Strategic Framework for Investor Education and Financial Literacy

Final Report

THE BOARD
OF THE
INTERNATIONAL ORGANIZATION OF SECURITIES COMMISSIONS

FR09/14 **OCTOBER 2014**

Copies of publications are available from:
The International Organization of Securities Commissions website www.iosco.org

Contents

I. Introduction

The need for investor education and financial literacy has never been greater. As the financial marketplace continues to evolve and innovate, investment products are becoming increasingly complex and financial services increasingly diverse. Greater understanding of key financial concepts is required on the part of retail investors to understand and evaluate the choices available to them and avoid fraud. Underscoring the importance of investor education and financial literacy is the critical – and increasing – need for retirement planning as responsibility for saving and investing in many jurisdictions shifts from the employer to the individual.

The International Organization of Securities Commissions (IOSCO)[1] is responding to these challenges. In June 2013, the IOSCO Board approved the establishment of the Committee on Retail Investors (C8). The committee's primary mandate is to conduct IOSCO's policy work on retail investor education and financial literacy. Its secondary mandate is to advise the IOSCO Board on emerging retail investor protection matters and conduct investor protection policy work as directed by the IOSCO Board. See Appendix 1 for a list of C8 members.

This paper sets out a strategic framework for C8's primary mandate: its work in investor education and financial literacy. It describes IOSCO's role in investor education and financial literacy, the role of research, particularly the field of behavioural economics, and C8's initial areas of focus and strategic approach to fulfilling its primary mandate. The paper also identifies practices currently used by C8 members to help guide IOSCO members in developing and enhancing their own investor education and financial literacy programs.

II. Background

A. Role of education in investor protection

The intertwined aims of investor protection and the promotion of investor confidence in the integrity of securities markets are at the heart of IOSCO's objectives.[2] These aims, to varying degrees, are also the objectives of many IOSCO members.

Investor education is a key strategy for enhancing investor protection[3], promoting investor confidence and fostering investor engagement in financial planning and decision-making. It is complementary to the traditional tools of regulation, supervision and enforcement.

IOSCO recognises the importance of investor education in its guiding principles of securities regulation. Key Issue 6 of Principle 3 of the IOSCO Methodology states that "[r]egulators

---

1 IOSCO is the international body that brings together the world's securities regulators and is recognised as the global standard setter for the securities sector. Its members regulate more than 95% of the world's securities markets in some 120 jurisdictions. It is the only international financial regulatory organisation that includes within its membership all the major emerging markets jurisdictions.

2 See International Organization of Securities Commissions, *IOSCO Objectives*, online: International Organization of Securities Commissions: http://www.iosco.org/about/

3 Key investor protection factors that may help inform the development of investor education and financial literacy programs include, but are not limited to, transparency, fairness, choice, suitability, the level of safety associated with products and services, access, representation and redress.

should play an active role in the education of investors and other market participants."[4]

Since 2001, IOSCO has published a number of reports surveying members on investor education and financial literacy initiatives. The reports cover topics, such as approaches taken by members with respect to investor education, challenges faced by members and global standards for investor education generally.[5]

Many IOSCO members provide investor education programs or materials as part of a specific mandate or linked to a more general objective to protect investors. The delivery of investor education and financial literacy programs varies across jurisdictions. In many cases, a range of other government organisations, such as a Central Bank or Ministry of Finance, may also be active in providing investor education and financial literacy information to the public. Securities regulators often partner with these organisations in providing investor education and financial literacy programs.

B. Definition of investor education and financial literacy

While various definitions of "*investor education*," "*financial literacy*" and similar terms [6] exist, there are no universally accepted definitions. "*Investor education*" is generally considered to be a subset of the broader concept of "*financial literacy*."

---

4 See International Organization of Securities Commissions, *Methodology for Assessing Implementation of the IOSCO Objectives and Principles of Securities Regulation* (September 2011, revised August 2013), online: International Organization of Securities Commissions at: https://www.iosco.org/library/pubdocs/pdf/IOSCOPD359.pdf [IOSCO Methodology].

5 See *e.g.*, International Organization of Securities Commissions, Technical Committee, *Discussion Paper on the Role of Investor Education in the Effective Regulation of CIS and CIS Operators: Report of the Technical Committee of the International Organization of Securities Commissions* (Report, March 2001), online: International Organization of Securities Commissions at: https://www.iosco.org/library/pubdocs/pdf/IOSCOPD117.pdf; International Organization of Securities Commissions, Emerging Markets Committee, *Investor Education: Report from the Emerging Markets Committee of the International Organization of Securities Commissions* (Report, October 2002), online: International Organization of Securities Commissions at https://www.iosco.org/library/pubdocs/pdf/IOSCOPD140.pdf; International Organization of Securities Commissions, Education and Training Team, *Investor Education: An Analysis of IOSCO Member Websites and Web-Based Information* (Report, June 2012); International Organization of Securities Commissions, *Report on Investor Education Initiatives Relating to Investment Services: IOSCO Report* (Report, February 2013), online: International Organization of Securities Commissions https://www.iosco.org/library/pubdocs/pdf/IOSCOPD404.pdf .

6 For example, Lusardi and Mitchell define financial literacy as "*peoples' ability to process economic information and make informed decisions about financial planning, wealth accumulation, pensions, and debt*." Annamaria Lusardi & Olivia Mitchell, "*The Economic Importance of Financial Literacy: Theory and Evidence*" (Netspar Discussion Paper, 2 April 2013) at 2. The Task Force on Financial Literacy defines financial literacy as "*having the knowledge, skills and confidence to make responsible financial decisions*." Task Force on Financial Literacy, *Canadians and their Money: Building a brighter financial future: Report of Recommendations on Financial Literacy* (Report, December 2010). The Financial Consumer Agency of Canada defines financial literacy as "*Consumers' acquisition of knowledge, skills and confidence to properly manage their personal finances*." Financial Consumer Agency of Canada, *Moving Forward with Financial Literacy: Synthesis Report on Reaching Higher: Canadian Conference on Financial Literacy* (Conference report, 9-10 September 2008). The OECD defines financial education as "*the process by which financial consumers/investors improve their understanding of financial products and concepts and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being*." OECD, *Improving Financial Literacy: Analysis of Issues and Policies* (OECD Publishing, 2005).

Financial literacy generally relates to all aspects of a person's financial situation and can include the concept of financial capability (a person's awareness, knowledge, skills, attitudes and behaviours). Investor education focuses on issues relevant to the education and information needs of individuals who participate, or are considering participating, in the securities markets (commonly referred to as "*retail investors*").

In its 2012 report on the investor education websites of IOSCO members, the IOSCO Education and Training Team identified the concept of "*investor literacy*" as the "*understanding ordinary investors have of market principles, instruments, organizations and regulations*."[7]

Depending on their mission and/or remit, some IOSCO members may be solely concerned with investor education, while others may have a broader role relating to financial literacy.

C. Benefits of investor education and financial literacy

Investor education and financial literacy programs have the potential to help improve financial outcomes for retail investors. Some key benefits include more informed saving and investment decision-making, better financial and retirement planning, greater confidence and higher participation in the securities markets, greater wealth accumulation, and increased awareness of investor rights and responsibilities.[8]

Ideally, investor education and financial literacy programs, as a complement to securities market regulation and supervision, can help address any misalignment of investor and industry interests, particularly with respect to information asymmetry. For example, investor education could potentially reduce both the propensity for investors to mis-buy investment products and services, and for intermediaries to mis-sell products and services. This could lead to fewer investor complaints.

In addition, investor education can also help investors better assess the appropriateness and suitability of investment advice, investment products and services. It can also help investors, detect and avoid suspected fraudulent activity, and distinguish between regulated and non-regulated activity, all of which could reduce investor losses.

D. Limitations of investor education and financial literacy

The availability of investor education and financial literacy programs does not guarantee that investors will make better investment decisions or avoid fraud. It is recognised that investor education and financial literacy will only go so far in changing investor behaviour.[9] Behavioural economics research identifies a range of barriers that may prevent people from making good financial decisions.[10] As a result, investor education and financial literacy

---

7 International Organization of Securities Commissions, Education and Training Team, *supra* note 5.

8 Lusardi & Mitchell, *supra* note 6 at 42-3.

9 For example, data that quantifies progress toward reducing the incidence of mis-selling and mis-buying is limited and suggests that many initiatives are ineffective and sometimes counterproductive. See Zvi Bodie, Laurence B. Siegel & Lisa Stanton, eds., *Life-Cycle Investing: Financial Education and Consumer Protection* (Research Foundation of CFA Institute, 2012) at 109-114.

10 See Appendix 2 for more information about behavioural economics.

programs will not completely eliminate the need for regulatory intervention in order to achieve desired outcomes for investors.

However, the case for providing investor education and financial literacy programs is compelling, particularly when viewed as an additional tool available to securities regulators in supporting regulation and supervision. For example, investor education programs can complement regulations that enforce conduct standards, require financial institutions to provide clients with appropriate information, strengthen legal protections for consumers or provide for redress.

The challenge is to identify and utilise effective methods of delivering investor education and financial literacy materials and messages to investors. Ultimately, improved financial skills and knowledge can lead to increased confidence and trust in the financial sector, and a greater likelihood that investors will participate in the securities markets. This, in turn, could benefit capital raising in general and promote greater market efficiency.

III. Role of IOSCO in investor education and financial literacy

As the global standard-setter for securities regulation, IOSCO is well positioned to play an influential and substantial role in the development and delivery of investor education and financial literacy programs for retail investors:

- **Independent and unbiased** – Securities regulators are uniquely positioned to provide unbiased investor education, including, for example, information and tools to help retail investors understand investment products, work more effectively with intermediaries and take steps to avoid falling victim to fraud.

- **Access to expertise and data** – IOSCO and its members have extensive expertise and experience in securities, market structure and investment product regulation. They also have access to data on potential market risks and misconduct, and are well placed to leverage existing data gathering methodologies to identify and address investor concerns. C8 intends to coordinate and work collaboratively with other IOSCO policy committees in the identification, development and delivery of investor education and financial literacy programs.

- **Unique insights into workings of the markets** – Through rule-making, supervision and enforcement powers, regulators have the unique ability and expertise to "*look inside the securities industry*" to identify and understand factors that shape market outcomes and business models, including structural and other competition issues, information problems and misaligned incentives. Securities regulators can leverage this experience and insight to develop targeted investor education programs.

- **Direct impact through regulatory action** – A wide range of tools gives securities regulators the flexibility to determine the most appropriate approach to address investor protection, whether it is through investor education and financial literacy programs, and/or regulatory action.[11]

---

11 Kristina Erta *et al*., "Applying behavioural economics at the Financial Conduct Authority" (Financial Conduct Authority Occasional Paper No. 1, April 2013), online: Financial Conduct Authority at: http://www.fca.org.uk/static/documents/occasional-papers/occasional-paper-1.pdf.

- **Well positioned to take on a leadership role –** As part of national and local strategies, securities regulators may have opportunities to take on key leadership roles in specific areas of investor education and work in partnership with other organisations. This can help ensure that initiatives are integrated in national strategies, which may contribute to greater efficiencies, a more consistent quality of education and less duplication of effort.

IV. Global focus on investor education and financial literacy

A. Key global organisations

A number of global organisations and networks apart from IOSCO have recognised the importance of investor education and financial literacy more broadly. Key among these are:

International Forum for Investor Education (IFIE)
Chartered in 2005, IFIE is an alliance of 28 organisations of regulators, industry associations and other interested stakeholders from 15 countries. It serves primarily as a resource for trends and developments in financial education through membership meetings, conferences and training sessions. IFIE also establishes and promotes standards of best practices for investor education on a global basis. Since 2007, IFIE and IOSCO have jointly organised global investor education conferences.[12]

International Network on Financial Education (INFE)
INFE was created by the Organization of Economic Cooperation and Development (OECD) in 2008. It has members from over 240 public institutions, including Central Banks, Ministries of Finance and Ministries of Education, in more than 100 countries.[13]

INFE conducts research and develops tools to support policy makers and public authorities in designing and implementing financial education strategies. In particular, INFE has published a set of High Level Principles on National Strategies for Financial Education to assist jurisdictions in establishing coordinated and tailored strategies at a national level.[14] These principles have been endorsed by the G20. INFE also provides a policy forum for governments to exchange views and experiences on financial education, and publishes research, questionnaires, guidance and tools to measure levels of financial literacy.

International Financial Consumer Protection Network (FinCoNet)
FinCoNet was established in 2013 in response to the growing importance of financial

---

12 To date, IFIE and IOSCO have jointly organised six investor education conferences: October 2007, Madrid, Spain; March 2009, Washington, D.C., U.S.; November 2010, Cairo, Egypt; May 2012, Seoul, South Korea; June 2013, Toronto, Canada; and May 2014, Washington D.C., U.S. See also International Forum for Investor Education, *IFIE/IOSCO Investor Education Conferences*, online: International Forum for Investor Education http://ifie.org/index.php/ifieiosco-conferences.

13 OECD, *About*, online: OECD International Gateway for Financial Education http://www.financial-education.org/about.html. The OECD/INFE meets twice a year to share country experiences and discuss strategic directions and outputs, building on data collection and policy analysis. Network members use a password-protected collaborative working space to promote and support the exchange of views. Many of IOSCO's members participate in the OECD/INFE network.

14 OECD, *OECD/INFE High Level Principles on National Strategies for Financial Education* (August 2012).

consumer protection worldwide and the need for better coordination among supervisory bodies responsible for the oversight of the various national financial consumer protection regimes. The aim of FinCoNet is to promote sound market conduct and strong consumer protection through efficient and effective financial market conduct supervision.

FinCoNet focuses on banking and consumer credit protection issues. It aims to enhance the protection of consumers of financial services, strengthen consumer confidence and reduce systemic consumer risk by promoting strong and effective supervisory practices through sharing of best practices and promoting fair and transparent market practices.

B. C8: Engaging on the global stage

C8 now provides for a single formal forum within IOSCO that focuses on investor education and financial literacy. It also provides IOSCO with an identifiable group that can represent IOSCO's retail investor perspective in international regulatory policy debates, and liaise and engage with other global organisations on investor education issues.

C8 recognises that the work of other global organisations and networks will be relevant to its work on investor education and financial literacy. Engagement with these organisations, as appropriate, will assist in the development of investor education and financial literacy programs, as well as possible policy development focused on investor education issues.

V. Role of research in investor education and financial literacy

Research plays a critical role in formulating investor education and financial literacy theory and practice. It not only provides the evidence basis for targeting efforts and designing approaches, but it is also important in evaluating and measuring programs.

As C8 develops its programs and initiatives, it will draw on findings from fact-based research, as appropriate. This could include primary and secondary research, investor outreach and consultations. Research may also include empirical testing to determine, for example, the effectiveness of investor education and financial literacy strategies, programs, tools and other materials, and their effect on individual investor behaviour.

A focus for C8 will be findings from the field of behavioural economics and finance, which have begun to inform the work of financial educators in identifying psychological barriers to investment and developing educational strategies. At its June 2013 meeting, the IOSCO Board agreed to embed behavioural economics in IOSCO's approach to regulatory work going forward and encouraged C8 to examine the issue.[15]

For more information, see Appendix 2, which highlights a number of behavioural responses in financial decision-making that have important implications for the design of investor education and financial literacy strategies. See also Appendix 3 for a catalogue of behavioural economics research.

---

[15] See International Organization of Securities Commissions, Media Release, IOSCO/MR/24/2013, "*IOSCO Board focuses on behavioural economics and social media*" (1 July 2013), online: International Organization of Securities Commissions: http://www.iosco.org/news/pdf/IOSCONEWS286.pdf.

VI. C8’s strategic approach to investor education and financial literacy

C8’s primary mandate is to conduct IOSCO’s work on retail investor education and financial literacy. Its secondary mandate is to advise the IOSCO Board on emerging retail investor protection matters and conduct investor protection policy work as directed by the IOSCO Board.

In fulfilling its primary mandate, C8 has relied on its members’ experience as securities regulators to identify three initial areas of focus:

A. Investment knowledge and understanding
B. Financial skills and competence
C. Program design, delivery and measurement

The first two areas focus on investors: improving their investment knowledge and skills. The third area focuses on securities regulators: developing and delivering effective investor education and financial literacy programs.

C8 has identified topics in each area to serve as a roadmap for the committee in developing future initiatives and workstreams. The topics are also intended to help guide IOSCO members in developing and enhancing their own investor education and financial literacy programs.

C8’s strategic approach will include some or all of the following:

- Reviewing IOSCO members’ current practices and approaches to investor education and financial literacy with a view to identifying effective techniques,
- Providing a forum for sharing information and experiences, learning from each other and showcasing successful programs,
- Identifying emerging issues or themes in investor education and financial literacy, bringing them to the IOSCO Board’s attention, and, where appropriate, offering advice on managing these issues,
- Developing new and innovative approaches to investor education and financial literacy programing, and providing opportunities for cooperative approaches among jurisdictions, and
- Reviewing research and reports produced by other organisations and working collaboratively with them, as appropriate.

The nature and scope of the initiatives will largely depend on the target retail investor group and the issue or gap identified. At the same time, research (including behavioural economics) on topics, such as attitudes toward money management, financial planning and investing, will be critical in the design of each initiative.

We anticipate that C8 will coordinate and work collaboratively with other IOSCO policy committees. As the financial marketplace continues to innovate and evolve, C8 will identify new areas of focus for IOSCO’s work on retail investor education and financial literacy.

A. Investment knowledge and understanding

1. **Basic financial concepts –** Research in many jurisdictions has identified low levels of knowledge among investors about basic financial concepts, such as compound interest, inflation, and portfolio and risk diversification.

2. **Investment product attributes, including fees, risk and returns –** Research (including behavioural economics) shows that while investors often believe that they are well informed about the features of investment products and services, in practice many are not. For example, investors may not understand the risks of a product in which they have invested, particularly when the investment product is complex, or appreciate the impact of fees on long-term returns.

3. **Suitability –** Retail investors may be unable to assess the suitability of investment products and services for their own unique set of personal circumstances (for example, risk appetite, current financial commitments and goals, investment time horizon). They may also not be aware of product features that could impede their exit from the investment if their circumstances change, for example, due to illness or job loss.

4. **Avoiding fraud, including the use of alerts –** Data from enforcement actions by securities regulators show that retail investors continue to be susceptible to investment scams or frauds, such as get-rich quick schemes promoted as "can't lose" opportunities.

5. **Investor rights and responsibilities –** Retail investors may not understand their rights under their jurisdiction's legal framework, or be aware of the importance of researching intermediaries and investment products.

6. **Complaint handling and recourse –** When investors believe they have been treated unfairly or were mis-sold an investment product, they often do not know whom to contact or how to file a complaint. They may also not know what action to take if they suspect wrongdoing or fraud.

B. Financial skills and competence

1. **Working with intermediaries –** Many retail investors are unaware of tools and resources that can help them check the background of an investment professional. In addition, in many jurisdictions, there is a plethora of "*advice professional*" or "*financial professional*" credentials, which may be regulated by different private and/or public sector entities. This makes it difficult for investors to assess the qualifications of financial professionals.

2. **Financial planning and money management –** Research in various jurisdictions shows that a gap in basic financial skills impedes the ability of some retail investors to plan and manage money.[16] Behavioural economics has further demonstrated that people are generally poor intuitive statisticians and are prone to making systematic errors in decisions involving uncertainty, such as achieving a future retirement goal. Retail investors may not be aware of, or have access to, online tools and calculators that could assist them with planning and decision-making. Still others consider financial planning to

[16] See Money Advice Service, *The Financial Capability of the UK* (August 2013) at 6.

be relevant only for the extremely wealthy.[17]

3. **Critical thinking** – Retail investors may not have the knowledge, experience or access to tools needed to exercise a "healthy sense of *scepticism*" or to determine whether the advice they receive is accurate, suitable and consistent with their goals.

C. Program design, delivery and measurement

1. **Design and delivery mechanisms –** To be effective, investor education and financial literacy resources and materials should be relevant, understandable and accessible. Research shows that investor education programs targeting specific groups are likely to be more effective than one-size-fits-all programs.[18] This is also true of websites, social media outreach and face-to-face training. Understanding what information is relevant to various segments of retail investors and their preferred methods of delivery is crucial for the success of investor education and financial literacy programs.

2. **Interactive tools and online resources –** Delivery mechanisms should strive to be interactive and focus on delivering concrete results that investors can use. Examples include online calculators, checklists, interactive tools and mobile applications. Keeping pace with technology is also important for optimising online delivery systems.

3. **Measuring effectiveness –** Where practicable, investor education and financial literacy programs benefit from monitoring and evaluation to assess whether resources are being used effectively and programs are achieving desired outcomes. Preferably, an evaluation process should be included in the design of the program. Some programs may include a pilot or trial phase before they are fully implemented.

VII. Current practices of C8 members for investor education and financial literacy programs

To assist IOSCO members in implementing Principle 3 of the *IOSCO Objectives and Principles of Securities Regulation* (IOSCO Principles),[19] C8 members have identified a number of current practices from their jurisdictions that have been useful in designing and implementing investment education and financial literacy programs for retail investors.

C8 recognises that there is no one-size-fits-all model for investor education and financial literacy programs. The practices reflect approaches currently used by C8 members, taking

[17] See Nielsen Company, *Financial Knowledge and Capability in Hong Kong: A Foundation Study* (Report of the Investor Education Centre of the Securities and Futures Commission, June 2013) at 37, online: Investor Education Centre at: http://www.hkiec.hk/web/common/pdf/about_iec/foundation_study_june2013.pdf .

[18] Lusardi & Mitchell, *supra* note 6 at 37.

[19] See International Organization of Securities Commissions, *Objectives and Principles of Securities Regulation* (June 2010), online: International Organization of Securities Commissions at: http://www.iosco.org/library/pubdocs/pdf/IOSCOPD323.pdf. Principle 3 states that the Regulator should have adequate powers, proper resources and the capacity to perform its functions and exercise its powers. See also IOSCO Methodology, *supra* note 4. According to Principle 3, Key Issue 6, "[r]egulators should play an active role in promoting the education of investors and other market participants." *Ibid.* at 31.

into account the unique circumstances and context of member jurisdictions. Explanatory text and illustrative examples accompany each practice to assist IOSCO members in developing their own programs.

These practices may be read in conjunction with, and are complementary to, guidance produced by other international organisations on financial education.

Practice 1

Focus investor education and financial literacy programs on improving retail investor knowledge of basic core competencies for investing, and on raising awareness, and promoting *understanding of the types of investment products and services that are available.*

Explanatory text

Basic core competencies for investing include how to avoid investment fraud, and basic numerical concepts, such as percentages, the effects of compounding, and narrative descriptions of expected risk and return. Basic core competencies may also include understanding the fees and costs associated with investing, diversification, basic investment planning (for example, goal-setting, choosing and working with an advisor, asking the appropriate questions and planning for retirement) and common investment products, such as those used for retirement savings.

Many C8 members have developed investor education and financial literacy programs to help retail investors understand different types of investment products (objectives, features, risks, fees and costs), and investment services. A number of members have website content that guides retail investors through the basic principles of investing.[20]

Examples

- The AMF Quebec, the OSC, the FCA, the AMF, the CMVM and other C8 members provide interactive tools, such as budget planners and calculators, on their websites to promote learning on basic investing topics.[21]

---

20 See e.g. CNV, *Oficina de Atención y Protección al Inversor*, online: Comisión Nacional de Valores http://www.cnv.gob.ar/oficinaatencionyproteccioninversor.asp, ASIC's MoneySmart, *Investing basics*, online: MoneySmart https://www.moneysmart.gov.au/investing/investing-basics, FSMA's Wikifin.be, online: Wikifin.be http://www.wikifin.be/nl, AMF, *L'actualité Epargne Info Service*, online: Autorité des Marchés Financiers http://www.amf-france.org/Epargne-Info-Service/Accueil-l-AMF-a-votre-ecoute.html, SFC's Investor Education Centre, online: Investor Education Centre http://www.hkiec.hk/web/en/index.html, Jersey FSC's Protect Your Money, online: Protect Your Money http://www.protectyourmoney.je, SC's Malaysian Investor, online: Malaysian Investor http://www.min.com.my, OSC's GetSmarterAboutMoney.ca, *Investing Basics*, online: GetSmarterAboutMoney.ca http://www.getsmarteraboutmoney.ca/en/managing-your-money/planning/investing-basics, AMF Quebec, *Be informed*, online: Autorité des Marchés Financiers http://lautorite.qc.ca/en/be-informed.html, MAS (through the MoneySENSE website), online: MoneySENSE http://www.moneysense.gov.sg, FSB's My Life My Money, online: My Life My Money http://www.mylifemymoney.co.za, SEC Thailand's Start-to-Invest, online: Start-to-Invest http://www.start-to-invest.com, CMB's Yatirim Yapiyorum, online: Yatirim Yapiyorum http://yatirimyapiyorum.gov.tr, FCA's The Money Advice Service, online: The Money Advice Service https://www.moneyadviceservice.org.uk, SEC's Investor.gov, online: Investor.gov www.investor.gov, and CVM`s Portal do Investidor, online: Investidor.gov www.investidor.gov.br.

21 See e.g. FSMA's Wikifin.be, *Tools*, online: Wikifin.be http://www.wikifin.be/nl/tools-0, AMF, *Calculators*, online: http://www.amf-france.org/Epargne-Info-Service/Boite-a-outils/Calculateurs-financiers/Calculateur-1.html, OSC's GetSmarterAboutMoney.ca, *Tools & Calculators*, online:

Practice 2

Develop investor education and financial literacy programs that meet investor needs and support regulatory initiatives.

Explanatory text

Securities regulators may identify investor needs and priority initiatives through consultation with consumer associations, advisory groups and regulatory agencies within and outside their jurisdiction.

A priority for some securities regulators is financial knowledge and skills relating to life events, such as graduation, unemployment, marriage, birth, divorce, retirement, support of elderly relatives and death. A number of C8 members structure their websites according to life events and stages, and allow users to "*drill down*" to the content that suits their needs.[22] Priorities for other regulators include promoting the regulatory framework within their jurisdiction, aspects of behavioural economics (for example, over-confidence) and new regulatory disclosure reforms.

Securities regulators may also identify priorities through operational activities, tracking inquiries and complaints, compliance and disclosure oversight, and enforcement actions.

Investor alerts and bulletins are another way securities regulators support operational activities. National or international financial literacy surveys can also help identify investor needs and areas of focus.

Examples

- The JFSA has formed a consultative group of subject matter experts, government offices and industry associations to determine future financial education work.
- The CSRC uses suggestions from investors received through its hotline to help identify investor needs and priorities.

GetSmarterAboutMoney.ca http://www.getsmarteraboutmoney.ca/en/tools_and_calculator, AMF Quebec, *Calculators*, online: Autorité des Marchés Financiers at: http://www.lautorite.qc.ca/en/calculators-investment.html, FSB's My Life My Money, *Calculators and Budget Template*, online: My Life My Money https://www.mylifemymoney.co.za/Consumer/Tools/Pages/default.aspx, FCA's The Money Advice Service, *Tools & resources*, online: The Money Advice Service at: https://www.moneyadviceservice.org.uk/en/categories/tools--resources and SEC's Investor.gov, *Tools*, online at: Investor.gov http://www.investor.gov/tools.

22 See ASIC's MoneySmart, *Life events & you*, online at: MoneySmart https://www.moneysmart.gov.au/life-events-and-you, FSMA's Wikifin.be, *Levensmomenten*, online at: Wikifin.be http://www.wikifin.be/nl/levensmomenten, SFC's Investor Education Centre, *Life Events & You*, online at: Investor Education Centre https://www.hkiec.hk/web/en//life-events-and-you/index.html, SC's Malaysian Investor, *Financial Planning: Articles*, online: Malaysian Investor http://www.min.com.my/articles/financial-planning, OSC's GetSmarterAboutMoney.ca, *Life events*, online at: GetSmarterAboutMoney.ca http://www.getsmarteraboutmoney.ca/en/LIFE-EVENTS, MAS's MoneySENSE, *Life Events*, online at: MoneySENSE http://www.moneysense.gov.sg/Life-Events.aspx, FCA's The Money Advice Service, *Life events*, online at: The Money Advice Service https://www.moneyadviceservice.org.uk/en/categories/life-events, and SEC's Investor.gov, *Life Events*, online at: Investor.gov http://investor.gov/life-events.

- In Hong Kong, an education campaign to raise awareness of investor rights during the sales process was based on findings from a "*Mystery Shopping Program Finding*" report by the SFC in 2011.
- The CNV posts investor warnings and alerts on its website, as do many other members.
- The SEC Thailand has relied on financial literacy surveys and research conducted by the Bank of Thailand and the National Statistical Office.

Practice 3

Develop investor education and financial literacy programs to meet the needs of specific audiences.

Explanatory text

Research demonstrates that investor education and financial literacy programs are most effective when based on particular retail investor segments, for example, age, life event, risk or behavioural profile, or level of financial knowledge.

An important first step is to define the target investor or investor segment, in order to develop the most appropriate and effective content, format and delivery method.[23] A number of C8 members target investor programs by age, socio-economic background and level of investing sophistication (based in part on the segment's vulnerability).

The choice of media for delivering investor education and financial literacy programs usually depends on the target investor or investor segment. In order to achieve the widest exposure, many securities regulators use all available media. Current methods include distributing written materials, such as brochures and fact sheets, face-to-face meetings, website calculators, financial tools, training seminars, podcasts, videos, engagement with the media, town hall meetings and workshops.

In addition to website content targeted to specific audiences, a number of C8 members are using social media, including Facebook, Twitter and YouTube, to reach audiences. Some C8 members also provide content specifically for culturally and linguistically diverse groups within their jurisdiction.[24]

Examples

- Through its Market Women Wealth and Health Program, the SEC Nigeria visits women, educating them about securities markets, products and how to invest.
- ASIC's dedicated consumer website, MoneySmart, has tailored education material for different audiences and life stages, including young adults, pre-retirees, families, women and Indigenous Australians.
- The FCA's Consumer Spotlight examines consumers' personal characteristics, lifestyles, attitudes, behaviours and experiences, and assigns a potential risk rating.

23 See e.g. International Organization of Securities Commissions, Technical Committee, *Principles on Point of Sale Disclosure* (Final Report, February 2011), online: International Organization of Securities Commissions http://www.iosco.org/library/pubdocs/pdf/IOSCOPD343.pdf.

24 See e.g. ASIC's MoneySmart, *Other languages*, online at: MoneySmart https://www.moneysmart.gov.au/tools-and-resources/publications/other-languages, with publications, audio and video recordings in 26 languages.

- In a recent campaign focused on investment-linked assurance schemes, the SFC's Investor Education Centre used a variety of delivery methods, including video broadcasts on its website, TV and YouTube, as well as brochures distributed through intermediaries.
- Singapore's MoneySENSE 2013 Mind Your Money TV campaign targeted an older Chinese-speaking audience that prefers skits and local celebrity interviews.[25]
- The SC, the CMB and the SEC Thailand have mobile applications that provide basic information on products, intermediaries and investor alerts.
- The SEC's Twitter account dedicated to investor education, @SEC_Investor_Ed, had over 40,000 followers as of March 2014.
- Together with other national regulators, the CMVM launched the "*Todos Contam*" gateway in 2012, which aims to expose the basic concepts related to more frequent financial decisions and also provides tools for managing personal finance and savings from different investment aspects throughout the different stages of life (studying, first employment, buying a home or a car, starting a family, planning for retirement, unemployment, divorce and illness).

Practice 4

Consider insights gathered from research when developing investor education and financial literacy programs.

Explanatory text
Ideally, the design and implementation of investor education and financial literacy programs should be evidenced based. They should take into account insights gained from research, *including* behavioural economics, to better understand the decision-making behaviours of the target retail investor.

A number of C8 members use a range of quantitative and qualitative research to inform their work on investor education, including website content and design. Ongoing research, such as *surveys* or analysis of user patterns on websites, may also help identify investor needs, preferences and decision-making behaviours. Research can also identify needs and priorities that are specific to local culture and demographics.

Examples
- The FSB commissioned the Human Science Research Council of South Africa to conduct a nationally representative baseline survey on financial literacy. The results showed how people best learn and what mechanism works best to create awareness and develop skills.
- The FCA uses ongoing research on consumer psychology and behavioural biases to inform its education and financial literacy programs.
- ASIC commissions qualitative research into specific population groups to ensure its financial education programs are effective.
- The OSC's GetSmarterAboutMoney website relies on research that identifies online investor preferences to guide development of content, style and distribution on its website.
- The AMF Quebec Financial Awareness Index measures the rate of adoption of 40 advised financial behaviours. Annual campaigns are developed to focus on the shortcomings of investors.

[25] MoneySENSE is a national financial education programme in Singapore, led by MAS and several other public sector agencies.

- The CMVM conducted literacy surveys in order to assess the profile and knowledge of domestic investors and a study based on "mystery shopping" procedures to measure financial intermediaries' abilities and knowledge.

Practice 5

Develop investor education and financial literacy programs with clear and measurable outcomes, and where possible, evaluate them on an ongoing basis.

Explanatory text
Program monitoring and evaluation is important for assessing a program's effectiveness, identifying areas for improvement and verifying whether the program makes good use of *resources*. It can also help inform the development of future programs. However, measuring program outcomes has been challenging because the effects often take years to materialise. Work in this area continues to evolve.

Typical measurements for financial literacy include testing before and after workshops to ascertain immediate understanding of knowledge, surveys to determine awareness and usage of materials and/or tools, website analytics and stakeholder consultation. Surveys may also be conducted to measure behavioural changes.

Ideally, evaluations should take into account the specific objectives of the program, its scope, its target audience and delivery method. Different program objectives often require a different evaluation design. For example, some securities regulators have pilot-tested investor education and financial literacy programs to determine their effectiveness and make improvements before broad implementation.

Examples
- ASIC and the FSB have built an evaluation mechanism into their financial literacy programs.[26]
- The CNMV, in collaboration with the Bank of Spain as part of its financial education program in schools in 2012-13, had an external specialist design and implement the evaluation of the program.

Practice 6

Collaborate or partner with other relevant organisations in developing and delivering investor education and financial literacy programs.

Explanatory text
In order to maximize limited resources and leverage each other's strengths, securities regulators may look for opportunities to partner with other public, private, not-for-profit and community-based organizations, and educational institutions.[27] Many securities regulators

[26] ASIC's National Financial Literacy Strategy recognises that measurement and evaluation of financial literacy programs is critical. The annual reports on ASIC's financial literacy programs are available at National Financial Literacy Strategy, *ASIC's financial literacy reports*, online: National Financial Literacy Strategy http://www.financialliteracy.gov.au/asic-programs/asics-financial-literacy-reports. In South Africa, the FSB has developed a guide for monitoring and evaluating financial education projects and programs.

[27] ASIC, for example, hosts a monthly '*Community of Practice*' meeting to promote dialogue, partnerships and information exchange between all those involved in financial literacy work. The

also partner with self-regulatory organizations or investor associations.[28]

Partnership opportunities may also arise with industry associations, professional bodies, intermediaries,[29] financial institutions and other market participants. These organisations may have particular knowledge of the needs of a certain target retail investor audience or be better placed to have interactions with investors.

When partnering with the financial industry, it is important that securities regulators avoid conflicts of interest or the appearance of conflicts of interest. Investor education and financial literacy programs provided by securities regulators should be independent, fair and unbiased and be clearly distinguished from promotional or commercial materials. For example, many securities regulators are not permitted to endorse any products or services and must avoid the appearance of endorsing any products or services, including those of any partner market participant.

Examples

- The AMF collaborates on educational campaigns with the French Institute for Public Financial Education, which is partially funded by the regulator. The AMF has also entered into a partnership agreement with the National Consumers Institute to provide consumers with information about financial products and services.
- The SC collaborates with Malaysia's central bank, the police and stock exchange on investor education programs.
- The CNMV works collaboratively with the Bank of Spain in its outreach efforts, as does the SEC Nigeria with its financial institutions and stock exchange.
- In September 2013, the SEC Thailand signed a memorandum of understanding with 13 Thai agencies and associations to promote financial literacy.[30]
- A number of C8 members, such as the SFC and MAS, leverage the expertise and knowledge of other public sector agencies, consumer/investor and industry associations in developing and delivering education messages.
- The OSC's GetSmarterAboutMoney website partners with national news media to promote and distribute investor education content.[31]
- The SEC works closely with other regulators to issue joint alerts and bulletins on regulatory issues relevant to retail investors.

Community has over 400 participants from the education, financial services, not-for-profit and government sectors in Australia and New Zealand.

28 The Quebec AMF, for example, has partnered with the Chambre de la sécurité financière on continuous education units for financial advisers, focused on tools and programs of interest to their clients.

29 The term "intermediaries" is defined in the IOSCO Principles as *"Market intermediaries generally include those who are in the business of managing individual portfolios, executing orders and dealing in, or distributing, securities."* IOSCO Methodology, *supra* note 4 at 175.

30 The "*Financial Literacy: Road to Thailand's Prosperity*" project includes the SEC Thailand, the Office of Insurance Commission, the Social Security Office, the Government Pension Fund, the Stock Exchange of Thailand, the Federation of Thai Capital Market Organizations, the Thai Bond Market Association, the National Credit Bureau, the Association of Thai Securities Companies, the Association of Investment Management Companies, the Thai Investors Association, the Thai Listed Companies Association, the Thai Financial Planners Association and the Securities Analysts Association.

31 See The Globe and Mail, *Globe Investor: Investor Education*, online: The Globe and Mail at: http://www.theglobeandmail.com/globe-investor/investor-education.

- In 2006, the CVM launched the Education Advisory Committee (*Comitê Consultivo de Educação*), gathering together Brazilian self-regulatory organisations and capital market associations to promote joint initiatives for investors.

Practice 7

When developing investor education and financial literacy programs, consider national strategies and/or collaboration with other organisations to complement or reinforce financial education and financial consumer protection programs generally.

Explanatory text
Due to the scope of their mandates or limited resources, many securities regulators collaborate with national and local governments (including educational institutions) to facilitate comprehensive investor education and financial literacy programs in their *respective* jurisdictions. For example, a number of C8 members work closely with departments of education and have developed specific financial literacy tools and materials for use by teachers in schools.[32]

Some national strategies take a holistic approach to financial education, which may help to avoid duplication of effort and resources, identify inefficiencies and gaps in the overall financial *education* framework, and raise awareness of financial literacy issues at the national level.

Examples
- In 2011, ASIC developed the first Australian National Financial Literacy Strategy to provide a national framework for financial literacy based on stakeholder collaboration, research and international best practice. The strategy was comprehensively reviewed and updated in 2013.
- In Turkey, a National Financial Education Strategic Plan is expected to be implemented nationwide with the Ministry of Education.
- The CMVM, with the endorsement of Portugal's Minister of State and Finance, participated with representatives from the central bank and insurance and pension funds supervisory authority in the preparation of a National Plan for Financial Education 2011-15. The plan is aimed at establishing a national framework for financial education projects. Training sessions for teachers, educators and also professionals who are in contact with the public and play a role in investor protection are in progress.[33]
- The CNV recently created an Investor Protection and Financial Education division, aimed at developing a national financial education program that is aligned with international standards of investor education.
- The CVM coordinated the working group set up by the Brazilian financial regulators to propose the National Strategy for Financial Education ("*Estratégia Nacional de Educação Financeira – ENEF*)". The ENEF`s Presidential decree was enacted in 2010.

32 See e.g. ASIC's MoneySmart Teaching, online: MoneySmart Teaching at: http://teaching.moneysmart.gov.au and OSC's InspireFinancialLearning.ca, online at: InspireFinancialLearning.ca http://www.inspirefinanciallearning.ca.

33 See Conselho Nacional de Supervisores Financeiros, *National Plan for Financial Education 2011-2015* (Lisbon, October 2011), online at: Banco de Portugal Eurosistem http://clientebancario.bportugal.pt/pt-PT/Publicacoes/PNFF/Documents/National%20Plan%20for%20Financial%20Education%20(2011-2015)%20-%20Portugal.pdf.

As part of the National Strategy, the CVM coordinated the High School Financial Education pilot project, spanning six states, 868 schools, and approximately 20,000 high school students in Brazil (2010-2011)[34].

Practice 8

Promote international cooperation, sharing of information and coordination on investor education and financial literacy, including forums for exchange of information and experiences within IOSCO and with other agencies and organisations.

Explanatory text

Many jurisdictions coordinate and harmonise investor education and financial literacy programs as much as possible, particularly if directed at a shared target audience, such as investors engaged in cross-border investment activities. The sharing of investor education ideas and initiatives among IOSCO members and with other agencies and organisations is a valuable resource for jurisdictions, especially in today's increasingly interconnected markets. C8 members are also actively engaged in other global agencies and networks to share information and expertise.

Examples

- IOSCO publishes on its website alerts and warnings that IOSCO members issue about firms that are not authorised to provide investment services in their jurisdiction.[35]
- In June 2013, IOSCO launched a new online tool, the "*Investor Education Gateway*," on the public area of IOSCO's website.[36] The Gateway's "*Investor Education Portal*"[37] provides access to information voluntarily provided by approximately 50 IOSCO members regarding their web-based investor education work. The Gateway showcases the work of IOSCO members and provides a mechanism for sharing their web-based investor education programs within the global community. The Gateway also contains IOSCO reports and presentations on investor education.

---

34 See World Bank, *The Impact of High School Financial Education: Experimental Evidence from Brazil* (Washington, December 2013), online at: http://go.worldbank.org/CXVCRMPFE0/.

35 International Organization of Securities Commissions, *Investor Alerts*, online: International Organization of Securities Commissions at: http://www.iosco.org/investor_alerts/.

36 International Organization of Securities Commissions, *Investor Education Gateway*, online at: International Organization of Securities Commissions http://www.iosco.org/investor_education/.

37 International Organization of Securities Commissions, *Investor Education Portal*, online: International Organization of Securities Commissions at: http://www.iosco.org/investor_education/index.cfm?section=portal.

Appendix 1 – C8 members

Ontario (Chair)	Ontario Securities Commission (OSC)
Brazil (Vice-Chair)	Comissão de Valores Mobiliários (CVM)
Argentina	Comisión Nacional de Valores (CNV)
Australia	Australian Securities and Investments Commission (ASIC)
Belgium	Financial Services and Markets Authority (FSMA)
China, People's Republic of	China Securities Regulatory Commission (CSRC)
Chinese Taipei	Financial Supervisory Commission (FSC)
France	Autorité des marchés financiers (AMF)
Germany	Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin)
Hong Kong	Securities and Futures Commission (SFC)
India	Securities and Exchange Board of India (SEBI)
Italy	Commissione Nazionale per le Società e la Borsa (CONSOB)
Japan	Financial Services Agency (JFSA)
Japan	Japan Securities Dealers Association (JSDA) (Observer)
Jersey	Jersey Financial Services Commission (Jersey FSC)
Luxembourg, Grand Duchy of	Commission de surveillance du secteur financier (CSSF)
Malaysia	Securities Commission (SC)
Mexico	Comisión Nacional Bancaria y de Valores (CNBV)
Netherlands, The	The Netherlands Authority for the Financial Markets (AFM)
Nigeria	Securities and Exchange Commission (SEC Nigeria)
Portugal	Comissão do Mercado de Valores Mobiliários (CMVM)
Quebec	Autorité des marchés financiers (AMF Quebec)
Singapore	Monetary Authority of Singapore (MAS)
South Africa	Financial Services Board (FSB)
Spain	Comisión Nacional del Mercado de Valores (CNMV)
Sweden	Finansinspektionen
Thailand	Securities and Exchange Commission (SEC Thailand)
Turkey	Capital Markets Board (CMB)
United Kingdom	Financial Conduct Authority (FCA)
United States of America	Securities and Exchange Commission (SEC)
United States of America	Commodity Futures Trading Commission (CFTC)
United States of America	Financial Industry Regulatory Authority (FINRA)
IOSCO	IOSCO Education and Training Team

Appendix 2 – Behavioural economics and other findings related to financial decision-making

Behavioural economics studies psychology and microeconomic decision-making from the perspective that the efficient market hypothesis is a flawed or incomplete construct. The research indicates that individuals often act irrationally due to cognitive processes and environmental conditions.[38] In the saving and investing environment, there is evidence that people make poor financial decisions due to various biases, for example, inertia, loss aversion, procrastination, perceived lack of knowledge, cultural sensitivities and a variety of environmental stimuli.

Behavioural economics analysis generally measures the outcomes of participant behaviour in controlled experiments that attempt to model realistic scenarios faced by the investing public. Behavioural responses to investment decision-making have been documented through academic research in recent years.[39] A catalogue of behavioural economics research is annotated in Appendix 3.

The research highlights a number of behavioural responses in financial decision-making that have important implications for the design of investor education and financial literacy strategies. The most significant of these responses are noted below, followed by other biases and effects that can have an impact on financial decision-making.

Key behavioural responses in financial decision-making

- **Anchoring and adjustment** – an initial value or starting point influences the final decision.[40] The anchoring effect decreases but does not vanish with higher cognitive ability.

- **Choice preference** – too many options inhibit or overwhelm selection decision-making.[41]

- **Confirmation bias** – people use data selectively to agree or confirm their existing views.[42] Investors with a stronger confirmation bias also exhibit greater overconfidence.[43]

---

38 For a fuller discussion of behavioural economics, see U.S., *Behavioral Patterns and Pitfalls of U.S. Investors: A Report Prepared by the Federal Research Division, Library of Congress under an Interagency Agreement with the Securities and Exchange Commission* (Washington, D.C.: 2010), online: U.S. Securities and Exchange Commission at: http://www.sec.gov/investor/locinvestorbehaviorreport.pdf.

39 *Annotated Bibliography on the Behavioral Characteristics of U.S. Investors*: *A Report Prepared by the Federal Research Division, Library of Congress under an Interagency Agreement with the Securities and Exchange Commission* (Washington, D.C.: 2010), online: U.S. Securities and Exchange Commission at: http://www.sec.gov/investor/locinvestorbehaviorbib.pdf.

40 Oscar Bergman *et al.*, "Anchoring and cognitive ability" (2010) 107:1 Economics Letters 66. For a literature review, see also Adrian_Furnham & Hua Chu Boo, "*A literature review of the anchoring effect*" (2011) 40:1 The Journal of Socio-Economics 35.

41 Sheena Sethi-Iyengar, Gur Huberman, and Wei Jiang, "*How Much Choice is Too Much*? Contributions to 401(k) Retirement Plans" in Olivia S. Mitchell & Stephen P. Utkus, eds., *Pension Design and Structure: New Lessons from Behavioral Finance* (Oxford: Oxford University Press, 2004) 83.

42 Warren Bailey, Alok Kumar & David Ng, "*Behavioral biases of mutual fund investors*" (2011) 102:1 Journal of Financial Economics 1.

- **Conflict disclosure** – disclosing a conflict of interest may make it more likely that the conflict will actually occur as it increases levels of trust.[44]

- **Inertia** – the default option becomes the de facto selection even if it is not the optimal choice.[45]

- **Loss aversion** – people more strongly prefer to avoid small losses than acquire larger gains.[46] Loss aversion is not invoked when spending money that is within an intended budget for purchases, but only when operating outside the intended budget.[47] Loss aversion can actually be a motivation to invest to the extent that when people perceive a loss, they become risk-seeking as opposed to risk averse. When assessing a situation from the perspective of a potential loss, "loss framing" will occur. An investor on a losing streak, for example, may well decide that greater risk is necessary to achieve their target.[48] See also "framing effect" in Other biases and effects related to financial decision-making.

- **Myopic loss aversion** – combination of loss aversion and a tendency to evaluate outcomes frequently. This leads investors to be more willing to invest a greater proportion of their portfolio in risky assets if they evaluate their investments less frequently. [49]

- **Overconfidence** – people tend to trade frequently and hurt their own investment performance.[50] Investors are more likely to be overconfident when they are less

---

43 JaeHong Park *et al.*, "*Confirmation Bias, Overconfidence, and Investment Performance: Evidence from Stock Message Boards*" (2010) McCombs Research Paper Series No. IROM-07-10, online: Social Science Research Network http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1639470. .

44 Sunita Sah, George Loewenstein & Daylian M. Cain, "*The Burden of Disclosure: Increased Compliance with Distrusted Advice*" (2013), 104:2 Journal of Personality and Social Psychology 289. See also Daylian M. Cain, George Loewenstein & Don A. Moore, "*The Dirt on Coming Clean: Perverse Effects of Disclosing Conflicts of Interest*" (Working paper, 1 December 2003), online: Social Science Research Network http://ssrn.com/abstract=480121.

45 John Leonard Beshears *et al.*, "*The Importance of Default Options for Retirement Savings Outcomes: Evidence from the United States*" in Stephen J. Kay & Tapen Sinha, eds., *Lessons from Pension Reform in the Americas* (New York: Oxford University Press, 2008) 59.

46 See also Terrance Odean, "*Are Investors Reluctant to Realize their Losses*?" (1998) 53:5 The Journal of Finance 1775.

47 Shlomo Benartzi & Richard H. Thaler, "*Risk Aversion or Myopia? Choices in Repeated Gambles and Retirement Investments*" (1999) 34:3 Management Science 364. Nathan Novemsky & Daniel Kahneman, "*The Boundaries of Loss Aversion*" (2005) 42:2 Journal of Marketing Research 119, cited in Tommy Gärling *et al.,* "*Psychology, Financial Decision Making, and Financial Crises*" (2010) 10:1 Psychological Science in the Public Interest 1.

48 Philippe Kattan, "*Why should Law care about Stock Market Psychology? Behavioural Finance Insights into Investors and Broker Decision-Making*" (Centre for Business Law and International Trade, University of Montreal, May 2006).

49 Sholomo Benartzi & Richard H. Thaler, "*Myopic Loss Aversion and the Equity Premium Puzzle*" (1995) 110 Quarterly Journal of Economics 75, cited in Gary Charness & Uri Gneezy, "*Portfolio Choice and Risk Attitudes: An Experiment*" (2010) 48:1 Economic Inquiry 133.

50 Margarida Abreu & Victor Mendes, "*Information, overconfidence and trading: Do the sources of information matter?*" (2012) 33:4 Journal of Economic Psychology 868. See also Brad M. Barber & Terrance Odean, "*Online Investors: Do the Slow Die First*?" (2002) 15:2 The Review of Financial Studies 455.

experienced as they learn about their true ability through experience.[51] Investors with biased information-processing behaviour in virtual communities are likely to trade more actively and realise worse performance due to their overconfidence.[52] Overconfident investors, who show a better than average bias, trade more frequently.

- **Temporal framing** – people too heavily discount future benefits in lieu of present consumption.[53]

Other biases and effects related to financial decision-making

- **Ambiguity aversion** – the desire to avoid unclear circumstances, even when this will not increase the expected utility.[54]

- **Availability heuristic** – people judge the frequency or probability of some events on the basis of how easily examples or instances can be recalled or remembered.[55]

- **Disposition effect** – the propensity of an investor to sell winners too early and hold losers too long.[56]

- **Endowment effect** – people demand a higher price to sell something they own than they are willing to pay for acquiring it.[57] This effect may occur for goods whose possession is merely desired.[58] The effect is reduced if a negative mood is induced before the good is acquired.[59]

---

51 Brad M. Barber & Terrance Odean, "*The Internet and the Investor*" (2001) 15:1 Journal of Economic Perspectives 41, cited in Park *et al.*, *supra* note 43.

52 *Ibid.*

53 Jeffrey R. Brown, Jeffrey R. Kling, Sendhil Mullainathan & Marian V. Wrobel, "Why Don't People Insure Late-Life Consumption? A Framing Explanation of the Under-Annuitization Puzzle" (2008) 98:2 American Economic Review 304-309.

54 Daniel Ellsberg, ''*Risk, Ambiguity and the Savage Axioms*''(1961) 75:4 The Quarterly Journal of Economics 643, cited in Charness & Gneezy, *supra* note 49.

55 Ning An & Xiaoxiao Shi, *Cognitive Ability and Psychological Biases: Perspective from Chinese stock individual investors* (Masters Thesis, Umeå School of Business, 2012) [unpublished], online: Umeå University http://umu.diva-portal.org/smash/get/diva2:513883/FULLTEXT01.pdf.

56 Hersh Shefrin & Meir Statman, "The Disposition to Sell Winners Too Early and Rise Losers Too Long" (1985) 40 Journal of Finance 777; Odean, *supra* note 46; Alok Kumar & Sonya S. Lim, "How do Decision Frames Influence the Stock Investment Choices of Individual Investors?" (2008) 54 Management Science 1052, cited in Bailey, Kumar & Ng, *supra* note 42.

57 Daniel Kahneman, Jack L. Knetsch & Richard H. Thaler, "Experimental Tests of the Endowment Effect and the Coase Theorem" (1990), 98:6 Journal of Political Economy 1325, cited in Gärling *et al.*, *supra* note 47; Jack L. Knetsch, "The Endowment Effect and Evidence of Nonreversible Indifference Curves" (1989) 79:5 The American Economic Review 1277, cited in Gärling *et al.*, *supra* note 47; see Ronald G. Cummings *et al.*, *Valuing Environmental Goods: An Assessment of the Contingent Valuation Method* (New York: Rowman & Allanheld, 1986), cited in Gärling *et al.*, *supra* note 47 and for reviews, Novemsky & Kahneman, *supra* note 47.

58 Ziv Carmon, Klaus Wertenbroch & Marcel Zeelenberg, "*Option Attachment: When Deliberating Makes Choosing Feel Like Losing*" (2003) 30 Journal of Consumer Research 15, cited in Gärling *et al.*, *supra* note 47.

59 Jennifer S. Lerner, Deborah A. Small & George Loewenstein, "*Heart Strings and Purse Strings: Carry-over Effects of Emotions on Economic Transactions*" (2004) 15 Psychological Science 337, cited in Gärling *et al.*, *supra* note 47.

- **Framing effect** – a decision is influenced by the phrasing or frame in which the problem is presented.[60]

- **Fund-level inattention** – the propensity to trade mutual funds around macroeconomic news events.[61]

- **Herding** – a phenomenon where many people take the same action.[62] Information concerning the number of previous transactions in the market is particularly relevant to explain herding propensity among investors.[63]

- **Illusion of control** – the expectancy of personal success is inappropriately higher than the objective probability would warrant.[64]

- **Inattention to earnings news** – degree to which an investor does not trade a particular individual stock around earnings news.[65]

- **Inattention to macroeconomic news** – degree to which an investor does not trade any individual stocks around macroeconomic news events.[66]

- **January effect** – the tendency for excess share returns in the first few days of January.[67]

- **Local bias** – the propensity to select funds or stocks with headquarters close to the investor's geographical location.[68]

- **Lottery stock preference** – the propensity to select stocks with lottery-like features (low price, volatile returns and skewed returns).[69]

- **Narrow framing** – the propensity to select investments individually, instead of considering the broad impact on the portfolio.[70]

---

60 An & Shi, *supra* note 55.

61 Bailey, Kumar & Ng, *supra* note 42.

62 An & Shi, *supra* note 55.

63 Beatriz Fernández *et al.*, "*Herding, information uncertainty and investors' cognitive profile*" (2011) 3:1 Qualitative Research in Financial Markets 7

64 Ellen J. Langer, ''*The Illusion of Control*'' (1975) 32:2 Journal of Personality and Social Psychology 311, cited in Charness & Gneezy, *supra* note 49.

65 Bailey, Kumar & Ng, *supra* note 42.

66 *Ibid*.

67 An & Shi, *supra* note 55.

68 Bailey, Kumar & Ng, *supra* note 42.

69 Nicholas Barberis & Ming Huang, "*Stocks as Lotteries: The Implications of Probability Weighting for Security Prices*" (2008) 98:5 American Economic Review 2066, cited in Bailey, Kumar & Ng, *supra* note 42 and Alok Kumar, "*Who Gambles in the Stock Market*?" (2009) 64:4 The Journal of Finance 1889, cited in Bailey, Kumar & Ng, *supra* note 42.

70 Daniel Kahneman & Dan Lovallo, "*Timid Choices and Bold Forecasts: A Cognitive Perspective on Risk Taking*" (1993) 39:1 Management Science 17, cited in Bailey, Kumar & Ng, *supra* note 42; Daniel Kahneman, "Maps of Bounded Rationality: Psychology for Behavioral Economics" (2003) 93:5

- **Present bias** – the inordinate weight people place on costs and benefits that are immediate.[71]

- **Regret** – a human emotion that can influence decisions.[72]

- **Representativeness** – evaluation of the degree of correspondence between a sample and a population, an instance and a category, or more generally, an outcome and a model.[73]

- **Risk aversion** – when individuals have the same level of financial education, there is no gender difference in the level of risk aversion.[74]

- **Small-firms effect** – the shares of smaller firms have outperformed those of larger firms over a period of several decades.[75]

- **Weekend effect** – there appear to be abnormal returns on Fridays and relative falls on Mondays.[76]

American Economic Review 144, cited in Bailey, Kumar & Ng, *supra* note 42; and Kumar & Lim, *supra* note 56.

71 George A. Akerlof, "*The short-run demand for money: A new look at an old problem*" (1982) 72:2 The American Economic Review 35, cited in Punam Anand Keller *et al.*, "*Enhanced active choice: A new method to motivate behavior change*" (2011) 21:4 Journal of Consumer Psychology 376, and Ted O'Donoghue & Matthew Rabin, "Doing It Now or Later" (1999) 89:1 The American Economic Review 103, cited in Keller *et al., ibid.*

72 An & Shi, *supra* note 55.

73 *Ibid.*

74 Ann Marie Hibbert, Edward R. Lawrence & Arun J. Prakash, "*Does knowledge of finance mitigate the gender difference in financial risk-aversion?*" (2013) 24:2 Global Finance Journal 140

75 An & Shi, *supra* note 55.

76 *Ibid.*

Appendix 3 – Behavioural economics literature review

Date	**Reference**
Investing	
2013	Glaser, Markus & Torsten Walther, "*Run, Walk, or Buy? Financial Literacy, Dual-Process Theory, and Investment Behavior*" (Working paper, 30 April 2013), online: Social Science Research Network http://ssrn.com/abstract=2336109.
2013	Hibbert, Ann Marie, Edward R. Lawrence & Arun J. Prakash, "*Does knowledge of finance mitigate the gender difference in financial risk-aversion?*" (2013) 24:2 Global Finance Journal 140.
2013	Howard, C. Thomas, "*Behavioural portfolio management*" (Working paper, 31 May 2013), online: Social Science Research Network http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2210032 .
2013	Kahneman, Daniel, "*Behavioral Economics and Investor Protection: Keynote Address*" (Speech delivered at the Behavioral Economics and Investor Protection Conference at Loyola University Chicago School of Law, 5 October 2012), (2013) 44 Loyola University Chicago Law Journal 1333.
2013	Nardy, Andrew & Rubens Fama, "*Behavioral Finance from 2001-2012: Concepts, Themes and Academic Production*" (Working paper, 29 September 2013), online: Social Science Research Network http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2333121.
2013	O'Connor, Lisa, "*Investors' Information Sharing and Use in Virtual Communities*" (2013) 64:1 Journal Of The American Society For Information Science And Technology 36.
2013	Pevzner, Mikhail, Fei Xie & Xiangang Xin, "*When firms talk, do investors listen? The role of trust in stock market reactions to corporate earnings announcements*" Journal of Financial Economics [forthcoming], online: Social Science Research Network http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2144835.
2013	Salzman, Diego & Remco C.J. Zwinkels, "*Behavioural real estate*" (Discussion paper, 3 July 2013), online: Tinbergen Institute www.papers.tinbergen.nl/13088.pdf .
2013	Sicherman, Nachum *et al*., "Financial Attention" (Working paper, 10 October 2013), online: Social Science Research Network http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2339287.
2013	Suresh, Anli, "*Understanding Behavioral Finance Through Biases and Traits of Trader Vis-À-Vis Investor*" (2013) 4:2 Journal of Finance, Accounting and Management 11.
2013	Taylor, Matthew P., "*Bias and brains: Risk aversion and cognitive ability across real and hypothetical settings*" (2013) 46:3 Journal of Risk and Uncertainty 299.
2013	Walther, Torsten, "*The Information Acquisition Process of Individual Investors*" (Working paper, 30 August 2013), online: Social Science Research Network http://ssrn.com/abstract=2254770.
2012	Abreu, Margarida & Victor Mendes, *"Information, overconfidence and trading: Do the sources of information matter*?" (2012) 33:4 Journal of Economic Psychology 868.

2012	An, Ning & Xiaoxiao Shi, *Cognitive Ability and Psychological Biases: Perspective from Chinese stock individual investors* (Master Thesis, Umeå School of Business, 2012) [unpublished], online: Umeå University http://umu.diva-portal.org/smash/get/diva2:513883/FULLTEXT01.pdf.
2012	Carpentier, Cécile, & Jean-Marc Suret, "*Financial knowledge and rationality of Canadian investors*" (18 March 2012), online: Autorité des marchés financiers http://www.lautorite.qc.ca/files/pdf/fonds-education-saine-gouvernance/finances-perso/fin-perso_ulaval_knowledge-rationality.pdf.
2012	Kay, John, *The Kay Review of UK Equity Markets and Long-Term Decision Making: Final Report* (July 2012).
2012	Li, Jun & Jianfeng Yu, "*Investor attention, psychological anchors, and stock return predictability*" (2012) 104:2 Journal of Financial Economics 401.
2012	Liberali, Jordana M. *et al.*, "*Individual differences in numeracy and cognitive reflection, with implications for biases and fallacies in probability judgment*" (2012) 25:4 Journal of Behavioral Decision Making 361.
2012	Stephens, Thomas Alexander & Jean-Robert Tyran, "'*At Least I Didn't Lose Money' - Nominal Loss Aversion Shapes Evaluations of Housing Transactions*" (University of Copenhagen Dept. of Economics Discussion Paper No. 12-14, 12 October 2012).
2011	Almlund, Mathilde *et al.*, "*Personality psychology and economics*" (NBER Working Paper 16822, 2011), online: National Bureau of Economnic Research <http://www.nber.org/papers/w16822.pdf?new_window=1>.
2011	Bailey, Warren, Alok Kumar & David Ng, "*Behavioral biases of mutual fund investors*" (2011) 102:1 Journal of Financial Economics 1.
2011	Barber, Brad M. & Terrance Odean, "*The Behavior of Individual Investors*" (Working paper, 7 September 2011), online: Social Science Research Network http://ssrn.com/abstract=1872211.
2011	Bollen, Johan, Huina Mao & Xiao-Jun Zeng, "*Twitter mood predicts the stock market*" (2011) 2:1 Journal of Computational Science 1.
2011	Fernández, Beatriz *et al.*, "*Herding, information uncertainty and investors' cognitive profile*" (2011) 3:1 Qualitative Research in Financial Markets 7.
2011	Furnham, Adrian & Hua Chu Boo, "*A literature review of the anchoring effect*" (2011) 40:1 The Journal of Socio-Economics 35.
2011	Kourtidis, Dimitrios, Željko Šević & Prodromos Chatzoglou, "*Investors' trading activity: A behavioural perspective and empirical results*" (2011) 40:4 The Journal of Socio-Economics 548.
2011	Van Rooij, Maarten, Annamaria Lusardi Rob & Alessie, "*Financial literacy and stock market participation*" (2011) 101:2 Journal of Financial Economics 449.
2010	Barnea, Amir, Henrik Cronqvist & Stephan Siegel, "*Nature or nurture: What determines investor behavior*?" (2010) 98:3 Journal of Financial Economics 583.
2010	Bergman, Oscar *et al.*, "*Anchoring and cognitive ability*" (2010) 107:1 Economics Letters 66.

2010	Charness, Gary & Uri Gneezy, "*Portfolio Choice and Risk Attitudes: An Experiment*" (2010) 48:1 Economic Inquiry 133.
2010	Christelis, Dimitris, Tullio Jappelli & Mario Padula, "*Cognitive abilities and portfolio choice*" (2010) 54:1 European Economic Review 18.
2010	European Commission, *Consumer Decision-Making in Retail Investment Services: A Behavioural Economics Perspective; Final Report* (2010), online: European Commission http://ec.europa.eu/consumers/strategy/docs/final_report_en.pdf.
2010	Forbes, James, & S. Murat Kara, "*Confidence mediates how investment knowledge influences investing self-efficacy*" (2010) 31:3 Journal of Economic Psychology 435.
2010	Hsu, Yenshan, & Cheng-Yi Shiu, "*The overconfidence of investors in the primary market*" (2010) 18:2 Pacific-Basin Finance Journal 217.
2010	Korniotis, George M. & Alok Kumar, "*Cognitive abilities and financial decisions*" in H. Kent Baker & John R. Nofsinger, eds., *Behavioral Finance: Investors, Corporations, and Markets* (Hoboken: John Wiley & Sons, 2010).
2010	Linciano, Nadia, "*Cognitive Biases and Instability of Preferences in the Portfolio Choices of Retail Investors*" (Working paper, Commissione Nazionale Per Le Società E La Borsa, January 2010).
2010	Williamson, Kirsty, "*Empowered or Vulnerable? The Role of Information for Australian Online Investors*" (2010) 34:1 Canadian Journal of Information and Library Science 39.
2009	Bauer, Rob, Mathijs Cosemans & Piet Eichholtz, "*Option trading and individual investor performance*" (2009) 33:4 Journal of Banking & Finance 731.
2009	Oechssler, Joerg, Andreas Roider & Patrick W. Schmitz, "*Cognitive abilities and behavioral biases*" (2009) 72:1 Journal of Economic Behavior & Organization 147.
2009	Subrahmanyam, Avanidhar, "*Optimal financial education*" (2009) 18:1 Review of Financial Economics 1.
2008	Chandra, Abhijeet, "*Decision Making in the Stock Market: Incorporating Psychology with Finance*" (MPRA Paper No. 21288, National Conference FFMI 2008 IIT Kharagpur, 29 December 2008), online: Munich Personal RePEc Archive http://mpra.ub.uni-muenchen.de/21288/1/MPRA_paper_21288.pdf
2005	Chen, Qi, Jennifer Francis & Wei Jiang, "*Investor learning about analyst predictive ability*" (2005) 39:1 Journal of Accounting and Economics 3.
2003	Ackert, Lucy F., Bryan K. Church & Richard Deaves, "*Emotion and Financial Markets*" (2003, Second Quarter) Economic Review 33.
Personal finance	
2013	Consumer Financial Protection Bureau, *Navigating the market: A comparison of spending on financial education and financial marketing* (18 November 2013), online: Consumer Financial Protection Bureau http://files.consumerfinance.gov/f/201311_cfpb_navigating-the-market-final.pdf.
2013	Erta, Kristine *et al.*, "*Applying behavioural economics at the Financial Conduct Authority*" (Financial Conduct Authority Occasional Paper No. 1, April 2013), online: Financial Conduct Authority http://www.fca.org.uk/static/documents/occasional-

	papers/occasional-paper-1.pdf.
2013	Fernandes, Daniel, John G. Lynch Jr. & Richard G. Netemeyer, "*Financial Literacy, Financial Education and Downstream Financial Behaviors*" Management Science [forthcoming], online: Social Science Research Network http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2333898.
2011	FINRA Investor Education Foundation, *National Financial Capability Study: Journal Articles*, online: FINRA Investor Education Foundation http://www.usfinancialcapability.org/datainuse.php.
2013	Klapper, Leora, Annamaria Lusardi & Georgios A. Panos, "Financial literacy and its consequences: Evidence from Russia during the financial crisis" (2013) 37:10 Journal of Banking & Finance 3904.
2013	Organisation for Economic Co-operation and Development, Russia Trust Fund for Financial Literacy & Education, *Improving financial education effectiveness through behavioural economics* (2013), online: Organisation for Economic Co-operation and Development http://www.oecd.org/daf/fin/financial-education/TrustFund2013_OECDImproving_Fin_Ed_effectiveness_through_Behavioural_Economics.pdf.
2013	Xiao, Jing Jian, Cheng Chen & Fuzhong Chen, "*Consumer financial capability and financial satisfaction*" (2013) 113:3 Social Indicators Research, online: FINRA Investor Education Foundation http://www.usfinancialcapability.org/downloads/Financial_Satisfaction.pdf.
2012	Altman, Morris, "*Implications of behavioural economics for financial literacy and public policy*" (2012) 41:5 The Journal of Socio-Economic 677.
2012	Bay, Charlotta, Bino Catasùs & Gustav Johed, "*Situating financial literacy*" (Discussion paper, 2012), online: Cardiff Business School http://www.business.cf.ac.uk/sites/default/files/ipa2012/Final_Version_IPA_Paper_Reference_76.docx.
2012	Collins, J. Michael, "*The impacts of mandatory financial education: Evidence from a randomized field study*" (2012) 95 Journal of Economic Behavior & Organization 146.
2012	Holden, Steinar, "*Implications of insights from behavioral economics for macroeconomic models"* (Discussion paper, October 2012), online: University of Oslo http://folk.uio.no/sholden/wp/behavioral-econ-sep12.pdf.
2012	Knoll, Melissa A. Z. & Carrie R. Houts, "The Financial Knowledge Scale: An Application of Item Response Theory to the Assessment of Financial Literacy" (2012) 46:3 Journal of Consumer Affairs 381.
2012	Meier, Stephan & Charles D. Sprenger, "Discounting financial literacy: Time preferences and participation in financial education programs" (2012) 95 Journal of Economic Behavior & Organization 159.
2012	U.K., Cabinet Office Behavioural Insights Team, *Applying behavioural insights to reduce fraud, error and debt* (Cabinet Office Behavioural Insights Team, February 2012), online: GOV.UK https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/60539/BIT_FraudErrorDebt_accessible.pdf

2011	Jappelli, Tullio & Mario Padula, "Investment in financial literacy and saving decisions" (Discussion paper, February 2011), online: VOX http://www.voxeu.org/article/investment-financial-literacy-and-saving-decisions.
2011	Lusardi, Annamaria, Carl-Pierre Michaud & Olivia S. Mitchell, "Optimal Financial Literacy and Saving for Retirement" (Discussion paper, 21 September 2011), online: Université due Québec à Montréal http://www.cirpee.uqam.ca/JOURNEES_CIRPEE_2011/MICHAUD_2011.pdf.
2011	Murray, T. Scott, "Financial literacy: A conceptual review" (Research paper prepared for the Task Force on Financial Literacy, 9 February 2011), online: Government of Canada Publications http://publications.gc.ca/collections/collection_2011/fin/F2-205-2011-eng.pdf.
2011	Schmeiser, Maximilian D. & Jason S. Seligman, "Using the right yardstick: assessing financial literacy measures by way of financial well-being" (Center for Financial Security Research Brief, October 2011), online: Center for Financial Security, University of Wisconsin-Madison http://www.cfs.wisc.edu/briefs/Seligman2011_UsingtheRightYardstickBrief.pdf.
2011	Tomášková, Hana, Hana Mohelská & Zuzana Němcová, "Issues of Financial Literacy Education" (2011) 28 Procedia - Social and Behavioral Sciences 365.
2010	Gärling, Tommy *et al*., "Psychology, Financial Decision Making, and Financial Crises" (2010) 10:1 Psychological Science in the Public Interest 1.
2010	Wolfe-Hayes, Molly A., "Financial literacy and education: An environmental scan" (2010) 42:2 The International Information & Library Review 105.
2008	Barr, Michael S., Sendhil Mullainathan & Eldar Shafir, "Behaviorally Informed Financial Services Regulation" (Report prepared for the New America Foundation Asset Building Program, October 2008).