001017&zno=1584&cn o=5654)
- v Commissione Nazionale Per le Società e la Borsa (CONSOB). (2021). Trends and risks of the Italian financial system in a comparative perspective. Statistics and Analyses. <https://www.consob.it/documents/46180/46181/Congiuntura2021.pdf/2984d324-f20e-47a6-96b1-92fa53f88c32>
- vi Riaz, S., Ahmed, R., Parkash, R., & Ahmad, M. J. (2020). Determinants of stock market investors' behavior in COVID-19: A study on the Pakistan stock exchange. *International Journal of Disaster Recovery and Business Continuity*, 11(3), 977-990. <https://philpapers.org/archive/RIADOS.pdf>
- vii Fernandez-Perez, A., Gilbert, A., Indriawan, I., & Nguyen, N. H. (2021). COVID-19 pandemic and stock market response: A culture effect. *Journal of Behavioral and Experimental Finance*, 29, 100454. <https://doi.org/10.1016/j.jbef.2020.100454>
- viii Chiah, M., & Zhong, A. (2020). Trading from home: The impact of COVID-19 on trading volume around the world. *Finance Research Letters*, 37, 101784. <https://doi.org/10.1016/j.frl.2020.101784>
- ix Fontes, A., Ganem, R., Lush, M., & Mottola, G. (2020). The impact of pandemic-related volatility on stock market expectations and participation. *Consumer Insights : Money & Investing*. FINRA Investor Education Foundation & NORC at the University of Chicago. [https://www.finrafoundation.org/sites/finrafoundation/files/market-volatility-general-research-brief-final\\_0.pdf](https://www.finrafoundation.org/sites/finrafoundation/files/market-volatility-general-research-brief-final_0.pdf)
- x Bagchi, S., & Sharma, N. (2021). An analytical study on Covid-19 and Indian stock market. <http://capdr.org/wp-content/uploads/2021/09/K125-Updated.pdf>
- xi Priem, R. (2021). An exploratory study on the impact of the COVID-19 confinement on the financial behavior of individual investors. *Economics, Management, and Financial Markets*, 16(3), 9-40. <https://www.ceeol.com/search/article-detail?id=983512>
- xii Yahya, F., Shaohua, Z., Abbas, U., & Waqas, M. (2021). COVID-19-induced returns, attention, sentiments and social isolation: Evidence from dynamic panel model. *Global Business Review*, 0972150921996174. <https://doi.org/10.1177/0972150921996174>
- xiii Löwen, C., Kchouri, B., & Lehnert, T. (2021). Is this time really different? Flight-to-safety and the COVID-19 crisis. *Plos one*, 16(5), e0251752. <https://doi.org/10.1371/journal.pone.0251752>
- xiv Pagano, M. S., Sedunov, J., & Velthuis, R. (2021). How did retail investors respond to the COVID-19 pandemic? The effect of Robinhood brokerage customers on market quality. *Finance Research Letters*, 101946. <https://doi.org/10.1016/j.frl.2021.101946>
- xv Talwar, S., Talwar, M., Tarjanne, V., & Dhir, A. (2021). Why retail investors traded equity during the pandemic? An application of artificial neural networks to examine behavioral biases. *Psychology & Marketing*, 38(11), 2142-2163. <https://doi.org/10.1002/mar.21550>
- xvi Nijboer, R. (2021). *Retail investing in the information age: an investigation of herd behaviour on Robinhood* [Doctoral Dissertation, University of Groningen]. Eprints. <https://feb.studenttheses.ub.rug.nl/id/eprint/27342>
- xvii Yarovaya, L., Matkovskyy, R., & Jalan, A. (2021). The effects of a “black swan” event (COVID-19) on herding behavior in cryptocurrency markets. *Journal of International Financial Markets, Institutions and Money*, 101321. <https://doi.org/10.1016/j.intfin.2021.101321>
- xviii Autorité des Marchés Financiers (AMF). (April, 2020). Retail Investor behaviour during the COVID-19 crisis. *Markets Directorate*. [https://www.amf-france.org/sites/default/files/2020-04/retail\\_investors\\_equities\\_march\\_2020\\_en.pdf](https://www.amf-france.org/sites/default/files/2020-04/retail_investors_equities_march_2020_en.pdf)
- xix Deloitte Center for Financial Services (2021). The rise of newly empowered retail investors. <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/financial-services/us-the-rise-of-newly-empowered-retail-investors-2021.pdf>
- xx Tinn, K. (2021). Everyone is a stock trader now: Retail investors and COVID-19. *Covid Economics*, 88-115.

- 
- xxi Ozik, G., Sadka, R., & Shen, S. (2020). Flattening the illiquidity curve: Retail trading during the COVID-19 lockdown. Available at SSRN 3663970. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3663970](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3663970)
- xxii Lush, M., Fontes, A., Zhu, M., Valdes, O., & Mottola, G. (2021). Investing 2020: New Accounts and the people who opened them. *Consumer Insights: Money & Investing*. FINRA Investor Education Foundation & NORC at the University of Chicago. [https://www.finrafoundation.org/sites/finrafoundation/files/investing-2020-new-accounts-and-the-people-who-opened-them\\_1\\_0.pdf](https://www.finrafoundation.org/sites/finrafoundation/files/investing-2020-new-accounts-and-the-people-who-opened-them_1_0.pdf)
- xxiii Commissione Nazionale Per le Società e la Borsa. (2020). *Report on financial investments of Italian households : Behavioral attitudes and approaches*. Statistics and Analysis. <https://www.consob.it/documents/46180/46181/rf2020.pdf/ccfe7ad2-810f-4490-bd7e-413daa24c391>
- xxiv Hung, A. (2021, April, 6). Financial literacy and investor literacy of the new generation of investors. Draft presented at the 2021 Annual GFLEC Cherry Blossom Conference, Washington, D.C., United States.
- xxv BritainThinks. (2021). Understanding self-directed investors. A summary report of research conducted for The Financial Conduct Authority. <https://www.fca.org.uk/publication/research/understanding-self-directed-investors.pdf>
- xxvi Financial Conduct Authority (FCA). (2021). Financial Lives 2020 survey: The impact of coronavirus. <https://www.fca.org.uk/publication/research/financial-lives-survey-2020.pdf>
- xxvii Kennedy, J. P., Rorie, M., & Benson, M. L. (2021). COVID-19 frauds: An exploratory study of victimization during a global crisis. *Criminology & Public Policy*. <https://doi.org/10.1111/1745-9133.12554>
- xxviii Ontario Securities Commission. (April, 2020). Investing and the COVID-19 pandemic : Survey of Canadian investors. Ipsos. [https://www.osc.ca/sites/default/files/2021-04/inv\\_research\\_20210412\\_investing-and-covid-19.pdf](https://www.osc.ca/sites/default/files/2021-04/inv_research_20210412_investing-and-covid-19.pdf)
- xxix Cross, C. (2020). Theorising the impact of COVID-19 on the fraud victimisation of older persons. *The Journal of Adult Protection*. <https://doi.org/10.1108/JAP-08-2020-0035>
- xxx Levi, M., & Smith, R. G. (2021). Fraud and pandemics. *Journal of Financial Crime*. <https://doi.org/10.1108/JFC-06-2021-0137>
- xxxi Yanco, G. (2020). Retail investing during COVID-19: Snares and scams. *Equity*, 34(8), 4-5. <https://search.informit.org/doi/abs/10.3316/informit.448831030293974>
- xxxii Takyi, P. O., & Bentum-Ennin, I. (2021). The impact of COVID-19 on stock market performance in Africa: A Bayesian structural time series approach. *Journal of Economics and Business*, 115, 105968. <https://doi.org/10.1016/j.jeconbus.2020.105968>
- xxxiii Al-Awadhi, A. M., Alsaifi, K., Al-Awadhi, A., & Alhammedi, S. (2020). Death and contagious infectious diseases: Impact of the COVID-19 virus on stock market returns. *Journal of Behavioral and Experimental Finance*, 27, 100326. <https://doi.org/10.1016/j.jbef.2020.100326>
- xxxiv Pedersen, L. H. (2021). Game on: Social networks and markets. Available at SSRN 3794616. [https://papers.ssrn.com/sol3/Papers.cfm?abstract\\_id=3794616](https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=3794616)
- xxxv Lazzini, A., Lazzini, S., Balluchi, F., & Mazza, M. (2021). Emotions, moods and hyperreality: social media and the stock market during the first phase of COVID-19 pandemic. *Accounting, Auditing & Accountability Journal*. <https://doi.org/10.1108/AAAJ-08-2020-4786>
- xxxvi Long, C., Lucey, B. M., & Yarovaya, L. (2021). " I Just Like the Stock" versus" Fear and Loathing on Main Street": The Role of Reddit Sentiment in the GameStop Short Squeeze. *SSRN Electronic Journal*, 31. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3822315](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3822315)
- xxxvii Valdes, O., & Mottola, G. Bridging the divide: A closer look at changes in the racial and ethnic composition of investor households. *Insights: Financial Capability*. FINRA Investor Education Foundation. [https://www.finrafoundation.org/sites/finrafoundation/files/bridging-the-divide\\_0.pdf](https://www.finrafoundation.org/sites/finrafoundation/files/bridging-the-divide_0.pdf)
- xxxviii Parker, K., & Fry, R. (2020). More than half of US households have some investment in the stock market. *Pew Research Center*, 25, 2020. <https://www.pewresearch.org/fact-tank/2020/03/25/more-than-half-of-u-s-households-have-some-investment-in-the-stock-market/>
- xxxix Saad, L. (2019). What percentage of Americans Owns Stock?. *Gallup, The Short Answer*, 13. <https://news.gallup.com/poll/266807/percentage-americans-owns-stock.aspx>
- xl Ontario Securities Commission (OSC). (2021). Self-directed investors: Insights and experiences. [https://www.osc.ca/sites/default/files/2021-04/inv\\_research\\_20210421\\_self-directed-investor-survey.pdf](https://www.osc.ca/sites/default/files/2021-04/inv_research_20210421_self-directed-investor-survey.pdf)
- xli Vanguard. (2020). How America invests : 2020. <https://personal.vanguard.com/pdf/how-america-invests-2020.pdf>
- xlii Commissione Nazionale Per le Società e la Borsa. (forthcoming 2021). Report on financial investments of Italian households. Statistics and Analyses. <https://www.consob.it/web/consob-and-its-activities/report-on-investments-households>

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xliii Kantar Public, & Colman Brunton. (2021). *Retail investor platforms research*. Financial Markets Authority (FMA). <https://www.fma.govt.nz/assets/Reports/FMA-Retail-Investor-Platforms-Research.pdf>