

Financial Literacy Project

Research Report

WHAT CAUSES SUBOPTIMAL FINANCIAL BEHAVIOUR? AN EXPLORATION OF FINANCIAL LITERACY, SOCIAL INFLUENCES AND BEHAVIOURAL ECONOMICS

RESEARCH REPORT

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The **Financial Literacy Project** is an initiative of the Centre for Corporate Law and Securities Regulation, The University of Melbourne. The project is funded by an Australian Research Council Discovery Grant.

The project will contribute to a broader understanding of the role of financial literacy and consumer behaviour in Australia, and its relationship with Australia's financial services and consumer protection laws.

The project aims to identify key areas of vulnerability for consumers of financial products by researching the causes of suboptimal financial decisions and suggesting responses to those causes.

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Introduction

The aim of the financial literacy project is to contribute to a broader understanding of the role of financial literacy and consumer behaviour in Australia.

Consumers of financial products in Australia need to make sound financial decisions for their economic security, including to plan for their retirement and to provide for their families. The prospects for good decision-making improve with higher levels of financial literacy. This project is an in-depth study of the relationship between financial literacy and consumer behaviour. A survey of the financial literacy of Australian consumers and how they choose financial products will be undertaken. The project will also evaluate the key areas of complexity and vulnerability for Australian consumers in relation to the financial products available to them.

This research report explores the causes of financial behaviour and considers whether suboptimal financial behaviour has causes other than lack of financial literacy.

Part A of the research report explains the importance of financial literacy. This part identifies the benefits of financial literacy to consumers, the community, the economy and the financial markets.

Part B of the research report explains the meaning of financial literacy. This part reviews 23 financial literacy surveys conducted worldwide and refers to academic literature to explain the key competencies and proficiencies of a financially literate consumer.

Part C of the research report outlines the flaws in the decision making processes of consumers when choosing financial products.

Part D of the research report identifies social, psychological and cognitive causes of suboptimal and irrational consumer behaviour. It considers social influences on financial

behaviour such as wealth, income, social capital as well as psychological biases and heuristics studied in behavioural economics and neuroeconomics. The flaws in the decision making process of consumers identified in Part C are linked to internal (psychological and cognitive) and external (social and economic) causes. It is shown in Part D that suboptimal consumer decisions have many causes, not just financial illiteracy.

Part E of the research report reviews 23 financial literacy surveys to explain how financial literacy is measured. It also identifies common findings among the surveys.

The **Appendix** to the research report provides a summary of 23 financial literacy surveys from the World Bank and a number of countries including Australia, the UK, US, Italy, the Netherlands, Singapore, Japan, Austria, Ireland and Russia.

Part A – The Importance of Financial Literacy

I INTRODUCTION

The need for better informed and financially literate consumers has been prompted by the proliferation of complex financial products¹ in the market, the growing number of people reaching retirement, the shift towards personal responsibility to fund retirement, and the advent of electronic and internet banking. Financial products are now increasingly difficult to assess for people unfamiliar with basic financial and economic concepts, and thus the performance of financial products is almost impossible to predict in an informed way.² Education is therefore needed for financially literate, knowledgeable and informed consumers.³

This part explains the importance of financial literacy. This is accomplished by considering the benefits of financial literacy to consumers, the community, and the economy.

II THE BENEFITS OF FINANCIAL LITERACY

Financial literacy is important because it benefits consumers, the financial system and the economy. Financial literacy causes consumers to behave in a particular way, and develop particular attitudes concerning money. The microeconomic benefits to the household extend out to produce macroeconomic benefits for the economy and the financial system.

A The benefits to consumers

Financial literacy gives consumers and households the knowledge and skills necessary to assess the suitability of financial products and investments. This translates into a number of benefits.

¹ Tullio Jappelli, 'Economic Literacy: An International Comparison' (2010) 120 *The Economic Journal* 429, 430.

² European Commission (communication), *Financial Education* (COM(2007) 808 final, 2007) < http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=COMfinal&an_doc=2007&nu_doc=808>.

³ Ibid.

1 *Increased saving and retirement planning*

Financially literate people have a greater capacity to save for retirement⁴ and do so.⁵ This is achieved by financial efficiency which results in saving money, making an effort to set aside money and an enhanced ability to set realistic retirement goals and select suitable investments to realize those retirement goals.⁶ A better-informed consumer will save for the future, for retirement and for unforeseen circumstances and emergencies.⁷ For example, one study found that members of the armed forces who had financial education were more inclined to save regularly, possess a savings account and pay off credit cards.⁸

Saving behaviour is particularly important for Australia, given that a third of Australians surveyed by ANZ expressed their view that superannuation alone would be insufficient to fund retirement.⁹ Low levels of financial literacy are linked with lower long term savings, such as for retirement or superannuation.¹⁰ Further, the 2010 Retirement Confidence

⁴ Thomas Garman, 'Personal Finance Education for Employees: Evidence On The Bottom-line Benefits' (1997) 8 *Financial Counseling and Planning* 1, 6.

⁵ D Bernheim and D Garrett, 'The Determinants and Consequences of Financial Education in the Workplace: Evidence from a Survey of Households' (Working Paper #96-007, 1-52, Stanford University, 1996); Matthew Martin, 'A Literature Review on the Effectiveness of Financial Education' (Working Paper No WP07-3, Federal Reserve Bank of Richmond, 2007) <<http://www.finalist-project.eu/Portals/0/A%20Literature%20Review%20on%20the%20Effectiveness%20of%20Financial%20Education.pdf>>; Mercer, *Mercer 2006 Financial Literacy and Retirement Readiness Study* (2006); Pirmin Fessler, Martin Schürz, Karin Wagner and Beat Weber, 'Financial Capability of Austrian Households' (2007) *Monetary Policy and the Economy* 50 <http://oenb.at/en/img/mop_2007_3_fessler_tcm16-69087.pdf>; Financial Regulator of Ireland, *Financial Capability in Ireland Questionnaire* (2008) <<http://www.financialcapability.ie/files/Financial%20Capability%20Questionnaire.pdf>>; Financial Services Authority, *Levels of Financial Capability in the UK* (2006) <<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>; Annamaria Lusardi, 'Financial Literacy: An Essential Tool for Informed Consumer Choice' (Working Paper No 14084, National Bureau of Economic Research, 2008) <<http://www.nber.org/papers/w14084>>; Andreas Oehler and Christina Werner, 'Saving for Retirement – A Case for Financial Education in Germany and UK? An Economic Perspective' (2008) 31 *Journal of Consumer Policy* 253.

⁶ Studies have linked financial illiteracy with low levels of savings and poor risk diversification. See: Tullio Jappelli, 'Economic Literacy: An International Comparison' (2010) 120 *The Economic Journal* 429, 431.

⁷ European Commission, *Financial Education* <http://europa.eu/legislation_summaries/consumers/protection_of_consumers/l22031_en.htm>.

⁸ Catherine Bell, Dan Goran and Jeanne Hogarth, 'Does Financial Education Affect Soldiers' Financial Behavior?' (Working Paper 2009-WP-08, Networks Financial Institute, 2009).

⁹ SunCorp, *SunCorp Life Confidence Survey* (2010).

¹⁰ Annamaria Lusardi and Olivia Mitchell, 'Planning and Financial Literacy: How Do Women Fare?' (Working Paper No W13750, National Bureau of Economic Research, 2008).

Survey,¹¹ conducted by the Employee Benefit Research Institute in the United States, identified issues that make financial literacy extremely important, namely that fewer people are planning and saving for retirement, more working people admit to having no savings at all, and only 46% of respondents had tried to calculate the amount they would need for retirement.

Financial literacy is useful in life stages where important decisions are made, and as such financial education at these stages can successfully alter behaviour relating to retirement planning and saving.¹² The Secretary-General of the OECD, Donald Johnston, on 12 December 2005, addressed the Financial Education Summit in Kuala Lumpur with the following introduction:

Education about money, and how it works, must be incorporated into our basic education systems. Why? I offer two simple explanations. Individuals and households must have the tools to cope with the increasingly complex world of financial instruments. Understanding the financial world is crucial as people assume more responsibility for their own retirement security because public and private pensions face pressures that threaten their solvency.¹³

The Mercer 2006 Financial Literacy and Retirement Readiness Study found that as financial literacy levels increase, so too does preparedness for retirement. The 2010 Vanguard Retirement Savings Survey¹⁴ showed that retirement plan investors were resilient in volatile markets, reflecting the overall benefits of financial literacy.

Explaining the results of her research with Mitchell, Lusardi writes:

... we found a strong link between retirement planning behaviour and financial

¹¹ Employee Benefit Research Institute, *2010 Retirement Confidence Survey* <<http://www.ebri.org/index.cfm?fa=contact>>.

¹² Andreas Oehler and Christina Werner, 'Saving for Retirement – A Case for Financial Education in Germany and UK? An Economic Perspective' (2008) 31 *Journal of Consumer Policy* 253.

¹³ Donald Johnston, 'Importance of Financial Literacy in the Global Economy' (Speech presented to the Financial Education Summit, Kuala Lumpur, 12 December 2005) <<http://www.oecd.org/dataoecd/15/57/35883324.pdf>>.

¹⁴ *Vanguard, Resilience in Volatile Markets: 401(k) Participant Behavior September 2007–December 2009 (2010)* <<https://institutional.vanguard.com/VGApp/iip/site/institutional/researchcommentary/article?File=RetResResilience>>.

literacy: it is disproportionately those who can make interest rate calculations and who possess some sophisticated knowledge who reported having calculated how much they need to save for retirement. However ... one cannot rule out the possibility that it is the desire to plan for retirement that results in individuals making an effort to increase their financial knowledge, rather than financial knowledge causing individuals to plan for retirement.¹⁵

Research shows that financial literacy has a positive *causal* impact on wealth holdings and savings behaviour.¹⁶ Lusardi establishes this causal link by examining the saving behaviour of people in states which mandate financial education:

We found that individuals who were born in states that mandated financial education in high school were more likely to display higher financial knowledge later in life. Moreover, respondents who received their education in states that not only mandated financial education but also had higher per pupil education spending had higher levels of financial knowledge. Most importantly, after instrumenting financial literacy with mandates across states, interacted with the amount of education expenses per pupil, we found *a strong positive relationship between financial literacy and retirement planning* [emphasis added], even stronger than ... simple estimates [based on secondary survey data].¹⁷

As a result, financial literacy increases awareness of the importance of saving, and planning for retirement.¹⁸ This awareness is shown to increase planning and saving for retirement.

For example, according to the ANZ Survey, better levels of financial literacy are associated with the ownership of superannuation funds. Therefore, financial literacy is correlated with greater voluntary superannuation savings. Figure 1 shows the differences in financial product ownership between the lowest and highest quintile of respondents from the ANZ Survey. A significant majority of the people scoring in the top 20% of the ANZ Survey had a superannuation fund, credit cards, private health insurance, a high

¹⁵ AnnaMaria Lusardi, 'The Importance of Financial Literacy' (2009) *NBER Reporter* <<http://www.nber.org/reporter/2009number2/lusardi.html>>.

¹⁶ D Bernheim, D Garrett and D Maki, 'Education and Saving: The Long-term Effects of High School Financial Curriculum Mandates' (2001) 85 *Journal of Public Economics* 435.

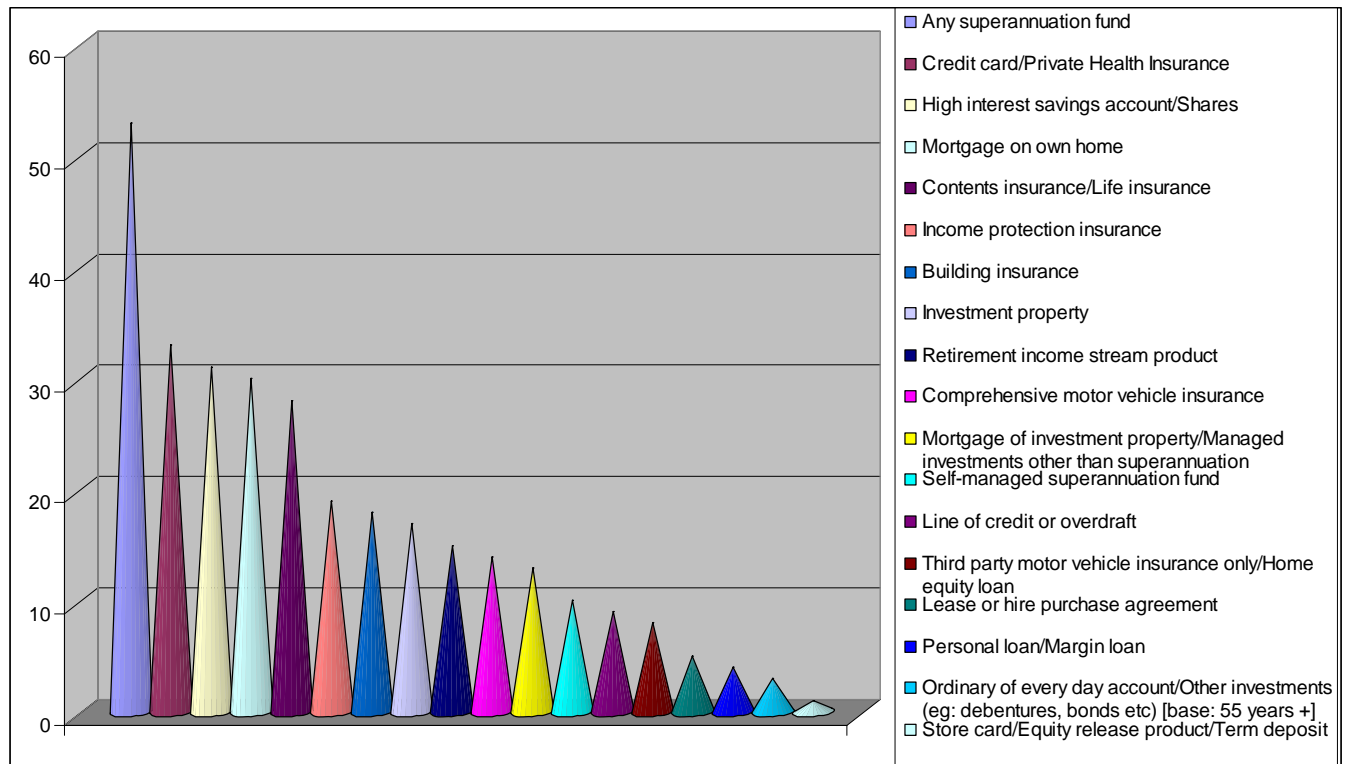
¹⁷ AnnaMaria Lusardi, 'The Importance of Financial Literacy' (2009) *NBER Reporter* <<http://www.nber.org/reporter/2009number2/lusardi.html>>.

¹⁸ Annamaria Lusardi, 'Financial Literacy: An Essential Tool for Informed Consumer Choice' (Working Paper No 14084, National Bureau of Economic Research, 2008) <<http://www.nber.org/papers/w14084>>.

interest savings account and general insurance. In contrast, a minority of people scoring in the bottom 20% of the ANZ Survey owned these products. This is important, because it shows an extremely strong correlation between high financial literacy, and owning these types of financial products.

Figure 1 ranks particular financial products according to their ownership by the top 20% of respondents in the ANZ survey, with each bar representing the difference between the ownership of financial products by the top 20% and bottom 20% of respondents. The vertical axis represents the percentage difference between the top 20% and bottom 20%. For example, the first bar indicates the figure of 53. In the ANZ survey, 98% of the top 20% of respondents were reported to own a superannuation fund, compared with 45% of the bottom 20% of respondents. This reveals a difference of 53. This is significant, and it shows a link between high levels of financial literacy and the ownership of superannuation. The next bar represents credit card ownership and private health insurance. It indicates the figure of 33, while the next bar representing high interest savings accounts and shares indicates a figure of 31. The comparison then continues. The last bar representing store card, equity release products and term deposits indicates a figure of 1. Figure 1 therefore provides a useful graphic illustration of the financial products that tend to be owned by people with higher levels of financial literacy when compared with lower levels of financial literacy. Note that the financial products with the highest differences in ownership tend to relate to long term saving, insurance coverage and investments, while those with the lowest differences in ownership tend to be those that are necessary to function in modern day life. Those with the greatest difference require investment and disposable income.

Figure 1: Financial Literacy and Financial Product Ownership - Difference between the lowest 20% of financial literacy scores and the top 20% of financial literacy scores



(a) Case study: ANZ SaverPlus Program

The ANZ SaverPlus program¹⁹ provides evidence that exposure to optimal financial practices due to incentives can lead to a pattern of behaviour that continues to follow that optimal behaviour even when the incentives are gone. This is a form of financial literacy, whereby the benefits of optimal behaviour (such as saving) are learnt by doing the act rather than learning about it.

In the *ANZ Survey of Adult Financial Literacy in Australia* (“ANZ Survey”),²⁰ it is stated that ‘future surveys could focus on behaviour and the extent to which money management skills and knowledge translate into behaviour’. ANZ’s SaverPlus program

¹⁹ ANZ, *SaverPlus: Making Saving a Lifetime Habit* <<http://www.anz.com/about-us/corporate-responsibility/community/financial-literacy-inclusion/programs/saver-plus>>.

²⁰ *ANZ Survey of Adult Financial Literacy in Australia*, E2.3.

does this by studying the impact of a savings program on financial behaviour and the use of financial products. The results of the study showed that 70% of the participants in the program continue to save at levels equivalent to or exceeding those levels while on the program. Participants attribute this behaviour to the program.²¹ The program aims to influence saving behaviour by encouraging participants to save for a minimum period of 10 months and to reach a savings goal after this period. Once the participants reach their savings goal, ANZ matches the amount saved dollar for dollar up to a value of \$500.²² This experience in saving created an awareness of the importance of consistent saving in small increments, which is the foundation of long term growth in wealth.

The ANZ SaverPlus study cites the work of Kempson and Finney,²³ who identify three types of savers: (1) rainy day savers who save regularly, (2) instrumental savers who save for a purpose and (3) non-savers, of which there are very few people. The study proposes that with the correct education, non-savers can become instrumental savers, and instrumental savers can become rainy day savers. At the start of the SaverPlus program, 56.8% of participants said they tried to save when they could. This grew to 80.1% after the program although it should be stressed that intentions do not prove changed behaviour. Kempson and Finney explain that while some low-income families want to save, and exhibit good saving behaviour, financial circumstances preclude them from acting in a manner consistent with their desires.

²¹ ANZ, *Saver Plus 2008 Follow Up Survey Results* (2008) http://www.anz.com/resources/5/f/5f24d4804d2fa537a3a9b7766a918285/SP_Followup_Report_May2008.pdf.

²² ANZ, *Saver Plus* < <http://www.anz.com/about-us/corporate-responsibility/community/financial-literacy-inclusion/programs/saver-plus> > as at 27/01/2011.

²³ E Kempson and A Finney 'Saving in Lower Income Households: A Review of the Evidence' (Personal Finance Research Centre, Bristol, 2009).

2 More realistic assessments of financial knowledge by consumers

Given that surveys find most people overestimate their financial capability,²⁴ financial education ensures that people have a realistic view of their own financial knowledge and accordingly approach investments and financial decisions with the caution that their particular level of understanding warrants.²⁵

3 Life skills and bargaining power

The realisation of good financial behaviour is achieved through the development of knowledge and skills, which provides the basis for making informed decisions.²⁶ A skilful and knowledgeable person with good attitudes²⁷ is in the best position to make the most of life's opportunities²⁸ and to budget and plan spending:²⁹

Financial education can help children to understand the value of money and teach them about budgeting and saving. It can give students and young people important skills for independent living, for example in managing and repaying student loans. It can assist adults in planning for major events like buying a home or becoming parents.

²⁴ ANZ, *The ANZ Survey of Adult Financial Literacy in Australia* (2008) <http://www.anz.com/Documents/AU/Aboutanz/AN_5654_Adult_Fin_Lit_Report_08_Web_Report_full.pdf>; *Jump\$art Coalition, 2008 Survey of the Financial Literacy of Young American Adults* (2008); *Investor Education Foundation, Financial Capability in the United States National Survey* (2009); Olga Kuzina, 'The level of financial literacy of Russians: before and during the crisis of 2008-2009' (Paper presented at the 30th CIRET Conference, New York, October 2010).

²⁵ However, Gallery and Gallery argue that 'as people become more financially literate and more actively engaged with their superannuation, there is the danger that they do not recognise the limitations of their financial knowledge and abilities'. This argument is somewhat counter intuitive, because an increased understanding of finance provides the understanding necessary to understand ones own limitations. See: Gerry Gallery and Natalie Gallery 'Rethinking Financial Literacy in the Aftermath of the Global Financial Crisis' (2010) 19 *Griffith Law Review* 30.

²⁶ Haiyang Chen and Ronald Volpe, An Analysis of Personal Financial Literacy Among College Students' (1998) 7 *Financial Services Review* 107 <http://www2.stetson.edu/fsr/abstracts/vol_7_num2_107.pdf>.

²⁷ Carol Brennan and Katrina Ritters, 'Consumer Education in the UK: New Developments in Policy, Strategy and Implementation' (2004) 28 *International Journal of Consumer Studies* 97.

²⁸ European Commission (communication), *Financial Education* (COM(2007) 808 final, 2007) <http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=COMfinal&n_doc=2007&nu_doc=808>, [3.1].

²⁹ Catherine Bell, Dan Goran and Jeanne Hogarth, 'Does Financial Education Affect Soldiers' Financial Behavior?' (Working Paper 2009-WP-08, Networks Financial Institute, 2009).

The European Commission has recognised that financial literacy gives consumers greater bargaining power through understanding finance and terms in consumer contracts. As a result, consumers can gain better deals and demand more from service providers.³⁰ In light of the fact that contact with financial institutions is necessary for a normally productive and enjoyable life, the ability to understand financial institutions and the products they offer is an important benefit of financial literacy.

4 *Financial efficiency*

Financial literacy results in *financial efficiency*. This refers to the use of financial products and investing without waste and *unnecessary cost*. Financial literacy therefore gives consumers the ability to live more efficiently, without unnecessary cost and waste.³¹

Rajat Nag, the Managing Director General of the Asian Development Bank explains:

Financial literacy allows people to increase and better manage their earnings – and therefore better manage life events like education, illness, job loss, or retirement.³²

Financial efficiency can include selecting the best value product on the market, and paying the lowest possible price on the market for a particular product or service. Financial efficiency is achieved by comparison shopping, an attribute of financially

³⁰ European Commission (communication), *Financial Education* (COM(2007) 808 final, 2007) <http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=COMfinal&an_doc=2007&nu_doc=808>.

³¹ For example, low levels of financial and economic literacy result in people transacting in high cost ways, incurring fees and using high costs of borrowing. See: Tullio Jappelli, 'Economic Literacy: An International Comparison' (2010) 120 *The Economic Journal* 429, 433.

³² Rajat Nag, 'Financial Education for Inclusive Development' (Speech delivered at the CITI-FT Financial Education Summit, New Delhi, India, 6 December 2007) <<http://www.adb.org/Documents/Speeches/2007/ms2007089.asp>>.

literate consumers.³³ Comparison shopping leads to savings by purchasing the best value products.³⁴ The European Commission notes:

People who understand financial issues make better choices of financial services for their particular needs... They are less likely to purchase products they do not need, be tied into products that they do not understand, or take risks that could drive them into financial difficulty.³⁵

This means that financial literacy should result in much more than realising financial goals.³⁶ Realising financial goals *and* lifetime utility (the optimal enjoyment of life) at the *lowest possible price* is the result of financial literacy. That is, behaviour that *does not* result in *unnecessary* expenses, such as paying off credit card bills late, choosing the wrong financial product or paying higher interest rates etc.³⁷ The Assistant Governor of the Reserve Bank of Australia has associated financial illiteracy with the spiraling debt problem impacting consumers who have a ‘buy now, pay later’ credit mentality.³⁸ This relates to the efficient use of money, and being able to function with the least possible unnecessary expense. This results in more disposable income and greater money to ‘spend, save and invest’,³⁹ which translates to a better quality of life.

(a) Lifetime utility and financial wellbeing

Keith Hall, the Assistant Governor of the Reserve Bank of Australia, describes the costs of financially illiteracy quite broadly: ‘a far lower standard of living than was otherwise

³³ European Commission (communication), *Financial Education* (COM(2007) 808 final, 2007) <http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=COMfinal&an_doc=2007&nu_doc=808>.

³⁴ Malcolm Cook, Fionnuala Earley, Jody Ketteringham and Sarah Smith ‘Losing Interest: How much can consumers save by shopping around for financial products’ (Occasional paper series 19, Financial Services Authority, 2001) <<http://www.fsa.gov.uk/pubs/occpapers/op19.pdf>>, 29.

³⁵ European Commission, *Financial Education* <http://europa.eu/legislation_summaries/consumers/protection_of_consumers/l22031_en.htm> as at 15 December 2010.

³⁶ Keith Hall, ‘The Importance of Financial Literacy’ (Speech delivered to the Conference on Deepening Financial Capacity in the Pacific Region, Sydney, 25 August 2008).

³⁷ Catherine Bell, Dan Goran and Jeanne Hogarth, ‘Does Financial Education Affect Soldiers’ Financial Behavior?’ (Working Paper 2009-WP-08, Networks Financial Institute, 2009), 17.

³⁸ Keith Hall, ‘The Importance of Financial Literacy’ (Speech delivered to the Conference on Deepening Financial Capacity in the Pacific Region, Sydney, 25 August 2008).

³⁹ Thomas Garman, ‘Personal Finance Education for Employees: Evidence On The Bottom-line Benefits’ (1997) 8 *Financial Counselling and Planning* 1, 6.

achievable’.⁴⁰ The end result of financial literacy, on the other hand, is a ‘lifetime of financial well-being’⁴¹ or realising financial goals and healthy household balance sheets.⁴² This is achieved through financial efficiency, realised by financially literate consumers. Measures of financial wellbeing include increases in wealth, income, savings, improved credit ratings, manageable debt relative to assets, home ownership, accumulating retirement savings and an investment portfolio that reflects the needs of the consumer.⁴³ Burkhauser, Gustman, Laitner, Mitchell and Sonnega explain that measuring financial well being in older people accurately does not simply depend on income and wealth, but on time allocation and consumption possibilities⁴⁴ thereby supporting the view that financial literacy provides greater lifetime utility. This means that the benefits of financial literacy should not be restricted to considering its impact on the “bottom line”.

Cole and Fernando write:

A compelling body of evidence demonstrates a strong association between financial literacy and household well-being. Survey after survey shows that households that demonstrate low levels of financial literacy are those that tend not to plan for retirement, borrow at high interest rates, and acquire fewer assets.⁴⁵

Huston explains that:

⁴⁰ Keith Hall, ‘The Importance of Financial Literacy’ (Speech delivered to the Conference on Deepening Financial Capacity in the Pacific Region, Sydney, 25 August 2008).

⁴¹ *Jump\$tart Coalition, 2008 Survey of the Financial Literacy of Young American Adults* (2008).

⁴² Keith Hall, ‘The Importance of Financial Literacy’ (Speech delivered to the Conference on Deepening Financial Capacity in the Pacific Region, Sydney, 25 August 2008). Also see: Mark Taylor, Stephen Jenkins and Amanda Sacker, ‘Financial Capability and Wellbeing’ (Occasional Paper Series No 34, Financial Services Authority, 2009) <<http://www.fsa.gov.uk/pubs/occpapers/op34.pdf>>.

⁴³ John Tatom, ‘Financial Wellbeing and Some Problems in Assessing its Link to Financial Education’ (Working Paper No 2010-WP-03, Networks Financial Institute, 2010).

⁴⁴ Richard Burkhauser, Alan Gustman, John Laitner, Olivia Mitchell and Amanda Sonnega ‘Social Security Research at the Michigan Retirement Research Center’ (2009) 69 *Social Security Research Bulletin* 51, 60 <<http://www.ssa.gov/policy/docs/ssb/v69n4/v69n4p51.pdf>>.

⁴⁵ Shawn Cole and Nilesh Fernando, ‘Assessing the Importance of Financial Literacy’ (2008) 9 *Finance for the Poor* 1 <<http://www.adb.org/Documents/Periodicals/Microfinance/finance-200803.pdf>>.

Financial literacy is a component of human capital that can be used in financial activities to *increase expected lifetime utility* from consumption (i.e., behaviors that enhance financial well-being).⁴⁶

This shows that “financial literacy” is to be judged by *outcomes*. Financial efficiency results in the *ability* to enhance lifetime utility, by providing greater levels of disposable income and liquidity. Assessing whether an outcome is positive is a subjective consideration, unless objective reasons support a conclusion that an outcome is positive. Thus, a rigid view that a particular outcome is financially beneficial should be supported by objective reasons supporting that view. Although lifetime *utility*, or what a person values in life, can be subjective, financial efficiency is, objectively, a positive result of financial literacy because its benefits can be measured by increased savings, reduced waste and cost etc. Saving and planning for retirement is objectively positive.

(b) Active debt management

Financial efficiency is linked with “debt literacy”, which includes financial knowledge of debt and how best to avoid and manage debt. According to Lusardi, debt illiteracy can be linked to a number of high cost financial experiences, such as borrowing on credit, using pay day lending or pawn shops. Debt literacy results in selecting products which are needed, while avoiding unnecessary products which increase costs. Understanding where to get help is the first step in remedying debt, and therefore knowledge of this process is important in preventing, mitigating and repaying debt.

The Reserve Bank of Australia has sought to vindicate financial education programs by referring to “prudent” borrowing by Australians which has resulted from such programs.⁴⁷ Careful borrowing takes account of cost, therefore resulting in significant savings to consumers, and as a result, brings Australians closer to realising financial

⁴⁶ Sandra Huston, ‘Measuring Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 296, 308.

⁴⁷ Keith Hall, ‘The Importance of Financial Literacy’ (Speech delivered to the Conference on Deepening Financial Capacity in the Pacific Region, Sydney, 25 August 2008). Also see: Annamaria Lusardi, ‘Financial Literacy: An Essential Tool for Informed Consumer Choice’ (Working Paper No 14084, National Bureau of Economic Research, 2008) <<http://www.nber.org/papers/w14084>>.

efficiency. Education and financial literacy specific to homeownership has been shown to increase the success of repaying mortgages, and the eventual result of homeownership.⁴⁸

5 Activity in financial markets

Financially literate consumers have been shown to possess more financial products and be productive investors.⁴⁹ Limited financial market participation, or inertia,⁵⁰ may be a consequence of low levels of financial literacy.⁵¹ Van Rooij, Lusardi and Alessie found that people with low levels of financial literacy are significantly less likely to hold shares and stocks.⁵² This limited financial market participation can result from a lack of knowledge about finance that makes a person unlikely to be financially active, such as to open a bank account. Financial literacy not only enhances participation, but also encourages sound investment strategies such as diversification.⁵³ The assumption is that financial illiteracy causes anxiety when dealing with financial products. Accordingly, financially illiterate people avoid financial products which are perceived to be difficult to understand. As a result, the optimal approach for a person who is financially illiterate is to abstain from market participation, and avoid purchasing costly products or borrowing. However, in the long term financial exclusion may be extremely costly and cause a person to miss the benefits and opportunities of the financial system.

6 Investing and choosing the right financial products with confidence

A financially literate consumer will be more confident when making decisions about finance, thereby increasing participation in the market. Financial literacy can influence the *types* of products selected, and the *types* of investments made. The fast moving nature

⁴⁸ Abdighani Hiram and Peter Zorn, 'A Little Knowledge is a Good Thing' (Low-income Home Ownership Working Paper Series, Harvard University, 2001)

<<http://www.jchs.harvard.edu/publications/homeownership/liho01-4.pdf>>.

⁴⁹ ANZ, *ANZ Survey of Adult Financial Literacy in Australia* (2008).

⁵⁰ Natalie Gallery, Cameron Newton and Chrisann Palm, 'A Framework for Assessing Financial Literacy and Superannuation Investment Choice Decisions' (Paper presented at the 18th Annual Colloquium of Superannuation Researchers, UNSW, Sydney, Australia, 12-13 July 2010), 3.

⁵¹ Shawn Cole and Nilesh Fernando, 'Assessing the Importance of Financial Literacy' (2008) 9 *Finance for the Poor* 1 <<http://www.adb.org/Documents/Periodicals/Microfinance/finance-200803.pdf>>.

⁵² Maarten van Rooij, Annamaria Lusardi and Rob Alessie, 'Financial Literacy and Stock Market Participation' (Working Paper No 13565, National Bureau of Economic Research, 2007) <<http://www.nber.org/papers/w13565>>.

⁵³ Tullio Japelli, 'Economic Literacy: An International Comparison' (2010) 120 *The Economic Journal* 429.

of financial markets means that individuals who understand product features and market environments are best placed to make an informed decision about their financial needs.

Financial education can contribute to financial stability by helping consumers to choose appropriate products and services, leading to lower default rates, for instance on loans and mortgages, and more diversified and therefore safer saving and investment.⁵⁴

This also leads to consumers avoiding unnecessary costs. An improved understanding of financial products and services develops greater *financial confidence* in consumers,⁵⁵ who select the most appropriate products and organise those products (such as by diversification strategies, for example) in the best possible way.

7 Consumer rights and regulatory intervention

Education in consumer laws and fraudulent schemes is a component of financial literacy. This knowledge gives people the tools and understanding to identify and avoid fraudulent schemes and reduce the severity of falling victim to such schemes.⁵⁶ This translates into lower levels of regulatory intervention because consumers are better able to take care of themselves. Kempson writes that a financially capable person ‘knows where to go for help’.⁵⁷ This view is also held by the UK Treasury, and researchers from Edinburgh Napier University.⁵⁸

⁵⁴ European Commission (communication), *Financial Education* (COM(2007) 808 final, 2007) <http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=COMfinal&n_doc=2007&nu_doc=808>.

⁵⁵ *Ibid*, 393.

⁵⁶ European Commission, *Financial Education* <http://europa.eu/legislation_summaries/consumers/protection_of_consumers/l22031_en.htm>; Thomas Garman, ‘Personal Finance Education for Employees: Evidence On The Bottom-line Benefits’ (1997) 8 *Financial Counselling and Planning* 1, 6.

⁵⁷ Robert Holzmann, ‘Bringing Financial Literacy and Education to Low and Middle Income Countries: The Need to Review, Adjust and Extend Current Wisdom (Social Protection Discussion Paper No 56501, World Bank, 2010), 4.

⁵⁸ Ronald McQuaid and Valerie Egdell, ‘Financial Capability – Evidence Review’ (Final Report, Employment Research Institute – Edinburgh Napier University, 2010); Her Majesty’s Treasury, *Financial Capability: The Government’s Long Term Approach* (2007), 19.

B *The benefits to the financial system and the economy*

Financially literate consumers can also create a more competitive, innovative, safe, stable, accessible, disciplined and liquid financial system and markets.

1 *Greater competition, innovation and quality products*

Financially literate consumers are more financially efficient. Seeking and purchasing ‘better, cheaper and more appropriate products and services can drive efficiencies in the financial industry’.⁵⁹ This leads to increased competition, better quality products and greater innovation and diversity in the market. Knowledge of consumer rights and contracts also allows consumers to evaluate products more carefully and as a result demand more from suppliers.

(a) Market discipline

Hall promotes the view that financial literacy bolsters market discipline, which is the collective consumer influence on financial institutional behaviour, making these institutions ‘more likely to operate in a safe, sound and efficient manner’. The rationale for this stems from transparency and the ability to filter good from bad financial institutions:

Certainly, if there is enough transparency in the financial system so that customers are both knowledgeable and well-informed, it does seem reasonable to predict that they will direct their business away from riskier, poorly run financial institutions to those that are better managed.⁶⁰

As a result, better informed consumers are collectively able to influence the ways that financial institutions are managed,⁶¹ and thus reward those institutions which offer better quality products and services, at the best value.

⁵⁹ European Commission (communication), *Financial Education* (COM(2007) 808 final, 2007) < http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=COMfinal&nu_doc=2007&nu_doc=808>.

⁶⁰ Keith Hall, ‘The Importance of Financial Literacy’ (Speech delivered to the Conference on Deepening Financial Capacity in the Pacific Region, Sydney, 25 August 2008).

⁶¹ Tullio Japelli, ‘Economic Literacy: An International Comparison’ (2010) 120 *The Economic Journal* 429, 433.

2 *Coverage of risk*

Financially literate consumers have a greater appreciation of risk, and therefore the problem of undercoverage of risk⁶² (for example, underinsurance) is not as prevalent as in markets in which people are not financially educated. A greater appreciation of risk translates into the purchasing of appropriate insurance and careful investment decisions, therefore reducing the burden on the financial system from undercoverage of risk and underinsured ventures, reducing costly insolvencies, bankruptcies and business inefficiency.

3 *Self-funding of retirement*

The increased saving and retirement planning resulting from increased financial literacy also has positive effects on the financial system and economy, by reducing the burden on the state to provide pensions and government funding for people experiencing financial hardship. Instead, people are more willing to build wealth during their working lives to fund retirement.

4 *Overcoming “procyclicality” in lending*

Financial institutions and banks tend to be myopic in lending decisions, being flexible in good economic times only to tighten lending when the economic climate turns bad. This is known as “procyclicality”, and it can have significant negative effects on highly leveraged borrower who do not plan for the changed cycle and therefore default in harsh economic times. Hall explains:

In a financially educated society ... borrowers will be less likely to take on more debt just because credit is cheap and freely available. As a result, they will have a far better chance of riding out an economic downturn without defaulting on their debt repayments – which, in turn, will help minimise the bad debt experience of financial institutions and, by doing so, help bolster the stability of the financial system.⁶³

⁶² European Microfinance Network, *Financial Education* <http://www.european-microfinance.org/financial-education_en.php#Benefits> as at 15 December 2010.

⁶³ Keith Hall, ‘The Importance of Financial Literacy’ (Speech delivered to the Conference on Deepening Financial Capacity in the Pacific Region, Sydney, 25 August 2008).

As a result, financially literate consumers will understand cyclical changes in the financial markets, and will borrow and invest accordingly, while also being resilient in harsh economic times.

C The benefits to the community

Financial literacy also has considerable benefits to the community, in particular enhancing inclusion in the financial markets and increasing the awareness by the public of financial issues, thereby creating an informed citizenry which can evaluate the appropriateness of government financial policies.

1 Financial inclusion

Greater financial understanding and knowledge allows those members of society who are otherwise excluded the opportunity to use financial products and services. For example, knowledge of a term deposit may prompt a person to earn more interest, whereas no knowledge of the existence of such a product will result in less interest being earned and an opportunity lost. Financially literacy provides the understanding required to access particular products which allows people to borrow and become financially active.

... those who have received some form of education on financial matters are far more likely to be engaged with the mainstream financial industry, and not have to rely on higher-cost and higher-risk fringe providers or loan sharks. It can encourage citizens, even those on low incomes, to plan and save some part of their incomes. It can help to develop the skills to form the financiers of tomorrow. ⁶⁴

Financial literacy therefore increases social inclusion, and gives people the knowledge to avoid highly priced, unconventional and riskier forms of credit and financial products.

⁶⁴ European Commission (communication), *Financial Education* (COM(2007) 808 final, 2007) <http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=COMfinal&an_doc=2007&nu_doc=808>.

2 *Understanding government financial policies*

Financially literate people are also able to better assess financial policies of governments and the actions of financial institutions. This creates better informed citizens who are able to make sense of policy reform to the financial sector. For example:

[Financial literacy] ... promotes understanding and acceptance of important political reforms, such as health care or pension reforms.⁶⁵

While many political reforms are highly complex, transparent financial sector reforms which can be understood by an informed public are important because they give the public the ability to critique government policies.

III THE CAUSAL LINK FROM FINANCIAL LITERACY TO POSITIVE FINANCIAL BEHAVIOUR

Financial knowledge and literacy promotes particular forms of positive financial behaviour. However, particular behaviours (such as investing) or situations (acquiring wealth, joining the family business etc) result in market experience, and this can also promote higher levels of financial literacy.⁶⁶ It is important to establish the link between financial literacy and good financial behaviour to elucidate the benefits of financially literate consumers.

Marcolin and Abraham argue that the link between financial literacy and behaviour has not been established:⁶⁷

Because financial literacy has become increasingly important for the economic wellbeing of the nation's future (CBF, 2004b), it is important that it can be explicitly linked with financial

⁶⁵ Rajat Nag, 'Financial Education for Inclusive Development' (Speech delivered at the CITI-FT Financial Education Summit, New Delhi, India, 6 December 2007) <<http://www.adb.org/Documents/Speeches/2007/ms2007089.asp>>.

⁶⁶ Chiara Monticone, 'How Much Does Wealth Matter in the Acquisition of Financial Literacy' (2010) 44 *The Journal of Consumer Affairs* 403, 404.

⁶⁷ But see: Lisa Servon and Robert Kaestner, 'Consumer Financial Literacy and the Impact of Online Banking on the Financial Behavior of Lower-Income Bank Customers' (2008) 42 *Journal of Consumer Affairs* 271.

behaviour and hence financial success and sustainability. *No financial literacy study has yet achieved this.* [emphasis added] Another area of research could then focus on the components of financial literacy and determine which are the most and least critical to financial success and sustainability.⁶⁸

However, a number of studies show a link between financial literacy and optimal consumer behaviour. Lusardi and Mitchell pioneered linking financial knowledge with financial behaviour, through the use of questions in surveys that reflect such behaviour relative to knowledge. That is, the questions became geared towards economic outcomes of knowledge not just an assessment of the knowledge itself.⁶⁹

A number of empirical studies confirm the supposition that ‘financial knowledge is positively correlated with consumer financial behaviour, and that causality runs from knowledge to behaviour’.⁷⁰ Hilgert, Hogarth and Beverly found a significant correlation between financial knowledge and financial behaviour.⁷¹ A link has also been established between housing counseling (which includes advice about managing mortgage repayments, budgeting and other skills relevant to buying a house) and lower delinquency

⁶⁸ S Marcolin and A Abraham, ‘Financial Literacy Research: Current Literature and Future Opportunities’, (Proceedings of the 3rd International Conference on Contemporary Business Conference Proceedings, Leura NSW, 21-22 September 2006), 9.

⁶⁹ Annamaria Lusardi and Olivia Mitchell, ‘Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education’ (2007) *Business Economics* 35.

⁷⁰ Ian Hathaway and Sameer Khatiwada, ‘Do Financial Education Programs Work?’ (Working Paper No 08-03, Federal Reserve Bank of Cleveland, 2008), 3
<http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1118485&download=yes>. But see: Stephan Meier and Charles Sprenger, ‘Discounting Financial Literacy Time Preferences and Participation in Financial Education Programs’ (Federal Reserve Bank of Chicago, 2009), 22
<http://www.chicagofed.org/digital_assets/others/events/2009/frs_financial_literacy/2009_frs_financial_m_eier.pdf> and, Lauren Willis, ‘Evidence and Ideology in Assessing the Effectiveness of Financial Literacy Education’ (Paper No 206, *Pennsylvania Law School*, 2008).
<http://lsr.nellco.org/upenn_wps/206>.

⁷¹ Marianne Hilgert, Jeanne Hogarth and Sandra Beverly, ‘Household Financial Management: The Connection between Knowledge and Behavior’ (Federal Reserve Bulletin, 2003)
<<http://www.personalfinancefoundation.org/research/fle/Household-Financial-Management.pdf>>. Also see: Matthew Martin, ‘A Literature Review on the Effectiveness of Financial Education’ (Working Paper No WP07-3, Federal Reserve Bank of Richmond, 2007), 8 <<http://www.finalist-project.eu/Portals/0/A%20Literature%20Review%20on%20the%20Effectiveness%20of%20Financial%20Education.pdf>>.

and default rates.⁷² However, as research by the Federal Reserve Bank of Cleveland observes:

... confusing correlation with causality is a critical flaw. Although there is clearly a *correlation* between knowledge and behaviour in personal finance, it may be that *causality* runs both ways.⁷³

Empirical studies support the causal link from financial knowledge to healthy attitudes about money, which influences behaviour.⁷⁴ Elliehausen, Lundquist and Staten⁷⁵ tracked the progress of credit counseling clients, and found that those in receipt of counseling 'were able to reduce their debts, improve their credit card management, and lower their delinquency rates by more than those who did not receive counseling'.⁷⁶ Hartaska and Gonzalez-Vega found that people who received financial counseling had a lower default hazard, although repayment frequency was not greatly affected.⁷⁷ Also significant are the findings of Courchane and Zorn,⁷⁸ who show a casual link from financial knowledge to financial behaviour, and link this behaviour to credit outcomes.⁷⁹ Through a three step

⁷² Angela Lyons, Tommye White and Shawn Howard, 'The Effect of Bankruptcy Counseling and Education on Debtors' Financial Well-Being: Evidence from the Front Lines' (Money Management International and University of Illinois, 2008)
<http://www.cefe.illinois.edu/research/reports/The%20Effect%20of%20Bankruptcy%20Counseling%20and%20Education_122008.pdf>.

⁷³ Ian Hathaway and Sameer Khatiwada, 'Do Financial Education Programs Work?' (Working Paper No 08-03, Federal Reserve Bank of Cleveland, 2008), 3
<http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1118485&download=yes>.

⁷⁴ Lynne Borden, Sun-A Lee, Joyce Serido and Dawn Collins, 'Changing College Students' Financial Knowledge, Attitudes, and Behavior through Seminar Participation' (2008) 29 *Journal of Family Economic Issues* 23 <<http://www.usc.edu/dept/chepa/IDApays/publications/changingcollegestudents.pdf>>.

⁷⁵ See: Gregory Elliehausen, Christopher Lundquist and Michael Staten, 'The Impact of Credit Counseling on Subsequent Borrower Behavior' (2007) 41 *The Journal of Consumer Affairs* 1.

⁷⁶ Ibid, cited in Angela Lyons, Tommye White and Shawn Howard, 'The Effect of Bankruptcy Counseling and Education on Debtors' Financial Well-Being: Evidence from the Front Lines' (Money Management International and University of Illinois, 2008), 7 <http://www.cefe.illinois.edu/research/reports/The%20Effect%20of%20Bankruptcy%20Counseling%20and%20Education_122008.pdf>.

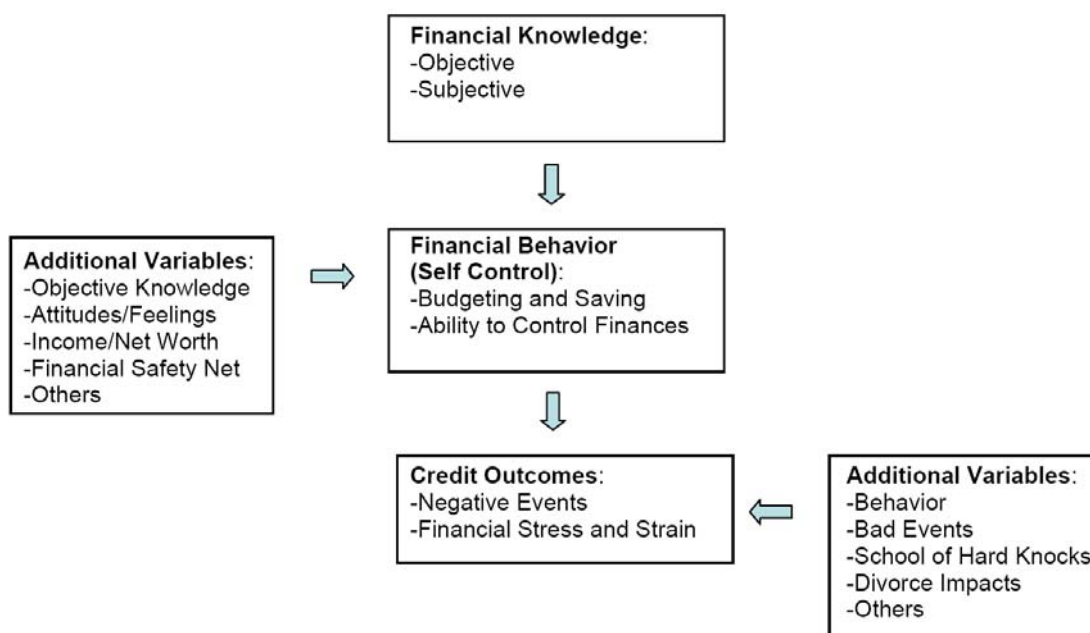
⁷⁷ Valentina Hartaska and Claudio Gonzalez-Vega, 'Credit Counseling and Mortgage Termination by Low-Income Households' (2005) 30 *Journal of Real Estate Finance and Economics* 227.

⁷⁸ See: Marsha Courchane and Peter Zorn, 'Consumer Literacy and Creditworthiness' (Proceedings, Federal Reserve Bank of Chicago, 2005). For a discussion of Courchane and Zorn, see: Lauren Willis, 'Evidence and Ideology in Assessing the Effectiveness of Financial Literacy Education' (Paper No 206, Pennsylvania Law School, 2008).
<http://lsr.nellco.org/upenn_wps/206>.

⁷⁹ See: Marsha Courchane and Peter Zorn, 'Consumer Literacy and Creditworthiness' (Proceedings, Federal Reserve Bank of Chicago, 2005) cited in Ian Hathaway and Sameer Khatiwada, 'Do Financial

process, the researchers tested which variables were most important in particular forms of behaviour. For example, in the second step, the most important determinant of the dependant variable of financial self control (budgeting, saving and the ability to control finances) was knowledge.⁸⁰ The Federal Reserve Bank of Richmond usefully summarises this model in a diagram:⁸¹

Figure 2: The Variables That Influence Financial Behaviour.



Source: Federal Reserve Bank of Richmond

Although there are a number of influences on financial behaviour, such as psychology, life experience and hardship, the most significant determinant, according to the study by Courchane and Zorn, is *knowledge*. The diagram provided by the Federal Reserve Bank of Richmond also shows that knowledge is the foundation of consumer behaviour, with other factors having an impact on the application of that knowledge. Thus while

Education Programs Work?’ (Working Paper No 08-03, Federal Reserve Bank of Cleveland, 2008), 4 <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1118485&download=yes>.

⁸⁰ Ibid, 5.

⁸¹ Matthew Martin, ‘A Literature Review on the effectiveness of Financial Education’ (Working Paper No WP07-3, Federal Reserve Bank of Richmond, 2007) <<http://www.finalist-project.eu/Portals/0/A%20Literature%20Review%20on%20the%20Effectiveness%20of%20Financial%20Education.pdf>>.

knowledge and financial literacy plays only a part in behaviour, this part is *significant* and *causal* to specific positive and desirable forms of financial behaviour such as financial self control. As a result, financial literacy is important because it lays the foundation for optimal financial behaviour.⁸²

The causal link from financial literacy to optimal financial behaviour has been established in the literature, and therefore financial education is necessary to improve consumer behaviour in relation to financial products and services.

IV CONCLUSION

Financial literacy is important because of its benefits for consumers, the community, and the economy. Financially literate consumers, when compared to financially illiterate consumers, tend to:

- have greater lifetime utility and enjoyment, by having more disposable income;
- have more savings;
- save more for retirement;
- actively manage debt;
- borrow prudently;
- be more realistic about their financial goals;
- be less inclined to overestimate their abilities;
- be more active in financial markets;
- be more financially confident;
- choose with more accuracy financial products that are suitable for their needs;
- understand consumer rights;

⁸² For example, the Investor Education Foundation's comparison of the levels of financial literacy and financial capability in the states of the United States can support the view that knowledge can result in greater financially capable behaviour. See: Investor Education Foundation, *Financial Capability Study* (2010) <<http://www.usfinancialcapability.org/index.html>>; Investor Education Foundation, *National Financial capability Survey Shows Kentuckians Place Near the Bottom in Financial Literacy and in Three Key Measures* (2010); Investor Education Foundation, *Financial Capability Survey Shows Oklahomans Least Likely in Nation to Have "Rainy Day" Funds* (2010); Investor Education Foundation, *Financial Capability Survey Reveals Montanians Most Likely to Live Paycheck-Paycheck and Use High-Cost, Non-Bank Borrowing* (2010); Investor Education Foundation, *FINRA Foundation Releases Nation's First State-by-State Financial Capability Survey* <<http://www.finra.org/Newsroom/NewsReleases/2010/P122538>> as at 15 December 2010.

- have a better understanding of financial products and therefore have greater bargaining power with financial institutions; and
- plan their finances, budget and know how to be financially efficient.

As a result, financially literate (and therefore financially efficient) consumers benefit the financial system and economy because:

- a better informed consumer demands better quality and better value products, creating more competition, innovation and quality products. This creates market discipline;
- financially literate consumers are more likely to have sufficient insurance coverage, reducing the burden on the economy for losses and reduced business activity;
- saving more for retirement moves the burden away from the state, and prepares consumers for self funding retirement; and
- consumers will be better able to prepare for cyclical changes in the market, and react accordingly.

Financially literate consumers provide two main benefits to the community:

- financial inclusion, because people know how to access financial products and services that are appropriate for their needs; and
- a population that can better understand government financial policies.

Part B – The Meaning of “Financial Literacy”

I INTRODUCTION

A definition of financial literacy can be split into three connecting parts: (1) competencies, (2) proficiencies, and (3) opportunity and enabling environment. This means that a financially literate person must be proficient in a number of competencies, and have the opportunity to access finance and become competent through experience. Six competencies and six proficiencies are discussed in this part of the research report. Financial literacy increases as more links are established between the competencies and proficiencies, and as long as an inclusive financial environment exists.

The six competencies are: numeracy and money management, budgeting and living within means, saving and planning, borrowing and debt literacy, choosing financial products, and recourse and self help. The analysis then shifts to consider financial capability, which introduces proficiencies including knowledge, ability and skill.

This part therefore defines financial literacy by linking six proficiencies with six key competencies, while noting that there must be opportunities to exercise these competencies and proficiencies.

II THE MEANING OF FINANCIAL LITERACY

A number of definitions of financial literacy exist in the literature.⁸³ At its most basic level, “financial literacy” refers to the knowledge and understanding of financial concepts thereby resulting in the ability to make informed, confident and effective decisions regarding money. This achieves the benefits mentioned in Part A of this report.

Financial literacy can be defined broadly or narrowly. A broad definition of financial literacy adopts an ‘understanding of economics’ and how economic conditions and

⁸³ David Remund, ‘Financial Literacy Explicated: The Case for a Clearer Definition in an Increasingly Complex Economy’ (2010) 44 *The Journal of Consumer Affairs* 276.

circumstances affect household decisions.⁸⁴ A narrow definition of financial literacy focuses on ‘basic money management tools such as budgeting, saving, investing and insurance’.⁸⁵ It is the narrow view of financial literacy that is particularly relevant to consumer decisions concerning financial products.

Different meanings of financial literacy have been used in studies,⁸⁶ resulting in no uniform definition.⁸⁷ A number of studies have used financial literacy interchangeably with other names. The alternative names given for “financial literacy” and financial capability⁸⁸ include empowerment,⁸⁹ responsabilization,⁹⁰ credit literacy,⁹¹ financial knowledge, and economic literacy.⁹² Some studies have failed to explicitly define the concept.⁹³ Huston surveyed 71 studies, and only 13% appropriately defined financial literacy with sufficient precision.⁹⁴

Huston’s review of 71 studies reveals eight definitions of financial literacy. The definitions focus on knowledge, ability to make informed judgments and to reach an

⁸⁴ Andrew Worthington, ‘Predicting Financial Literacy in Australia’ (2006) 15 *Financial Services Review* 59.

⁸⁵ Natalie Gallery, Cameron Newton and Chrisann Palm, ‘A Framework for Assessing Financial Literacy and Superannuation Investment Choice Decisions’ (Paper presented at the 18th Annual Colloquium of Superannuation Researchers, UNSW, Sydney, Australia, 12-13 July 2010), 8.

⁸⁶ Brenda Cude, ‘Financial Literacy 501’ (2010) 44 *The Journal of Consumer Affairs* 271, 272; Sandra Huston, ‘Measuring Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 296, 296; David Remund, ‘Financial Literacy Explicated: The Case for a Clearer Definition in an Increasingly Complex Economy’ (2010) 44 *The Journal of Consumer Affairs* 276; Olga Kuzina, ‘The Level of Financial Literacy of Russians: Before and During the Crisis of 2008-2009’ (Paper presented at the 30th CIRET Conference, New York, October 2010), 2.

⁸⁷ Sandra Huston, ‘Measuring Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 296, 305.

⁸⁸ Financial Services Authority, *Levels of Financial Capability in the UK* (2006) <<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>; Kathy Landvogt, ‘Critical Financial Capability’ (Paper presented to the Financial Literacy, Banking and Identity Conference, RMIT University, 25-26 October 2006).

⁸⁹ Sizwekazi Jekwa, ‘Fighting for Finance’ (16 August 2007) *Finweek* 68.

⁹⁰ Toni Williams, ‘Empowerment of Whom and for What? Financial Literacy Education and the New Regulation of Consumer Financial Services’ (2007) 29 *Law & Policy* 226.

⁹¹ Marsha Courchane, Adam Gailey and Peter Zorn, ‘Consumer Credit Literacy: What Price Perception?’ (2008) 60 *Journal of Economics and Business* 125.

⁹² Tullio Japelli, ‘Economic Literacy: An International Comparison’ (2010) 120 *The Economic Journal* 429.

⁹³ David Remund, ‘Financial Literacy Explicated: The Case for a Clearer Definition in an Increasingly Complex Economy’ (2010) 44 *The Journal of Consumer Affairs* 276, 282; Lisa Servon and Robert Kaestner, ‘Consumer Financial Literacy and the Impact of Online Banking on the Financial Behavior of Lower-Income Bank Customers’ (2008) 42 *The Journal of Consumer Affairs* 271.

⁹⁴ Sandra Huston, ‘Measuring Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 296, 302.

intended outcome such as lifetime financial security,⁹⁵ and the skills required to realize those outcomes. The eight definitions are:

- “Financial literacy is the ability to make informed judgments and to take effective decisions regarding the use and management of money”,⁹⁶
- “Personal financial literacy is the ability to read, analyze, manage and communicate about the personal financial conditions that affect material well-being. It includes the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future and respond competently to life events that affect everyday financial decisions, including events in the general economy”,⁹⁷
- “Financial literacy is a basic knowledge that people need in order to survive in a modern society”,⁹⁸
- “Financial knowledge is defined as understanding key financial terms and concepts needed to function daily in American society”,⁹⁹
- “Consumer literacy, defined as self-assessed financial knowledge or objective knowledge”,¹⁰⁰
- “Financial literacy refers to a person’s ability to understand and make use of financial concepts”,¹⁰¹

⁹⁵ Ibid, 303.

⁹⁶ Ibid; ANZ Survey of Adult Financial Literacy in Australia (2008); Also see: Monetary Authority of Singapore, *Quantitative Research on Financial Literacy Levels in Singapore* (2005), 3 <http://www.mas.gov.sg/resource/news_room/press_releases/2005/Financial%20Literacy%20Levels%20in%20Singapore.%20Full%20Report.pdf>; Australian Securities and Investments Commission, *Financial Literacy in Schools* (2003) <[http://www.asic.gov.au/asic/pdflib.nsf/lookupbyfilename/finlit_schools_dp.pdf/\\$file/finlit_schools_dp.pdf](http://www.asic.gov.au/asic/pdflib.nsf/lookupbyfilename/finlit_schools_dp.pdf/$file/finlit_schools_dp.pdf)>.

⁹⁷ Lois Vitt, Carol Anderson, Jamie Kent, Deanna Lyter, Jurg Siegenthaler and Jeremy Ward, ‘Personal Finance and the Rush to Competence: Financial Literacy Education in the US’ (National Field Study Commissioned by the Fannie Mae Foundation, Institute for Socio-Financial Studies, 2000) <<http://www.isfs.org/documents-pdfs/rep-finliteracy.pdf>>.

⁹⁸ Jinhee Kim, ‘Financial Knowledge and Subjective and Objective Financial Well-being’ (2001) 47 *Consumer Interests Annual 1* <[http://www.consumerinterests.org/files/public/Kim-Financial knowledge.pdf](http://www.consumerinterests.org/files/public/Kim-Financial%20knowledge.pdf)>.

⁹⁹ Cathy Bowen ‘Financial Knowledge of Teens and Their Parents’ (2002) 13 *Financial Counseling and Planning* 93.

¹⁰⁰ Marsha Courchane, Adam Gailey and Peter Zorn, ‘Consumer Credit Literacy: What Price Perception?’ (2008) 60 *Journal of Economics and Business* 125.

¹⁰¹ Lisa Servon and Robert Kaestner, ‘Consumer Financial Literacy and the Impact of Online Banking on the Financial Behavior of Lower-Income Bank Customers’ (2008) 42 *The Journal of Consumer Affairs* 271.

- “Financial literacy is the ability to use knowledge and skills to manage financial resources effectively for lifetime financial security”;¹⁰² and
- “Financial literacy is the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being”.¹⁰³

Financial literacy has also been defined as:

- Confidence with managing money;¹⁰⁴
- ‘Mathematical ability and understanding of financial terms’;¹⁰⁵ and
- ‘The ability of [people] to make informed judgments and take effective decisions in managing their finances’.¹⁰⁶

A closer analysis reveals that the definitions explain the same thing, just in a different way. Read together, the definitions attempt to define financial literacy as a state of *understanding* about financial resources. This understanding equips a person with the knowledge and skills needed to realize financial security and thus survive and achieve lifetime well-being. The definitions refer to broad outcomes, and explain that financial literacy provides lifetime financial security and well-being, and the ability to “respond competently to life events”, to “survive in a modern society” and to “function” in society on a daily basis. It will be shown that the common thread of financial literacy is positive financial outcomes resulting from proficient competence in key financial activities and concepts.

Financial literacy is comprised of three distinct but dependant components: (1) the “key competencies”, (2) proficiencies of a financially literate person, and (3) the opportunity and enabling environment necessary for those competencies and proficiencies to be

¹⁰² JumpStart Coalition, *Survey of the Financial Literacy of Young American Adults* (2008).

¹⁰³ This definition is attributed to the United States Financial Literacy and Education Commission. See: Sandra Huston, ‘Measuring Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 296.

¹⁰⁴ Australian Securities and Investments Commission, *Financial Literacy in Schools* (2003) <[http://www.asic.gov.au/asic/pdflib.nsf/lookupbyfilename/finlit_schools_dp.pdf/\\$file/finlit_schools_dp.pdf](http://www.asic.gov.au/asic/pdflib.nsf/lookupbyfilename/finlit_schools_dp.pdf/$file/finlit_schools_dp.pdf)>

¹⁰⁵ Andrew Worthington, ‘Predicting Financial Literacy in Australia’ (2006) 15 *Financial Services Review* 59.

¹⁰⁶ Monetary Authority of Singapore, *National Financial Literacy Survey* (2005).

realised. That is, a financially literate person must be proficient in the “key competencies”, and be given the opportunity to realize financial literacy and its benefits while having the motivation to act.

A The “key competencies” of financial literacy

Although no universal definition of financial literacy has been accepted in the literature, a number of “key competencies” can be listed to elucidate the meaning of financial literacy. Based on a review of the literature and surveys,¹⁰⁷ a financially literate person should be proficient in the following “key competencies”:

- Money basics, including numeracy and money management skills;
- Budgeting, including the ability to keep track of expenses and income;
- Saving and planning;
- Borrowing and debt literacy, including knowledge of different types of loans (such as secured and unsecured personal loans) and mortgages (such as fixed and variable), as well as positive and negative gearing. Debt literacy concerns the required understanding to mitigate debt and repay loans.
- Understanding financial products, including the ability to determine whether *independent advice* has been or will be given, the ability to decide between financial advisors *not* just financial products, understanding product features and investment considerations such as risk, return, interest rates, compound interest, simple interest, inflation, company features etc, the ability to compare products and investments by shopping around, and understanding concepts such as diversification and risk minimization. Financial products include insurance; and
- Recourse and self help. This includes whether consumers have the ability to protect themselves by understanding dispute resolution procedures, taking redress against a financial institution, and being able, where possible, to identify and take action against fraudulent schemes. The ability to understand financial and legal information is also important.

¹⁰⁷ See the appendix to this research report for an overview of the financial literacy surveys.

All these elements are component parts of financial literacy. Remund explains that based on a review of the literature:

... the operational definitions of financial literacy most commonly used in contemporary research fell within four categories – budgeting, saving, borrowing and investing – all of which are behaviour or ability based.¹⁰⁸

These key concepts can be expanded or refined, depending on the elements of sound budgeting, saving, borrowing and investing. Huston’s review identifies at least four distinct “content areas”: (1) money basics, including the money value of time, purchasing power and financial accounting concepts; (2) intertemporal transfers of resources between time periods including both (2a) borrowing, such as the use of credit cards, loans and mortgages, and (2b) investing, through the use of savings accounts, stocks, bonds or mutual funds, and (3) protecting resources through insurance or other risk management techniques.¹⁰⁹ As Huston argues, ‘measures that incorporate all content areas are likely to be more accurate’.¹¹⁰ The UK Financial Services Authority uses the following “key competencies”: keeping track, making ends meet, planning ahead, choosing products and staying informed.¹¹¹ These competencies were also used in the surveys by the Investor Education Foundation in the United States, which has a national survey, a survey of military personnel and a state-by-state survey.¹¹²

1 *Money basics*

Money basics relates to the knowledge, skills and understanding required for the most essential day to day calculations. These take the form of numeracy and money management skills, which includes a broad range of life skills. Essential, day to day, calculations include the cost of purchasing goods, paying bills, determining the value of

¹⁰⁸ David Remund, ‘Financial Literacy Explicated: The Case for a Clearer Definition in an Increasingly Complex Economy’ (2010) 44 *The Journal of Consumer Affairs* 276. Also see: Elaine Kempson, ‘Measuring levels of financial literacy at an international level – Appendix: Developing a set of core questions’ (OECD, January 2010).

¹⁰⁹ Sandra Huston, ‘Measuring Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 296, 303.

¹¹⁰ *Ibid*, 304.

¹¹¹ Financial Services Authority, *Financial Capability in the UK: Establishing a Baseline* (2006), 10-20 <http://www.fsa.gov.uk/pubs/other/fincap_baseline.pdf>.

¹¹² Investor Education Foundation, *National Financial Capability Study* (2009) <<http://www.finrafoundation.org/resources/research/p120478>>.

money over time,¹¹³ assessing the value of products, understanding the influence of inflation,¹¹⁴ and calculating interest payable, percentage discounts¹¹⁵ etc. Numeracy and arithmetic skills may be less necessary where tools exist in common usage which make these skills redundant in certain transactions. Therefore, skills in money basics also relates to the ability to use tools, such as online calculators and websites that compare financial products. Huston argues that lack of arithmetic skills will certainly impact financial literacy measures, but:

... available tools (e.g., calculators, computer software) can compensate for these deficiencies; thus, information directly related to successfully navigating personal finances is a more appropriate focus than numeracy skills for a financial literacy measure.¹¹⁶

With calculators now being a function of most mobile phones, the ability to calculate mentally may be less important than it once was. However, while the process of calculating may be done by a machine, numeracy is still vital to understanding what the numbers mean and also estimating whether the numbers produced by the machine are accurate.

(a) Numeracy

Numeracy, a skill which allows people to assess the suitability of expenses for themselves, is more beneficial than mere knowledge about certain products or financial concepts. Financial literacy starts with numeracy. Numeracy is the foundation of considering which financial products are cost effective.¹¹⁷ Numeracy has been found to play an important role in influencing saving and even budgeting.¹¹⁸ Higher numeracy has

¹¹³ Maarten van Rooij, Annamaria Lusardi and Rob Alessie, 'Financial Literacy and Stock Market Participation' (Working Paper No 13565, National Bureau of Economic Research, 2007) <<http://www.nber.org/papers/w13565>>.

¹¹⁴ Investor Education Foundation, *Financial Capability in the United States National Survey* (2009).

¹¹⁵ World Bank, *Financial Literacy Survey Questionnaire* (2008)

<http://siteresources.worldbank.org/INTECAREGTOPPRVSECDEV/Resources/RU-WB_Financial_Literacy_Questionnaire.pdf>.

¹¹⁶ Sandra Huston, 'Measuring Financial Literacy' (2010) 44 *The Journal of Consumer Affairs* 296.

¹¹⁷ Maarten van Rooij, Annamaria Lusardi and Rob Alessie, 'Financial Literacy and Stock Market Participation' (Working Paper No 13565, National Bureau of Economic Research, 2007) <<http://www.nber.org/papers/w13565>>.

¹¹⁸ Alan Gustman, Thomas Steinmeier and Nahid Tabatabai, 'Financial Knowledge and Financial Literacy at the Household Level' (Working Paper No 15600, Michigan Retirement Research Center, 2010), 32.

also been linked with higher levels of household wealth and good financial decisions,¹¹⁹ while poor numeracy has been linked with unnecessary expenses.¹²⁰

(b) Money management skills

Kempson's review of financial literacy surveys reveals three core areas that define money management skills: financial control, making ends meet and approaches to financial management. Financial control relates to budgeting, keeping records and knowledge of daily living costs and the ability to pay. Making ends meet includes a person's ability to predict times when finances may be low, and to remedy that situation. This also includes assessing the ability to maintain spending and keep up with commitments. Approaches to financial management relates to impulsiveness during spending, using credit instead of cash and general spending patterns that result in using more money than is available.¹²¹

Worthington refers to four general areas which are tested by the ANZ Survey.

Worthington writes that the survey involved:

- (1) mathematic literacy and standard literacy questions to test mathematical, reading, and comprehension skills;
- (2) financial understanding questions to evaluate understanding of what money is, how it is exchanged, and where it comes from and goes;
- (3) questions on financial competence to check understanding of basic financial services, financial records, awareness of risk and return and attitudes to spending and saving; and
- (4) questions on financial responsibility to confirm knowledge of life choices, rights, and responsibilities and confidence when resolving problems.¹²²

¹¹⁹ RAND Corporation, New Study Links a Couple's Higher Numeracy Skills with Greater Family Wealth (2010) <<http://www.rand.org/news/press/2010/11/10>>. Also see: James Smith, John McArdle and Robert Willis, 'Financial Decision Making and Cognition in a Family Context' (2010) 120 *The Economic Journal* 363.

¹²⁰ Investor Education Foundation, *Financial Capability in the United States National Survey* (2009).

¹²¹ Elaine Kempson, 'Framework for the Development of Financial Literacy Baseline Surveys: A First International Comparative Analysis' (*OECD Working Papers on Finance, Insurance and Private Pensions* No. 1, OECD, 2009), 5 <<http://www.oecd.org/dataoecd/7/16/45999254.pdf>>.

¹²² Andrew Worthington, 'Predicting Financial Literacy in Australia' (2006) 15 *Financial Services Review* 59, 65.

These factors relate to the knowledge, skills and confidence needed to participate in financial decision making, and to have outcomes that are financially positive without unnecessary cost.

2 Budgeting and living within means

Under budgeting comes the notion of keeping track of finances and reducing unnecessary spending.¹²³ In several surveys, only a few respondents kept track of expenses and not all paid credit card debt in full. Few prepared a household budget.¹²⁴ The Irish National Steering Group on Financial Education included living within ones own means as a skill necessary for effective budgeting,¹²⁵ and this reflects the finding that budgeting is sometimes necessary due to a limited income.¹²⁶

3 Saving and planning

While short term savings relate to budgeting, long term savings are relevant to retirement and large items required in life such as a house or a car. Superannuation is a retirement option that uses investment strategies, so an understanding of investment is important. The ANZ Saverplus program identifies three types of savers: those who do not save,

¹²³ World Bank, *Financial Literacy Survey Questionnaire* (2008) <http://siteresources.worldbank.org/INTECAREGTOPPRVSECDEV/Resources/RU-WB_Financial_Literacy_Questionnaire.pdf>; Financial Literacy Foundation, *Australians Understanding Money* (2007) <<http://www.understandingmoney.gov.au/documents/australiansunderstandingmoneyweb.pdf>>; National Foundation for Credit Counseling, *2010 Financial Literacy Survey* (2010), <<http://www.nfcc.org/NewsRoom/FinancialLiteracy/files2010/2010ConsumerFinancialLiteracySurveyFinalReport.pdf>>; Financial Services Authority, *Levels of Financial Capability in the UK* (2006) <<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>.

¹²⁴ Financial Services Authority, *Levels of Financial Capability in the UK* (2006) <<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>; Monetary Authority of Singapore, *National Financial Literacy Survey* (2005); ANZ, *ANZ Survey of Adult Financial Literacy in Australia* (2008); Financial Literacy Foundation, *Australians Understanding Money* (2007) <<http://www.understandingmoney.gov.au/documents/australiansunderstandingmoneyweb.pdf>>; Institute for Financial Literacy, Reykjavik University, *Financial Literacy in Iceland* (2009) <http://www.fe.is/eng_files/Page524.htm>.

¹²⁵ Financial Regulator of Ireland, *Improving Financial Capability – a Multi Stakeholder Approach* (2009) <http://www.financialcapability.ie/files/sg_report_01jul09_ek.pdf>.

¹²⁶ National Foundation for Credit Counseling, *2010 Financial Literacy Survey* (2010), <<http://www.nfcc.org/NewsRoom/FinancialLiteracy/files2010/2010ConsumerFinancialLiteracySurveyFinalReport.pdf>>.

those who save only for an item and those who habitually save for a rainy day.¹²⁷ This also includes setting aside funds for expected as well as unexpected events.¹²⁸

Planning is an important part of saving for most financially literate respondents in the surveys,¹²⁹ whether that be for retirement, life or estate planning. One key issue is whether people contribute to superannuation above and beyond existing 9% compulsory employer contributions to superannuation funds required under Australian law. Consolidating superannuation funds, and *additional* superannuation contributions, are important considerations for consumers. That is, whether people save for *voluntary* superannuation contributions.

Kempson identifies a number of core areas relevant to saving and planning:

- provision for an emergency through savings and insurance held;
- attitudes to financial planning;
- saving and planning for retirement; and
- saving and planning for expected expenses.

Provision for an emergency is expressed by way of a hypothetical situation in which a household loses the main wage for three months, testing reliance on savings. This also includes meeting an unexpected expense, such as a medical bill, illness or another unexpected emergency.

¹²⁷ ANZ, *SaverPlus: Making Saving a Lifetime Habit* <<http://www.anz.com/about-us/corporate-responsibility/community/financial-literacy-inclusion/programs/saver-plus>>.

¹²⁸ Investor Education Foundation, *Financial Capability in the United States* (2010) <<http://www.finrafoundation.org/resources/research/index.htm>>.

¹²⁹ Financial Literacy Foundation, *Australians Understanding Money* (2007) <<http://www.understandingmoney.gov.au/documents/australiansunderstandingmoneyweb.pdf>>; Financial Services Authority, *Levels of Financial Capability in the UK* (2006) <<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>.

4 Borrowing and debt literacy

Many consumers take up loans or mortgages. An indicator of competent borrowing is the loan amount relative to earnings.¹³⁰ A large proportion of respondents in the financial literacy surveys did not understand the difference between an unsecured or secured personal loan, or a fixed or variable interest rate on their mortgage. The concepts of positive gearing and negative gearing are also relevant, because this can increase the costs of borrowing and multiply potential losses. Given that all forms of debt stem from loans, debt literacy is a vital aspect of proficient borrowing.

A large number of consumers incur debt. A key competency of a financially literate consumer is the ability to understand debt, and the processes involved to avoid it, reduce it, repay it and maintain a good credit rating. It relates to competence in using loans,¹³¹ and responses to debt including the ability to determine whether credit is justified¹³² and the inclination to repay credit card debt and bills¹³³ when they are due.¹³⁴ Debt illiteracy is therefore related with over indebtedness, and an inability to reduce existing levels of debt.¹³⁵

The ANZ Survey explains this key competency in terms of defaults on credit card payments, and the result such defaults have on the credit ratings of borrowers. Half of those scoring in the bottom 20% of the ANZ testing did not understand that the primary

¹³⁰ Monetary Authority of Singapore, *National Financial Literacy Survey* (2005); Financial Regulator of Ireland, *Financial Capability in Ireland Questionnaire* (2008)
<<http://www.financialcapability.ie/files/Financial%20Capability%20Questionnaire.pdf>>.

¹³¹ Annamaria Lusardi, 'Education, Debt Literacy, Financial Experiences and Overindebtedness' (Presented to the OECD-Brazilian International Conference on Financial Education, 15-16 December 2009)
<<http://www.oecd.org/dataoecd/34/9/44280581.pdf>>.

¹³² World Bank, *Financial Literacy Survey Questionnaire* (2008)
<http://siteresources.worldbank.org/INTECAREGTOPPRVSECDEV/Resources/RU-WB_Financial_Literacy_Questionnaire.pdf>.

¹³³ National Foundation for Credit Counseling, *2010 Financial Literacy Survey* (2010),
<<http://www.nfcc.org/NewsRoom/FinancialLiteracy/files2010/2010ConsumerFinancialLiteracySurveyFinalReport.pdf>>.

¹³⁴ Financial Literacy Foundation, *Australians Understanding Money* (2007)
<<http://www.understandingmoney.gov.au/documents/australiansunderstandingmoneyweb.pdf>>; Bank of Japan, *Public Opinion Survey on Household Financial Assets and Liabilities* (2002)
<<http://www.shiruporuto.jp/e/survey/yoron2002/index.html>>.

¹³⁵ Annamaria Lusardi, 'Education, Debt Literacy, Financial Experiences and Overindebtedness' (Presented to the OECD-Brazilian International Conference on Financial Education, 15-16 December 2009)
<<http://www.oecd.org/dataoecd/34/9/44280581.pdf>>.

credit card holder is responsible for the debt on the credit card,¹³⁶ or that being 60 days late would likely lead to a bad credit rating.¹³⁷

5 Understanding financial products

Competence in investing and choosing financial products is a key feature of financial literacy. Financial products include shares, managed funds, savings accounts, personal loans and mortgages, superannuation and insurance. According to the UK Financial Services Authority:

... a person who makes capable choices is someone who collects information on a range of products, compares key features as well as cost, identifies risk, and takes an overall view of the product on offer in order to make the right choice. This kind of person will know when to say ‘no’ to a salesperson and when to switch providers. They will certainly know the key features of the products that they buy. Interestingly, however, it was generally accepted even this kind of highly capable person might struggle to understand the terms and conditions in the small print of the products they buy, as they are often not written in plain English.¹³⁸

Competence in key concepts relating to financial product features such as interest, compound interest, simple interest, inflation, risk and return¹³⁹ is required for making an informed and confident decision about those products.¹⁴⁰ A Japanese survey refers to three criteria for choosing financial products: safety, liquidity and profitability.¹⁴¹ Further, structuring investments is also important, and this includes an understanding of diversification, consolidation (for example, bringing together a number of loans into one loan to be repaid) and risk minimisation. ASIC includes “financial competence” as a skill and knowledge that constitutes financial literacy. This includes an understanding of the

¹³⁶ ANZ, *The ANZ Survey of Adult Financial Literacy in Australia* (2008) <http://www.anz.com/Documents/AU/Aboutanz/AN_5654_Adult_Fin_Lit_Report_08_Web_Report_full.pdf>.

¹³⁷ Ibid.

¹³⁸ Financial Services Authority, *Levels of Financial Capability in the UK* (2006), 84 <<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>.

¹³⁹ Financial Literacy Foundation, *Australians Understanding Money* (2007) <<http://www.understandingmoney.gov.au/documents/australiansunderstandingmoneyweb.pdf>>.

¹⁴⁰ ANZ, *ANZ Survey of Adult Financial Literacy in Australia* (2008).

¹⁴¹ Bank of Japan, *Public Opinion Survey on Household Financial Assets and Liabilities* (2002) <<http://www.shiruporuto.jp/e/survey/yoron2002/index.html>>.

relationship between risk and return, and the risks associated with particular financial products.¹⁴²

One key area of financial knowledge that appears to be overlooked by many financial literacy surveys is the knowledge to assess the financial health of a company. This relates to understanding the factors that make a company strong. This is very important in share trading, and many other investments like managed funds. A Japanese survey views the ability to assess the financial health of financial institutions and the strategies those institutions pursue as a key element of financial literacy.¹⁴³ However, this knowledge should go a step further than understanding the financial health of institutions that offer investments. Consumers can be armed with the information needed to assess the health of companies, which can create consumers who are better informed about shares. This information can include an understanding of cash flow, dividends, balance sheets, assets and liabilities (and whether enough liquid assets such as cash exist to support a company through hard times), earnings per share, high yield and low yield companies, franking by a company, and price to earnings ratio etc. The concepts just mentioned provide an important foundation to understanding the financial health of a company, and a financial institution.

The competency also includes the ability to seek *independent* advice, and assess that advice in an informed and rational manner. Investigation is viewed by the UK Financial Services Authority to be a key attribute of a financially capable person.¹⁴⁴ This is particularly important given the finding that 79% of respondents in one study simply

¹⁴² Australian Securities and Investments Commission, *Financial Literacy in Schools* (2003) <[http://www.asic.gov.au/asic/pdf/lib.nsf/lookupbyfilename/finlit_schools_dp.pdf/\\$file/finlit_schools_dp.pdf](http://www.asic.gov.au/asic/pdf/lib.nsf/lookupbyfilename/finlit_schools_dp.pdf/$file/finlit_schools_dp.pdf)>.

¹⁴³ Bank of Japan, *Public Opinion Survey on Household Financial Assets and Liabilities* (2002) <<http://www.shiruporuto.jp/e/survey/yoron2002/index.html>>. However, the vast majority of consumers do not undertake background research about companies before purchasing financial products offered by that company. The Australians Understanding Money survey found that background information about the reputation of the company was considered by only 6% of respondents before making a financial decision about products of that company.

¹⁴⁴ Financial Services Authority, *Levels of Financial Capability in the UK* (2006) <<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>.

relied on the product disclosure statement or non-independent advice.¹⁴⁵ Only 12% said they relied on well informed personal choice about the product. A financially literate and capable person will know where, and how, to get help and financial advice.¹⁴⁶ This can also include the ability to assess whether the advice is independent, and whether the advisor is working on commission based fees.¹⁴⁷

6 Recourse and self help

This competency includes the consumer's ability to *protect themselves*, and it concerns both recourse and self help. In relation to recourse, this includes understanding how to resolve disputes with financial institutions,¹⁴⁸ and the legal remedies and options available to consumers. This is summarized by the Financial Regulator of Ireland as an appreciation of the power of consumers against financial institutions,¹⁴⁹ and an understanding of all avenues of recourse available.

In relation to self help, this includes the ability to identify fraudulent schemes, interpret financial and legal language¹⁵⁰ and the ability and inclination to read terms and conditions.¹⁵¹ It may be that consumers are too time poor or lacking in motivation to review all the information and make an informed decision.¹⁵² However, consumers

¹⁴⁵ Ibid.

¹⁴⁶ Financial Services Authority, *Levels of Financial Capability in the UK* (2006) <<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>; Pirmin Fessler, Martin Schürz, Karin Wagner and Beat Weber, 'Financial Capability of Austrian Households' (2007) *Monetary Policy and the Economy* 50 <http://oenb.at/en/img/mop_2007_3_fessler_tcm16-69087.pdf>.

¹⁴⁷ Ronald McQuaid and Valerie Egdell, 'Financial Capability – Evidence Review' (Final Report, Employment Research Institute – Edinburgh Napier University, 2010), 1.

¹⁴⁸ World Bank, *Financial Literacy Survey Questionnaire* (2008) <http://siteresources.worldbank.org/INTECAREGTOPPRVSECDEV/Resources/RU-WB_Financial_Literacy_Questionnaire.pdf>.

¹⁴⁹ Financial Regulator of Ireland, *Financial Competency Framework Explained* <<http://www.financialcapability.ie/index.jsp?p=576&n=596>> as at 10 November 2010.

¹⁵⁰ Financial Literacy Foundation, *Australians Understanding Money* (2007) <<http://www.understandingmoney.gov.au/documents/australiansunderstandingmoneyweb.pdf>>.

¹⁵¹ Investor Education Foundation, *Financial Capability in the United States* (2010) <<http://www.finrafoundation.org/resources/research/index.htm>>.

¹⁵² John Kozup and Jeanne Hogarth, 'Financial Literacy, Public Policy, and Consumers' Self-Protection' (2008) 42 *The Journal of Consumer Affairs* 127, 132.

should have the confidence and ability to take action and seek assistance when difficulties arise.¹⁵³ This includes knowing where to go for help.

Effective recourse and self help is made possible by a consumer's awareness of institutions and the way those institutions are structured. An awareness of the institutional framework of financial markets and institutions is important because understanding bureaucracy increases the ability to resolve disputes and act proactively.¹⁵⁴ This can be summarized as competence in *navigating* institutions and bureaucracy, and knowing where to go to complain.

B “Financial literacy” linked to “financial capability”: proficiency in the “key competencies”

All the above competencies are necessary for financial literacy, but these competencies also require a degree of proficiency. Thus, a financially literate person must be proficient in the key competencies, having proficient knowledge, ability, skill and experience in the “key competencies”. This is assisted by positive attitudes about money and context which allows the exercise and acquisition of the “key competencies”. The components of financial literacy go beyond knowledge, to encompass abilities, skills, motivations, competence and understanding.¹⁵⁵

1 Knowledge

An important aspect of proficiency is the consumer's level of financial knowledge. This refers to a consumer's knowledge of the competencies. Huston shows that 47% of the 71 studies that she analyzed use the terms “financial literacy” and “financial knowledge” synonymously. This point is also made by Monticone in her Italian study.¹⁵⁶

¹⁵³ Australian Securities and Investments Commission, *Financial Literacy in Schools* (2003) <[http://www.asic.gov.au/asic/pdflib.nsf/lookupbyfilename/finlit_schools_dp.pdf/\\$file/finlit_schools_dp.pdf](http://www.asic.gov.au/asic/pdflib.nsf/lookupbyfilename/finlit_schools_dp.pdf/$file/finlit_schools_dp.pdf)>.

¹⁵⁴ This may extend to negotiations with financial institutions. See: CHOICE, *Bank Satisfaction Survey* (2010) <<http://www.choice.com.au/reviews-and-tests/money/banking/saving-money/bank-satisfaction-survey-2010/page/introduction.aspx>>.

¹⁵⁵ See: Ronald McQuaid and Valerie Egdell, ‘Financial Capability – Evidence Review’ (Final Report, Employment Research Institute – Edinburgh Napier University, 2010).

¹⁵⁶ Chiara Monticone, ‘How Much Does Wealth Matter in the Acquisition of Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 403.

Understanding foundation economic concepts is an example of “financial knowledge”. This can include the influence of inflation, the value of money over time, whether a product will retain its value,¹⁵⁷ and opportunity cost. For example, one finance business in Australia which has profited from purchasing shares from less knowledgeable shareholders at an undervalue responded to laws requiring disclosure of market prices by offering to pay a similar value but in installments over many years, which, over time, caused a lesser value to be paid. This took advantage of shareholders who did not understand the value of money over time.¹⁵⁸

2 Application of knowledge

A specific definition of financial literacy used in the United States, Canada,¹⁵⁹ the United Kingdom¹⁶⁰ and Australia¹⁶¹ introduces the importance of *applying* knowledge.¹⁶²

The phrase “financial capability” is advocated by the UK’s Financial Services Authority,¹⁶³ Statistics Canada,¹⁶⁴ the National Consumer Agency of Ireland¹⁶⁵ and Oesterreichische Nationalbank of Austria¹⁶⁶ to support the view that “financial literacy” is incomplete unless financial knowledge is put to practice.¹⁶⁷ This view is also supported

¹⁵⁷ World Bank, *Financial Literacy Survey Questionnaire* (2008)

<http://siteresources.worldbank.org/INTECAREGTOPPRVSECDEV/Resources/RU-WB_Financial_Literacy_Questionnaire.pdf>.

¹⁵⁸ Michael Pascoe, ‘Tweed, low ball offers and high returns’ *The Age* (8 November 2010)

<<http://www.theage.com.au/business/tweed-lowball-offers-and-high-returns-20101108-17j9z.html>>.

¹⁵⁹ Task Force on Financial Literacy, Office of the Canadian Minister of Finance, *About Financial Literacy: Definition* (2009) <<http://www.financialliteracyincanada.com>>.

¹⁶⁰ Financial Services Authority, *Money Made Clear* (2008) <<http://www.moneymadeclear.fsa.gov.uk>>.

¹⁶¹ Financial Literacy Foundation, *Understanding Money Pays Off* (2008) <<http://www.understandingmoney.gov.au>>.

¹⁶² Sandra Huston, ‘Measuring Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 296, 306.

¹⁶³ Financial Services Authority, *Levels of Financial Capability in the UK* (2006)

<<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>.

¹⁶⁴ Statistics Canada, *Canadian Financial Capability Survey* (2008) <<http://www.statcan.gc.ca/cgi-bin/imdb/p2SV.pl?Function=getSurvey&SDDS=5159&lang=en&db=imdb&adm=8&dis=2>>.

¹⁶⁵ The Financial Regulator of Ireland, *Financial Capability* <<http://www.financialcapability.ie/home>> as at 15 December 2010.

¹⁶⁶ Pirmin Fessler, Martin Schürz, Karin Wagner and Beat Weber, ‘Financial Capability of Austrian Households’ (2007) *Monetary Policy and the Economy* 50

<http://oenb.at/en/img/mop_2007_3_fessler_tcm16-69087.pdf>.

¹⁶⁷ Olga Kuzina, ‘The Level of Financial Literacy of Russians: Before and During the Crisis of 2008-2009’ (Paper presented at the 30th CIRET Conference, New York, October 2010), 2.

by Huston, who argues that financial literacy includes knowledge and *proper* application.¹⁶⁸ The UK Treasury has noted:

Financially capable consumers plan ahead, find and use information, know when to seek advice and can understand and act on this advice, leading to greater participation in the financial services market.¹⁶⁹

However, knowledge cannot be usefully applied without relevant skills.

3 Skills and confidence

A financially capable person possesses all the skills necessary to effectively manage finances to achieve well being, and this includes communication skills, interpersonal skills, reading skills, mathematical and computational skills etc. The definition of financial literacy adopted in the United States by the Jump\$tart coalition is as follows:

Financial literacy is the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being.

The element of confidence is added to the Canadian¹⁷⁰ definition of financial literacy, together with skills:

Financial literacy means having the knowledge, skills and confidence to make responsible financial decisions.¹⁷¹

Remund states:

Based upon a review of research studies since 2000, the many conceptual definitions of financial literacy fall into five categories: (1) knowledge of financial concepts, (2) ability to communicate

¹⁶⁸ Sandra Huston, 'Measuring Financial Literacy' (2010) 44 *The Journal of Consumer Affairs* 296, 307.

¹⁶⁹ Her Majesty's Treasury (UK), *Financial Capability: The Government's Long Term Approach* (2007) <<http://www.oecd.org/dataoecd/46/38/37965841.pdf>>.

¹⁷⁰ David Remund, 'Financial Literacy Explicated: The Case for a Clearer Definition in an Increasingly Complex Economy' (2010) 44 *The Journal of Consumer Affairs* 276, 278.

¹⁷¹ Task Force on Financial Literacy (Canada), *About Financial Literacy* <<http://www.financialliteracyincanada.com/eng/about-financial-literacy/definition.php>> as at 15 December 2010.

about financial concepts, (3) aptitude in managing personal finances, (4) skill in making appropriate financial decisions and (5) confidence in planning effectively for future financial needs.¹⁷²

Financial literacy therefore requires *communication* skills. It includes the “ability” to apply knowledge and to communicate that knowledge, making financial literacy vital to effective *decision making*.¹⁷³ This decision making is assisted with the “aptitude” to understand the complex nature of financial products and finances including the ability and understanding to manage finances.¹⁷⁴ This understanding is made possible by the “skill” necessary to make informed,¹⁷⁵ successful¹⁷⁶ and intelligent¹⁷⁷ financial decisions from that knowledge. These skills have even been extended to *critical thinking skills* and decision making, with the ability to distinguish a favourable path from an unfavourable path depending on ones own needs.¹⁷⁸ Skillfulness can enhance confidence, although ‘not all scholars integrate confidence in financial planning into the financial literacy equation’.¹⁷⁹

4 Contextual and economic awareness

One major criticism of financial literacy definitions is that they ‘do not stress the ... influence of an increasingly complex and volatile economy’.¹⁸⁰ A good definition should therefore consider contextual factors that impact financial decisions, and the degree to which consumers are aware of those factors. Remund proposes the following definition of financial literacy:

¹⁷² David Remund, ‘Financial Literacy Explicated: The Case for a Clearer Definition in an Increasingly Complex Economy’ (2010) 44 *The Journal of Consumer Affairs* 276, 279.

¹⁷³ Jonathan Fox, Suzanne Bartholomae and Jinkook Lee, ‘Building the Case for Financial Education’ (2005) 39 *Journal of Consumer Affairs* 195, 195.

¹⁷⁴ William Emmons, ‘Consumer-Finance Myths and Other Obstacles to Financial Literacy’ (2005) *St. Louis University Public Law Review* 335, 336.

¹⁷⁵ Sherrie Rhine and Maude Toussaint-Comeau, ‘Adult Preferences in the Delivery of Personal Financial Information’ (2002) 13 *Financial Counseling and Planning* 11, 13.

¹⁷⁶ JumpStart Coalition, *Survey of the Financial Literacy of Young American Adults* (2008).

¹⁷⁷ National Council on Economic Education, *Financial Fitness for Life* (2008)

<<http://fffl.ncee.net>>.

¹⁷⁸ John Kozup and Jeanne Hogarth, ‘Financial Literacy, Public Policy, and Consumers’ Self-Protection’ (2008) 42 *Journal of Consumer Affairs* 127, 131.

¹⁷⁹ David Remund, ‘Financial Literacy Explicated: The Case for a Clearer Definition in an Increasingly Complex Economy’ (2010) 44 *The Journal of Consumer Affairs* 276, 281.

¹⁸⁰ *Ibid*, 285.

Financial literacy is a measure of the degree to which one understands key financial concepts and possesses the ability and confidence to manage personal finances through appropriate, short-term decision-making and sound, long-range financial planning, while mindful of life events and changing economic conditions.¹⁸¹

Financial literacy may start with the person, but considerations external to the person influence the suitability or efficacy of a particular investment. Therefore, understanding economic and market conditions, and the different needs of short term and long term planning, is another important attribute of a financially literate person.

Remund separates short term and long term decision making, and in so doing identifies very different elements of financial management which require differences in knowledge and skills, and a consideration of the effects of external forces on different forms of financial planning: short term and long term planning, in a way that is *suitable* for one's own life. He makes the decision-making contingent on *external* factors. These external factors include life events and the economy, thereby showing that good decision making depends upon the context in which it is made. "Global understanding"¹⁸² or a "worldview"¹⁸³ takes a contextual approach to financial literacy, taking into account the market, such as a credit based economy, when assessing levels of financial literacy.¹⁸⁴ "Worldview" makes clear use of the context that shapes financial decisions, because particular financial behaviours perceived to be undesirable in a specific economic climate can be desirable in a different economic environment. "Procyclicality" is a useful example of contextual awareness, because an understanding of market cycles can allow people to borrow at optimal rates.

¹⁸¹ Ibid, 284.

¹⁸² National Council on Economic Education, *Financial Fitness for Life* (2008) <<http://fffl.ncee.net>>.

¹⁸³ Annamaria Lusardi and Olivia Mitchell, 'Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education' (2007) 42 *Business Economics* 35.

¹⁸⁴ Karen Gross, Joanne Ingham and Richard Matasar, 'Strong Palliative, but Not a Panacea: Results of an Experiment Teaching Students about Financial Literacy' (2005) 35 *NASFAA Journal of Student Financial Aid* 7, 12.

5 Attitudes and motivation to take action

The World Bank explains that “financial literacy” is understood by the link from knowledge, to skills, to attitudes, to behaviour.¹⁸⁵ This link is important, because knowledge influences attitudes, which then manifests into particular types of behaviour.¹⁸⁶ For example, the Australians Understanding Money survey linked particular attitudes about money with behaviours.¹⁸⁷ Attitudes included whether respondents considered retirement to be too distant in the future to prompt saving, whether people live for today or the future, and whether insurance is necessary. Other attitudes include preferences for risk.¹⁸⁸ Therefore, attitudes are an important element of the appropriateness of specific financial knowledge.

The UK Treasury has described financial capability in the following terms:

... people’s knowledge and skills to understand their own financial circumstances, along with the motivation to take action.¹⁸⁹

The matrix of financial competencies therefore includes the ‘motivation to efficiently manage finances and effect change’.¹⁹⁰

¹⁸⁵ Robert Holzmann, ‘Bringing Financial Literacy and Education to Low and Middle Income Countries: The Need to Review, Adjust and Extend Current Wisdom’ (Social Protection Discussion Paper No 56501, World Bank, 2010).

¹⁸⁶ ANZ, *The ANZ Survey of Adult Financial Literacy in Australia* (2008) <http://www.anz.com/Documents/AU/Aboutanz/AN_5654_Adult_Fin_Lit_Report_08_Web_Report_full.pdf>; Financial Literacy Foundation, *Australians Understanding Money* (2007) <<http://www.understandingmoney.gov.au/documents/australiansunderstandingmoneyweb.pdf>>.

¹⁸⁷ Financial Literacy Foundation, *Australians Understanding Money* (2007) <<http://www.understandingmoney.gov.au/documents/australiansunderstandingmoneyweb.pdf>>.

¹⁸⁸ Investor Education Foundation, *Financial Capability in the United States* (2010) <<http://www.finrafoundation.org/resources/research/index.htm>>.

¹⁸⁹ Her Majesty’s Treasury (UK), *Financial Capability: The Government’s Long Term Approach* (2007) <<http://www.oecd.org/dataoecd/46/38/37965841.pdf>>.

¹⁹⁰ Ronald McQuaid and Valerie Egdell, ‘Financial Capability – Evidence Review’ (Final Report, Employment Research Institute – Edinburgh Napier University, 2010), 5.

C The opportunity to acquire and use financial literacy skills

It is important that a financially literate person have the opportunity to acquire skills, and use them.

Participation in economic life should maximize life chances and enable people to lead fulfilling lives; this requires knowledge and competence, ability to action that knowledge, and *opportunity* [emphasis added] to act.¹⁹¹

The last point relating to “opportunity” reveals the social aspect of financial literacy, reliant on the equitable distribution of social resources that allows people to participate in the financial markets. This can be referred to as the *financial inclusiveness* of a particular society.

The World Bank report by Holzmann cites the definition of financial capability given by Kempson. Kempson explains that:

A financially capable person is one who has the knowledge, skills and confidence to be aware of financial opportunities, to know where to go for help, to make informed choices, and to take effective action to improve his or her financial well-being while an enabling environment for financial capability building would promote the acquisition of those skills.¹⁹²

An “enabling environment” refers to an infrastructure, business model and regulatory system which promotes and allows participation, excluding no particular groups or people for arbitrary reasons.

¹⁹¹ Elizabeth Johnson and Margaret Sherraden, ‘From Financial Literacy to Financial Capability Among Youth’ (2007) 34 *Journal of Sociology & Social Welfare* 119, 122 cited in David Remund, ‘Financial Literacy Explicated: The Case for a Clearer Definition in an Increasingly Complex Economy’ (2010) 44 *The Journal of Consumer Affairs* 276, 283.

¹⁹² Robert Holzmann, ‘Bringing Financial Literacy and Education to Low and Middle Income Countries: The Need to Review, Adjust and Extend Current Wisdom (Social Protection Discussion Paper No 56501, World Bank, 2010).

III THE MATRIX OF ATTRIBUTES REQUIRED FOR FINANCIAL LITERACY

It is useful to review in point form the attributes required for “financial literacy”, such that the concepts are linked together to form a complete picture of “financial literacy”.

The matrix of proficiencies required in the key competencies, and key outcomes, include:

- *Knowledge* of financial information and “key competencies”;
- which are *understood*;
- which can be *communicated*;
- that can be *applied*;
- with *experience* and *skills*;
- knowing where to go for *independent* and trustworthy help when necessary;
- with the *ability* to assess long term and short term goals, to make *informed judgments* and to *plan* and *make decisions* relating to finance;
- with *confidence* and *motivation* to take action;
- in a way that can be *measured* by knowing the *key competencies* of financial literacy;
- where a decision is considered in light of its context, such as economic conditions or forecasts;
- in an *environment* that allows the *opportunity* to acquire and exercise financial literacy skills;
- and the action results in *positive outcomes*;
- thereby *increasing lifetime utility from consumption*.

Financial literacy therefore depends on *ability*, *aptitude*, and *opportunity*.

IV CONCLUSION

Financial literacy is best considered in terms of key competencies, and proficiency in those key competencies. The key competencies are: (1) money basics, including numeracy and money management skills; (2) budgeting and living within means; (3) saving and planning; (4) borrowing and debt literacy; (5) choosing and understanding financial products; and (6) understanding consumer recourse and self help.

Financial literacy starts with proficient knowledge of the six key competencies. Other proficiencies include: (1) ability and application of knowledge; (2) skills and experience; (3) contextual and economic awareness; and (4) attitudes and motivation to take action.

The ability to apply the knowledge of the key competencies is complimented by skills and experience in those competencies, which enhances the efficiency with which one is able to act on their knowledge. Contextual and economic awareness of the market variables is an important proficiency because it allows people to understand the influence of such context on the subject matter of the key competencies. The overarching proficiency is motivation to take action and attitudes, because without this proficiency none of the others will matter. This also reflects the cycle of financial literacy, because insufficient literacy may lead to lack of motivation.

As a result, financial literacy is best defined by the process of linking the key competencies with the proficiencies, and taking into account whether the environment is inclusive such that people have the opportunity to become proficient in the competencies. Financial literacy is therefore *proficiency* in the *key competencies*, in an environment that provides the *opportunity* to become proficient in the competencies, and to realize *financial goals*.

Part C – Flaws in Consumer Decision Making

I FLAWS IN THE DECISION MAKING PROCESS OF CONSUMERS

A number of flaws are present in consumer decision making. In relation to the selection and retention of financial products, a number of flaws in decision making have been identified which undermine financial efficiency and which result in suboptimal consumer decisions, irrespective of one's level of literacy. This part considers those factors *within the control* of consumers which are identified in the financial literacy surveys, and which are flaws in decision making. Factors *outside the control* of consumers are considered in Part D of this research report, which examines behavioural economics, socio-demographics and social forces and psychology.

Flaws *within the control* of consumers fall within two broad categories: (1) investments and choosing financial products; and (2) financial information.

In relation to investments and choosing financial products, the following flaws have been identified:

- Consumers may not consider the key features of financial products before making a decision to purchase a product. This includes not considering risk and return, being over optimistic about return and having price insensitivity such that consumers are unaware of the actual cost of the products they hold;
- Consumers may not read the terms and conditions of financial products;
- Consumers may not compare the price and quality of different financial products from different providers;
- Consumers may not evaluate financial products they already own to determine whether they are still needed;
- Consumers may purchase financial products they do not need;
- Consumers may not consider that the fees and charges attaching to financial products contribute to the overall cost of owning those products;
- Consumers may ignore their investment objectives and needs when purchasing financial products;

- Consumers may be “short sighted”, or look at initial short term cost without fully considering long term benefit and cost;
- A number of consumers *rigidly* “compartmentalize” money. This means that some consumers may allocate particular funds or a percentage of income to saving, and despite having accumulating credit card debt, continue to save and not repay that credit card debt.

In relation to financial information, the following flaws have been identified:

- Consumers may not receive or seek independent advice;
- Consumers may believe that they are receiving independent advice from an entity with a vested interest;
- Consumers may not know important questions to ask their advisor;
- Consumers may trust financial institutions to provide them with unbiased financial information in circumstances when some of the information is biased;
- Consumers may lack the ability to filter good advice from bad advice;
- Consumers may not gather information about financial products;
- Consumers may rely on the advice of family or friends who are not financial professionals when making investment decisions.

A Investments and choosing financial products: a brief introduction

This part commences with a brief discussion of the features of financial products in order to provide the context for the subsequent discussion of the flaws associated with considering these features.

Many consumers do not consider features of financial products when purchasing those products. Some key considerations in investment decisions, which are also skills acquired through experience with saving and budgeting, include:

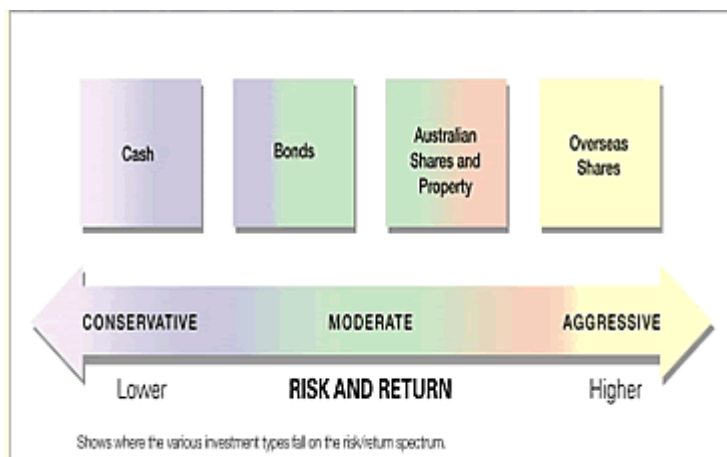
- Assessing rates of interest paid or payable;
- Fees and charges;
- Terms and conditions of the investment; and
- The ease of access to different types of investments.

Other key considerations before investing include assessing:

- Risk, such as an understanding of aggressive versus conservative strategies, which investments are high risk like certain shares or property as well as identifying high risk schemes and scams;
- Return, usually reflected in interest rate paid;
- Diversification, or spreading the risk among a number of investments;
- The quality of financial information relied upon, and its source;
- Rights and responsibilities as a consumer of financial products;
- The specific terms of the investment;
- The suitability of that investment to the consumer's specific needs; and
- The investment's costs when weighed against its benefits.

It is possible to classify investments into risk categories. The Commonwealth Bank of Australia has published a "Risk and Return Meter".¹⁹³ The meter shows the relationship between (1) particular investment types; (2) investment strategies associated with those investment types and (3) the level of risk and return linked with those two variables.

Figure 3: Risk and Return Meter

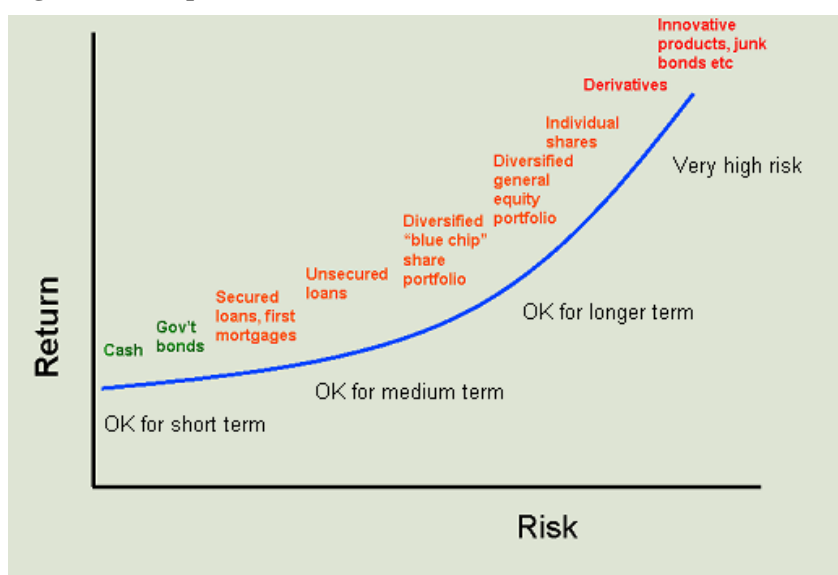


Source: Commonwealth Bank of Australia

¹⁹³ Commonwealth Bank of Australia, *Risk versus Return* <<http://www.commbank.com.au/personal/investments/investment-centre/risk-versus-return.aspx>> as at 17 December 2010.

ASIC has also emphasised that as return increases so too does risk, and that all investments carry risk.¹⁹⁴ The Fido risk and return calculator is particularly useful for consumers, and, to assist further, ASIC provides the following graph to explain the level of risk attaching to particular financial products.¹⁹⁵ In relation to derivatives, Commonwealth Securities Ltd explains that derivatives or Contracts for Difference (CFD's) are risky options, being highly leveraged.¹⁹⁶ However, understanding these products is challenging, and it usually requires having faith in a financial institution. The same can be said for junk bonds¹⁹⁷ and innovative products.

Figure 4: The Spectrum of Risk for Particular Financial Products



Source: Australian Securities and Investments Commission

¹⁹⁴ Australian Securities and Investments Commission, *Risk and Return Calculator* <<http://www.fido.gov.au/fido/fido.nsf/byheadline/Risk+return+calculator?openDocument>> as at 17 December 2010.

¹⁹⁵ Ibid.

¹⁹⁶ Commonwealth Securities, *Products* <<http://www.comsec.com.au/public/Products/ASXCFDs.aspx>> as at 17 December 2010.

¹⁹⁷ Bryan Keogh and John Detrixhe, 'Bond Distress Drops to 5-Month Low as Junk Rises Above Par: Credit Markets' *Bloomberg* (9 October 2010) <<http://www.bloomberg.com/news/2010-10-07/bond-distress-drops-to-5-month-low-as-junk-rises-above-par-credit-markets.html>>.

It is generally understood that all investments carry risk, with cash and government bonds typically being the least risky options. Strategies like diversification and blue chip stock portfolios may reduce risk, but not eliminate it.

A Japanese survey identifies three criteria for choosing financial products: safety, liquidity and profitability.¹⁹⁸ Therefore, other than risk and return, the ability of the product to be converted quickly into useful cash is an important attribute of a financial product.

Many consumers do not consider these factors due to flaws in decision making *within their control*.

1 *Consumers may not consider key features of financial products*

The UK Financial Services Authority found that one quarter of respondents to a survey did not base their decision to acquire a financial product on the attributes of the financial product, instead basing their decision on the convenient location of the bank or previous experience with the provider.¹⁹⁹ Convenience and prior experience with a provider appear to eclipse most rational considerations about which product may be most suitable for a consumer. Rational considerations include cost and expected return.

(a) Risk, return and diversification

One clear flaw in decision making is that some consumers cannot accurately identify the level of risk and return attaching to particular products.²⁰⁰ Respondents to the UK Financial Services Authority survey tended to also not understand that with higher return comes the possibility of higher risk.²⁰¹

¹⁹⁸ Bank of Japan, *Public Opinion Survey on Household Financial Assets and Liabilities* (2002) <<http://www.shiruporuto.jp/e/survey/yoron2002/index.html>>.

¹⁹⁹ Financial Services Authority, *Levels of Financial Capability in the UK* (2006) <www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>.

²⁰⁰ Ibid.

²⁰¹ Ibid. It does not come as a surprise, therefore, that investors support the view that “high risk ventures” should not be sold to the public. See: Ontario Securities Commission – Joint Standing Committee on Retail Investor Issues, *Report on the Public Consultation on Product Suitability* (2008), <http://www.osc.gov.on.ca/static/_JSC/jsc_20081217_product-suitability-rpt.pdf>.

In this survey, 18% of respondents thought that shares have no risk. The Commonwealth Bank of Australia's Australian Financial Literacy Assessment, which tested high school students, found that two thirds could not assess which investments were riskier: shares, property, government bonds or superannuation funds.²⁰² Further, the Australians Understanding Money survey found that returns would not be considered by 61% of young people, and risk would not be considered by 77% of young people when choosing an investment. Of concern is that risk and return is only considered by 34% of respondents.²⁰³

Few respondents also considered the benefits of diversification of investments to reduce risk. The Australians Understanding Money survey found that only 5% of respondents considered diversity and spread of investments when making an investment decision.²⁰⁴

As a result, these findings show that many consumers do not take into account three important features of financial products: risk, return and diversification.

(b) Over-optimism about return

Profits and return appear to outweigh risk when consumers make financial decisions. One Canadian survey found that the respondents were overly optimistic about return, expecting high returns without expecting equal amounts of risk. The survey found that:

The relationship between low risk and low return as well as high risk and high return is asymmetrical. Few respondents expect low returns (13%), but over one third (37%) expect low

²⁰² Commonwealth Bank of Australia, *Australian Financial Literacy Assessment* (2005) <http://about.commbank.com.au/GAC_File_Metafile/0,1687,11833%255F2006%255Fafla%255Freport,00.pdf>.

²⁰³ Financial Literacy Foundation, *Australians Understanding Money* (2007) <<http://www.understandingmoney.gov.au/documents/australiansunderstandingmoneyweb.pdf>>.

²⁰⁴ Financial Literacy Foundation, *Australians Understanding Money* (2007) <<http://www.understandingmoney.gov.au/documents/australiansunderstandingmoneyweb.pdf>>.

risks. On the other hand, one third (32%) expect high returns, but only one-tenth (12%) expect high risks.²⁰⁵

This is a common theme in most financial literacy surveys, showing a lack of familiarity among most investors of the relationship between risk and return.

(c) Price insensitivity

The price or cost of holding a financial product is unknown to some consumers, fueling speculation that these consumers have “price insensitivity” and purchase the product for reasons other than price. While this appears illogical, it is not uncommon and its occurrence is recorded in surveys.

A survey by the Financial Regulator of Ireland found that ‘it is also notable that the vast majority of respondents with a mortgage were unaware of the interest rate applied to their mortgage, and one third could not even guess’.²⁰⁶ This goes beyond not reading terms of products to a “price insensitivity”, being unconcerned with price or expecting the price to be “reasonable”. Some consumers do not check the price of products because they expect that market competition guarantees that all providers will provide the same price.²⁰⁷ The UK Financial Services Authority found that:

Only 37% of savings account holders choose their account based on the interest rate paid. 49% of savings account holders cannot estimate the current level of interest. 49% of people choose a credit card based on the interest rate, and 11% simply choose it because it came with their current account.²⁰⁸

Some consumers therefore do not consider price when making an investment decision.

²⁰⁵ Ontario Securities Commission, *A Report to The Joint Standing Committee on Retail Investor Issues: Retail Investor Information Survey* <http://www.osc.gov.on.ca/static/_JSC/jsc_retail-investor-info-survey.pdf>, 18.

²⁰⁶ Financial Regulator of Ireland, *Financial Capability in Ireland Questionnaire* (2008) <<http://www.financialcapability.ie/files/Financial%20Capability%20Questionnaire.pdf>>, [2.3.2].

²⁰⁷ Malcolm Cook, Fionnuala Earley, Jody Ketteringham and Sarah Smith ‘Losing Interest: How Much Can Consumers Save by Shopping Around for Financial Products’ (Occasional Paper Series 19, Financial Services Authority, 2001) <<http://www.fsa.gov.uk/pubs/occpapers/op19.pdf>>.

²⁰⁸ Financial Services Authority, *Financial Capability in the UK: Establishing a Baseline Survey* (2006) <http://www.fsa.gov.uk/pubs/other/fincap_baseline.pdf>, 18; National Foundation for Credit Counseling, *Consumer Financial Literacy Survey* (2010)

2 Consumers may not read the terms and conditions of products

A large number of consumers do not read or do not understand the terms and conditions of financial products.

The National Foundation for Credit Counseling's 2010 Financial Literacy Survey²⁰⁹ found that 44% of adults had a home mortgage, but 33% of that sample said that the terms of their mortgage were unknown. These unknown terms related to:

- The amount of monthly repayments (14%);
- The interest rate (12%);
- The duration of the initial rate (9%);
- The private mortgage insurance (PMI) they had agreed to pay in addition to the monthly mortgage payment (9%); and
- The new dollar amount of their mortgage after it reset (11%).

This is supported by the findings of the Investor Education Foundation's Financial Capability in the United States National Survey²¹⁰ and the Monetary Authority of Singapore's National Financial Literacy Survey.²¹¹ The surveys found that few respondents were knowledgeable about the products they owned. A UK survey found that 'just over half had read the terms and conditions in detail, whilst almost one in ten had neither read them nor asked anyone else to do so on their behalf'.²¹²

<<http://www.nfcc.org/NewsRoom/FinancialLiteracy/files2010/2010ConsumerFinancialLiteracySurveyFinalReport.pdf>>.

²¹⁰ Investor Education Foundation, *Financial Capability in the United States* (2010)

<<http://www.finrafoundation.org/resources/research/index.htm>>.

²¹¹ Monetary Authority of Singapore, *First National Financial Literacy Survey Reveals Encouraging Findings About Singaporeans Approach to Money Matters* (2005)

<http://www.mas.gov.sg/news_room/press_releases/2005/First_National_Financial_Literacy_Survey_2005.html>.

²¹² Financial Services Authority, *Levels of Financial Capability in the UK* (2006)

<<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>, 111.

3 Consumers may not undertake comparison shopping

Comparison shopping by consumers is a key indicator of financial literacy.²¹³

Considering whether consumers shop around and what product features were considered when making a decision are relevant questions in financial literacy surveys.²¹⁴

The ANZ Survey found that people scoring in the top 20% of its financial literacy test were much more likely than the bottom 20% to undertake comparison shopping, particularly for insurance and mortgages. This was linked to an increased effort to minimize fees and utilize low cost and time efficient options such as internet banking.²¹⁵ The minority in most surveys undertook comparison shopping to find the best deal. A survey by Australian insurance company AAMI found that two thirds of respondents did not compare products or shop around when renewing their home and contents insurance.²¹⁶

²¹³ World Bank, *Financial Literacy Survey Questionnaire (2008)*

<http://siteresources.worldbank.org/INTECAREGTOPPRVSECDEV/Resources/RU-WB_Financial_Literacy_Questionnaire.pdf>; ANZ, *The ANZ Survey of Adult Financial Literacy in Australia (2008)*

<http://www.anz.com/Documents/AU/Aboutanz/AN_5654_Adult_Fin_Lit_Report_08_Web_Report_full.pdf>; Investor Education Foundation, *Financial Capability in the United States (2010)*

<<http://www.finrafoundation.org/resources/research/index.htm>>; Financial Services Authority, *Levels of Financial Capability in the UK (2006)* <<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>;

Pirmin Fessler, Martin Schürz, Karin Wagner and Beat Weber, 'Financial Capability of Austrian Households' (2007) *Monetary Policy and the Economy* 50

<http://oenb.at/en/img/mop_2007_3_fessler_tcm16-69087.pdf>; Financial Regulator of Ireland, *Financial Capability in Ireland Questionnaire (2008)*

<<http://www.financialcapability.ie/files/Financial%20Capability%20Questionnaire.pdf>>.

²¹⁴ Elaine Kempson, 'Framework for the Development of Financial Literacy Baseline Surveys: A First International Comparative Analysis' (OECD Working Papers on Finance, Insurance and Private Pensions No. 1, OECD, 2009) <<http://www.oecd.org/dataoecd/7/16/45999254.pdf>>, 6.

²¹⁵ ANZ, *The ANZ Survey of Adult Financial Literacy in Australia (2008)*

<http://www.anz.com/Documents/AU/Aboutanz/AN_5654_Adult_Fin_Lit_Report_08_Web_Report_full.pdf>.

²¹⁶ Anthony Keane, 'Shop Around to Save' *The Advertiser* (30 October 2007)

<<http://www.news.com.au/money/shop-around-to-save/story-e6f1fmc1-111114755610>>.

4 *Consumers may not assess the appropriateness of already owned products*

A large number of consumers do not scrutinize financial products they already own, and therefore do not review the appropriateness and cost of continuing to own such products.²¹⁷ The Financial Regulator of Ireland found considerable inertia in the market, showing that people tend to retain products without much review.²¹⁸

5 *Consumers may purchase unnecessary products*

A lack of review is also present before purchase, and this is reflected in the purchase of unneeded financial products. A large number of consumers hold inappropriate insurance policies which do not meet their needs as well as other policies would.²¹⁹ In a study by the UK Financial Services Authority, some respondents did not have appropriate household insurance while holding unneeded insurance, thereby forfeiting protection while incurring unnecessary costs.²²⁰ In addition to incurring such costs, consumers do not fully evaluate the costs of holding particular products.

6 *Consumers may not consider fees and charges*

Consumers may not consider the fees and charges associated with financial products when making a decision to purchase a financial product. The Australians Understanding Money survey found that only 40% of respondents considered fees and charges when investing.²²¹ This oversight by over half of consumers to investigate fees and charges payable reflects a flaw in decision making that drives up costs of investing unnecessarily.

²¹⁷ Elaine Kempson, 'Framework for the Development of Financial Literacy Baseline Surveys: A First International Comparative Analysis' (OECD Working Papers on Finance, Insurance and Private Pensions No. 1, OECD, 2009), <<http://www.oecd.org/dataoecd/7/16/45999254.pdf>>, 22.

²¹⁸ Financial Regulator of Ireland, *Financial Capability in Ireland Questionnaire* (2008) <<http://www.financialcapability.ie/files/Financial%20Capability%20Questionnaire.pdf>>, [2.3.2].

²¹⁹ Financial Services Authority, *Levels of Financial Capability in the UK* (2006) <<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>; Financial Regulator of Ireland, *Financial Capability in Ireland Questionnaire* (2008) <<http://www.financialcapability.ie/files/Financial%20Capability%20Questionnaire.pdf>>.

²²⁰ Financial Services Authority, *Levels of Financial Capability in the UK* (2006) <<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>.

²²¹ Financial Literacy Foundation, *Australians Understanding Money* (2007) <<http://www.understandingmoney.gov.au/documents/australiansunderstandingmoneyweb.pdf>>.

7 *Consumers may ignore investment objectives*

The Australians Understanding Money survey also found that only 44% of respondents considered whether the investment meets their investment objectives.²²² A consumer who purchases a product that does not meet their investment objectives will therefore have an unneeded product that has little value to them and which may be unsustainable to keep.

8 *Consumers may be “short sighted”*

Consumers tend to be distracted by short term prospects of loss or gain, and this prevents optimal long term wealth creation and financial efficiency.

Cole and Fernando write:

While much of the attention on financial literacy in the US focuses on investment decisions, economists regularly wonder why, for example, S&P 500 index mutual funds survive in the market, charging relatively high fees, when very low-cost alternatives exist. A consumer may not perceive a big difference between two funds, each earning 7% before fees, but with one charging 0.2% per annum in fees, and another charging 1.2% in fees. However, \$10,000 invested in the former would yield \$71,968 after 40 years, while the latter would yield only \$54,271—a difference of over 30%.²²³

However, a study by Haslem, Baker and Smith found that:

One explanation for the existence of high-priced index funds is that they tend to require *significantly lower minimum initial purchases*.²²⁴

Therefore, lower minimum initial purchases may induce entry into high priced funds. The investment may end up costing more because consumers may not consider the long term costs of the investment.

²²² Financial Literacy Foundation, *Australians Understanding Money* (2007)

<<http://www.understandingmoney.gov.au/documents/australiansunderstandingmoneyweb.pdf>>.

²²³ Shawn Cole and Nilesh Fernando, ‘Assessing the Importance of Financial Literacy’ (2008) 9 *Finance for the Poor* 1 <<http://www.adb.org/Documents/Periodicals/Microfinance/finance-200803.pdf>>.

²²⁴ John Haslem, Kent Baker and David Smith, ‘Institutional S&P 500 Index Mutual Funds as Financial Commodities: Fact or Fiction?’ (2008) 17 *The Journal of Investing* 24.

9 Consumers may “compartmentalize” money

“Compartmentalization” of money refers to separating funds into different areas and allocating to those funds a purpose.²²⁵ Some consumers take seriously their obligation to save, and this objective may be more important than paying credit card debt on time. This “compartmentalization” results in unnecessary costs because the funds are perceived to have different purposes, and a lack of flexibility with finances results in fees, charges and unnecessary cost.

B Financial information

A significant flaw in decision making comes from an unwillingness to gather and assess information. Consumers may not actively seek independent financial information or critique information that is given, even if the information provider has a financial interest in the decision of the consumer to acquire a particular financial product. Consumers may rely on poor or biased information, without taking the time to investigate financial decisions and critique advice that is offered.

1 Consumers may not receive or seek independent advice

Independent financial advice is sometimes not given to consumers, or sought by them. Financial institutions and advisors may have financial interests in particular products, and encouraging the purchase of such products may be misunderstood by consumers as an independent endorsement of those products. A large majority of respondents in the Financial Services Authority survey (79%) relied on product information or non-independent advice when making a financial decision. This shows that most consumers may not seek independent advice, even when biased information is provided to them. A large part of investing is seeking the advice of a financial professional,²²⁶ and the two main sources of information for investors are banks and advisors.

²²⁵ See: Aparna Dalal and Jonathan Marduch, ‘The Psychology of Microinsurance: Small Changes Can Make a Surprising Difference’ (Briefing Note, International Labour Organization, September 2010), 2.

²²⁶ J Hogarth, ‘Financial Education and Economic Development’ (Paper presented at the G8 International Conference on Improving Financial Literacy, 29 November 2006, Moscow, Russia) <<http://www.oecd.org/dataoecd/20/50/37742200.pdf>>.

(a) Banks

A significant number of consumers trust banks to provide independent financial advice about their products, and the suitability of their products when compared with other similar products on the market. An Austrian survey found that 69% of respondents relied on the information provided by their “own” bank when making a financial decision.²²⁷ *Europa* reports that consumers lack appropriate financial advice, and a mystery shopping exercise revealed that ‘24 out of 25 banks in Germany provided unsuitable financial advice’.²²⁸ Consumers may therefore be unaware that banks have an interest in providing their specific products, or products which may be more profitable to provide. This profit incentive also extends to some advisors.

(b) Advisors

The ability of advisors to give independent advice is questionable in light of commission based fees.²²⁹ However, consumers are able to determine whether advice is biased or independent provided they have the necessary information.

A chartered accountant with 30 years experience, suggests the following questions be asked of financial advisors:

[1] Is the fee you charge for the advice and the placing of investments based on the time it takes rather than a percentage of the amount invested?; [2] Do you split your advice between strategic advice and product advice?; [3] Do you provide ongoing advice for a fee instead of charging a

²²⁷ Pirmin Fessler, Martin Schürz, Karin Wagner and Beat Weber, ‘Financial Capability of Austrian Households’ (2007) *Monetary Policy and the Economy* 50
<http://oenb.at/en/img/mop_2007_3_fessler_tcm16-69087.pdf>.

²²⁸ ‘Financial literacy in the spotlight as reaction to the financial crisis’ *Europa* (26 May 2010).

²²⁹ However, regulatory reforms in Australia will ban commission based fees by financial planners from 1 July 2012, under reforms to be introduced by the Labor government in the Spring 2011 sitting of Commonwealth Parliament. See: Office of the Hon Chris Bowen MP - Minister for Human Services, Minister for Financial Services, Superannuation and Corporate Law ‘The Future of Financial Advice’ (26 April 2010)
<http://ministers.treasury.gov.au/Ministers/ceba/Content/pressreleases/2010/attachments/036/Future_of_Financial_Advice_Information_Pack.pdf> and The Australian Treasury, *The Future of Financial Advice*
<<http://futureofadvice.treasury.gov.au/Content/Content.aspx?doc=home.htm>> as at 17 December 2010.

percentage of the amount invested?; [4] Are you able to provide advice on direct investments or are you limited to managed investments that pay trails and commissions?²³⁰

These questions expose whether advice may be motivated by factors other than the financial interests of the client. As a result, a failure to probe an advisor is a flaw in decision making.

Some consumers do not understand the advice that is given. Respondents to a Canadian survey said that while the advice of an advisor would usually be followed, in particular by 26% who solely based decisions on the advice of an advisor,²³¹ the advice is sometimes difficult to understand and not useful.²³² Most consumers (59%) admitted that their understanding of their most recent financial product purchase does not exceed a basic understanding.²³³ One American study even found that a number of respondents did not know what questions to ask their advisor.²³⁴

2 Consumers may rely too heavily on non-professional sources of information

Some consumers may rely too heavily on non-professional advice. The Financial Services Authority of the UK found that:

When asked for the main source of information that they use, 42% say they relied on product information and/or advice from friends, relatives or sales staff, 21% take no advice at all, and only 21% conduct an active search for the best buy or consult an appropriate professional adviser. 13% buy the product without considering any other options.

²³⁰ Max Newnham, 'Good Financial Advice is Hard to Find' *The Age* (22 October 2010). <http://www.theage.com.au/money/on-the-money/good-financial-advice-is-hard-to-find-20101022-16wio.html>

²³¹ The Strategic Counsel, *A Report to The Joint Standing Committee on Retail Investor Issues: Retail Investor Information Survey* <http://www.osc.gov.on.ca/static/_JSC/jsc_retail-investor-info-survey.pdf>, 21.

²³² Ontario Securities Commission – Joint Standing Committee on Retail Investor Issues, *Report on the Public Consultation on Product Suitability* (2008), <http://www.osc.gov.on.ca/static/_JSC/jsc_20081217_product-suitability-rpt.pdf>.

²³³ The Strategic Counsel, *A Report to The Joint Standing Committee on Retail Investor Issues: Retail Investor Information Survey* (2009) <http://www.osc.gov.on.ca/static/_JSC/jsc_retail-investor-info-survey.pdf>.

²³⁴ Financial Finesse, *Financial Literacy Issues Brief* <<http://www.getfinancialfinesse.org/2009/10/financial-literacy-issues-brief>>.

Similarly, the Monetary Authority of Singapore found that 40% of respondents purchase a financial product when the product is recommended by friends or relatives, and 20% do so when a product is recommended by financial advisors.²³⁵

3 Consumers may not gather or review information

Information is central to making financial decisions, so it needs to be from a reliable source and easily understood.²³⁶ A major part of financial literacy includes collecting information relevant to a financial transaction,²³⁷ but a number of studies show that despite the importance of information gathering for financial decision making, many consumers do not gather or review information.

In the ANZ Survey, people in the lowest quintile of financial literacy tended to rely on community publications and Centrelink for financial advice, as opposed to the more costly choice of the quintile with the highest financial literacy scores. This quintile gained advice from accountants and financial advisors. Even if respondents are given information, just under half of the respondents in one survey reported they *carefully* reviewed the information provided²³⁸ while 35% did not review the information at all.²³⁹ Half of the respondents also conducted their own research, which was considered when

²³⁵ Monetary Authority of Singapore, *National Financial Literacy Survey* (2005).

²³⁶ Sources of information include: financial professionals (accountants, financial planners, tax advisors, other), television, internet, magazines, newspapers, consumer association information, information from banks, information from regulatory bodies, family, friends, colleagues etc. See: ANZ, *The ANZ Survey of Adult Financial Literacy in Australia* (2008) <http://www.anz.com/Documents/AU/Aboutanz/AN_5654_Adult_Fin_Lit_Report_08_Web_Report_full.pdf>.

²³⁷ World Bank, *Financial Literacy Survey Questionnaire* (2008) <http://siteresources.worldbank.org/INTECAREGTOPPRVSECDEV/Resources/RU-WB_Financial_Literacy_Questionnaire.pdf>; ANZ, *The ANZ Survey of Adult Financial Literacy in Australia* (2008) <http://www.anz.com/Documents/AU/Aboutanz/AN_5654_Adult_Fin_Lit_Report_08_Web_Report_full.pdf>; Financial Literacy Foundation, *Australians Understanding Money* (2007) <<http://www.understandingmoney.gov.au/documents/australiansunderstandingmoneyweb.pdf>>.

²³⁸ Ontario Securities Commission – Joint Standing Committee on Retail Investor Issues, *Report on the Public Consultation on Product Suitability* (2008), http://www.osc.gov.on.ca/static/_JSC/jsc_20081217_product-suitability-rpt.pdf, 23.

²³⁹ *Ibid*, 23.

making a decision. Those reporting higher financial knowledge gained information from a prospectus, financial advice and newspapers.²⁴⁰

As a result consumers exhibit significant weakness in collecting and reviewing information about financial products, including obtaining independent financial advice.

II CONCLUSION

Financial literacy surveys reveal a number of flaws in the decision making of consumers.

These flaws include the findings that many consumers may:

- not consider key features of financial products, such as risk and return;
- not read the terms and conditions of products;
- not compare financial products and “shop around”;
- not assess the appropriateness of already owned products, and revise their ownership of these products as circumstances change;
- purchase unnecessary products;
- not consider fees and charges;
- ignore investment objectives;
- be “short sighted”;
- “compartmentalize” money;
- not seek or receive independent financial advice;
- not understand financial advice;
- rely too heavily on non-professional sources of information; and
- not gather or review information relevant to financial products.

Many flaws in consumer behaviour are within the control of consumers. These flaws involve an unwillingness to investigate financial products, or to assess the independence and quality of financial information. Flaws in consumer decision making may also derive

²⁴⁰ Ibid.

from cognitive, behavioural and psychological causes. These causes are discussed in Part D of this research report.

Part D – Social, Economic, Cognitive and Psychological Causes of Suboptimal Financial Behaviour

I INTRODUCTION

Suboptimal financial behaviour has been assumed to be caused by limited understanding and knowledge in rational beings. However, research in behavioural economics and psychology shows that people do not always behave rationally. Suboptimal consumer decisions arise from this tendency in people to act irrationally. Suboptimal consumer decisions also result from social factors, such that rational and irrational judgments result from contextual influences in a person's life.

This part considers behaviour and its link with financial literacy, which will provide a useful backdrop in distinguishing those behaviours that can, in fact, be influenced by rationality and learning. First, it investigates the link between financial literacy and behaviour, to highlight that financial literacy, by itself, is insufficient to result in optimal consumer behaviour.

Second, it examines *irrational* financial behaviour. Irrational and suboptimal financial behaviour and its causes will be analysed in three parts: (1) personal factors that influence behaviour, such as cognitive limitations to financial competence; (2) social factors that influence behaviour and opportunity, such as sociological causes of suboptimal behaviour; and (3) behavioural economics, which explains psychological biases and mental shortcuts that may cause suboptimal behaviour. The discussion of social causes of suboptimal behaviour takes into account economic conditions to explain how such theories and conditions alter human behaviour such that it becomes irrational, inefficient and more costly than necessary. The discussion of the psychological causes of irrational behaviour examines the mental processes (heuristics) and biases which result in information being skewed such that a person's perception is tainted. Such a tainted perception results in suboptimal financial decisions that are irrational, inefficient and more costly than necessary.

II FINANCIAL LITERACY AND BEHAVIOUR

The literature is mixed concerning a link between financial literacy and optimal financial behaviour,²⁴¹ because other factors influence human behaviour and opportunity.

However, a number of studies draw a link between financial literacy and particular forms of behaviour, arguing that financial *knowledge* matters in accumulating wealth, stock market participation,²⁴² greater portfolio diversification,²⁴³ planning for retirement and prudent borrowing behaviour.²⁴⁴

In 2010, the Consumer Financial Education Body of the United Kingdom commissioned a behavioural science research report²⁴⁵ to identify the most ‘*effective drivers*’ for altering financial behaviour, and how to harness those drivers to improve financial capability.

This report identifies the difficulty that economic outcomes can be caused by a number of factors, not just knowledge.

Some commentators overlook the fact that appropriate knowledge cannot always result in appropriate behaviour, because social and psychological forces cause people to act inappropriately and irrationally. Huston explains:

²⁴¹ Sandra Huston, ‘Measuring Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 296, 309; Lauren Willis, ‘Against Financial Literacy Education (2008) 94 *Iowa Law Review* 197; Jonathan Fox, Suzanne Bartholomae and Jinkook Lee, ‘Building the Case for Financial Education’ (2005) 39 *Journal of Consumer Affairs* 195; Annamaria Lusardi, ‘Saving and the Effectiveness of Financial Education’ (PRC Working Paper 2003-14, Wharton Business School, 2003) <<http://rider.wharton.upenn.edu/-prc/PRC/WP/WP2003-14.pdf>>. A recent study shows that ‘the numeracy-wealth relation should not be taken as evidence that increasing financial literacy will increase the wealth of households as they enter into retirement’. See: Alan Gustman, Thomas Steinmeier and Nahid Tabatabai, ‘Financial Knowledge and Financial Literacy at the Household Level’ (Working Paper No 16500, National Bureau of Economics, October 2010) <<http://www.nber.org/papers/w16500>>.

²⁴² See: Chiara Monticone, ‘How Much Does Wealth Matter in the Acquisition of Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 403, 403; Martin van Rooij, Annamaria Lusardi and Rob Alessie, ‘Financial Literacy, Retirement Planning, and Household Wealth’ (Paper presented at the ECB-CFS Conference on Household Finances and Consumption, Frankfurt am Main, Germany, September 4–5 2008).

²⁴³ Luigi Guiso and Tullio Jappelli, ‘Financial Literacy and Portfolio Diversification’ (Working Paper No 212, Centre for Studies in Economics and Finance, January 2009) <<http://www.csef.it/WP/wp212.pdf>>.

²⁴⁴ Annamaria Lusardi, ‘Financial Literacy: An Essential Tool for Informed Consumer Choice?’ (Working Paper No 14084, National Bureau of Economic Research, 2008), 2.

²⁴⁵ Submissions from the public were sought by the CFEB, due by 30 September 2010. See: Consumer Financial Education Body, *Transforming Financial Behaviour: Developing Interventions that Build Financial Capability* (2010).

A financial literacy measure only identifies the human capital required to engage in appropriate financial behavior; it does not ensure this will occur. Thus, educators cannot assume that people with less than optimal financial situations are necessarily financially illiterate.²⁴⁶

This observation by Huston is important, because it reinforces the view that suboptimal financial behaviour is not necessarily caused by financial illiteracy. Even a financially literate person may act irrationally. This irrationality, and its causes, is the subject of this part.

A The behavioural model: rational and irrational models of consumer behaviour

It is often assumed that consumers are rational. That is, it is assumed that consumers will gather information, shop around, consider probabilities and risk and seek out the best value option. A dictionary of psychology explains rational decisions to mean those choices ‘that are in the best interests of the agent who makes them, relative to the information available to the agent at the time of acting’.²⁴⁷ Apart from outcomes, rationality is also displayed by the procedures people pursue when making a decision:

Rationality has little to do with knowing everything, but a lot to do with following good rather than bad procedures in data gathering, hypothesis testing, assessing probabilities, and comparing options.²⁴⁸

Rationality can also be instrumental, such that it is based on utility and therefore the rational choice is what increases utility, or pleasure, wealth, profit, happiness etc.²⁴⁹

Therefore a person behaves rationally when acting in their (1) best interests, (2) while following good procedures to make decisions which (3) maximise utility, or enjoyment.

In relation to finance, therefore, rationality appears to mean the processes that consider economic and financial efficiency as the primary goal. That is, for example, shopping around to find the best value financial product which provides more disposable income to

²⁴⁶ Sandra Huston, ‘Measuring Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 296, 310.

²⁴⁷ Andrew Colman, *A Dictionary of Psychology* (2006).

²⁴⁸ Anna Grandori, ‘A Rational Heuristic Model of Economic Decision Making’ (2010) 22 *Rationality and Society* 477, 479.

²⁴⁹ See: Andrew Colman, *A Dictionary of Psychology* (2006).

enjoy life. An irrational consumer is distinguished by his or her inclination to process information in a “bad” way, by not gathering data, not testing theories and probabilities, and not comparing choices and options.

Beckett, Hewer and Howcroft present a model which attempts to classify consumer behaviour in the purchasing of financial products and services,²⁵⁰ and in so doing they identify four types of consumers. The first type thinks rationally, thereby behaving optimally. The others behave sub-optimally. The importance of this classification is that consumers other than “rational active” consumers are influenced by factors that result in suboptimal decisions caused by mental processing. The model outlines four types of consumer behaviour:

- Rational-active;
- Repeat-passive;
- No purchase; and
- Relational-dependant.

Rational-active consumers are rational. They are defined by confidence with product complexity and certainty with outcomes. They shop around²⁵¹ and make careful decisions based on rational criteria,²⁵² such as price²⁵³ and product features such as the cost of excess for insurance, discounts for not making claims etc. Consumers in this category seek the best value product.

Repeat-passive consumers maintain a repeated pattern of purchasing without seeking alternatives. This pattern of repeated behaviour has been described as “behavioural loyalty”. A heuristic (a mental shortcut used to ease cognitive pressure), such as brand, may guide their behaviour until a better alternative is available.²⁵⁴ Decisions of repeat-passive consumers in a study by Beckett, Hewer and Howcroft were based on factors

²⁵⁰ Antony Beckett, Paul Hewer and Barry Howcroft, ‘An exposition of consumer behaviour in the financial services industry’ (2000) 18 *International Journal of Bank Marketing* 15.

²⁵¹ Ibid, 21.

²⁵² Ibid, 17.

²⁵³ Ibid, 21.

²⁵⁴ Ibid, 17.

such as the convenient location of the bank branch,²⁵⁵ the advice of friends or family, or that one's family had banked with a particular institution. Some rational choices concern interest rates. However, an interesting point is that even if circumstances change such that the bank is no longer the most convenient, or no longer offering the best interest rate, the consumer continues to remain with that bank.²⁵⁶ A number of reasons exist for this irrational passivity: (1) consumers are motivated by convenience and suffer from inertia due to the effort of changing providers; (2) consumers do not perceive much difference between providers without research; and (3) consumers anticipate high costs in changing providers. Providers are able to "lock in" consumers by increasing the cost and inconvenience of change.²⁵⁷ People showed a willingness to change provider based on customer service issues, or when they encountered a problem. Change may also occur where consumers are forced to become more involved with the management of their financial products, and:

... increased competition and consumer willingness to use new delivery channels will reduce switching costs and erode inertia, making it increasingly difficult to retain consumers in the repeat-passive quadrant.²⁵⁸

No purchase consumers, as the name suggests, do not purchase products due to limited exposure to the product or limited confidence with the product: 'Individuals who leave significant sums of money on deposit rather than purchase financial services that could generate greater returns are an example of this behaviour'.²⁵⁹

Relational-dependant consumers are involved in the market, but lack control due to the complexity of products and uncertainty which reduces their confidence. These consumers seek advice from banks or third parties, 'to reduce uncertainty and structure their pattern of purchases'.²⁶⁰ The consumer is neither active or passive, but "dependant". This dependence stems from an inability to understand complex products, and accordingly

²⁵⁵ Ibid, 19.

²⁵⁶ Ibid, 19.

²⁵⁷ Ibid, 20.

²⁵⁸ Ibid, 20, 23.

²⁵⁹ Ibid, 18.

²⁶⁰ Ibid, 18.

advice is sought from an advisor with perceived expertise in the area of complexity.²⁶¹ With this dependence comes trust.²⁶² Relational-dependant consumers may not be viewed as irrational where a complex product requires advice. However, a pattern of dependence which results in information not being critiqued or which does not result in independent information being gathered can result in suboptimal outcomes. Such outcomes may be caused by an irrational reliance on an advisor, or anxiety about ones own ability to deal with financial products. This is distinct from rational reliance on an advisor (who may need to explain a complex financial product, for example).

Repeat-passive, no purchase and relational-dependant consumers do not behave in ways that are considered optimal. A number of reasons exist for these different models of consumer behaviour, including cognitive reasons, social reasons, and psychological reasons.

To understand these reasons, it is useful to link the suboptimal consumer behaviour investigated in Parts A and C of this report, with cognitive, social and psychological causes. Much of the literature assumes that suboptimal consumer behaviour results from financial illiteracy and lack of financial understanding, but this part shows that the behaviours identified can have additional causes. The suboptimal consumer behaviour identified in the financial literacy surveys and the literature include:

- Minimal saving, particular for the long term;
- Not budgeting;
- Not planning ahead, specifically for retirement;
- Incurring unnecessary debt;
- Incurring unnecessary fees, such as credit card fees for late repayments;
- Inertia in financial markets;
- Choosing inappropriate financial products;
- Lack of confidence;
- Not considering the key features of financial products;

²⁶¹ Ibid, 21-22.

²⁶² Ibid, 22.

- Not reading the terms and conditions of products;
- Not undertaking comparison shopping;
- Not assessing the appropriateness of already owned products;
- Not considering fees and charges;
- Ignoring investment objectives;
- Short-sightedness;
- “Compartmentalization” of money;
- Not receiving or seeking independent advice;
- Not seeking better instructions or advice when information is not understood;
- Relying too heavily on non-professional sources of information;
- Not gathering or reviewing information;
- Not buying insurance when needed.

The table in the appendix to this part (“Appendix to Part D”) links these behaviours with a number of causes, which can be alternative or in addition to financial illiteracy. The table links these behaviours with social, economic, cognitive and psychological causes. It also provides examples of the internal (psychological and cognitive) and external (social and economic) causes of the suboptimal behaviours mentioned.

Internal and external causes of suboptimal behaviours can stand alone, or influence one another. Low income can cause people to save less, or fail to plan for retirement. It can also lead to poverty, causing a lack of exposure to financial products and therefore a lack of familiarity with those products. Particular people can also be prone to taking mental shortcuts by avoiding complex information. If an insurance contract is too detailed, a person may not be inclined to read it. However, a wealthy person can gain advice about that contract from a professional who is paid to read contracts. This shows asymmetry in the market between people who have the resources to obtain professional advice about insurance contracts, and those who do not. A person without those resources can choose to read the contract, gain low cost advice, or not read the contract. A complex financial product can result in a person feeling overwhelmed and overloaded with information despite their level of intelligence. That said, a person with high cognitive function may

understand the contract much easier than a person with low cognitive function and therefore the first person may be more inclined to read the contract. These circumstances may result in biases, such as remaining with the status quo or with what is familiar. Therefore, a person may not read an insurance contract, or not understand it, for a number of reasons. Financial illiteracy may be only one of those reasons.

The discussion below explains in more detail the external and internal causes of suboptimal behaviour.

B An introduction to social and psychological influences on decision making: skewing “predicted behaviours”

Cognitive and mental processes influence behavior²⁶³ while social factors influence behaviour and opportunities. Opportunities may cause particular forms of behaviour, or particular mental responses. A number of factors influence decision making, including social, economic, family, religious, psychological, cognitive and other factors.

One commentator identifies five elements relating to decisions in the financial markets, and only one of those elements relates to knowledge and skills:

... decisions made in the financial services markets are made up of five elements; external events, socioeconomic background, personal characteristics, skills levels and choices of information.²⁶⁴

Huston states:

Other influences (such as behavioral/cognitive biases, self-control problems, family, peer, economic, community and institutional) can affect financial behaviors and financial well-being. A person who is financially literate (i.e., has the knowledge and the ability to apply the knowledge)

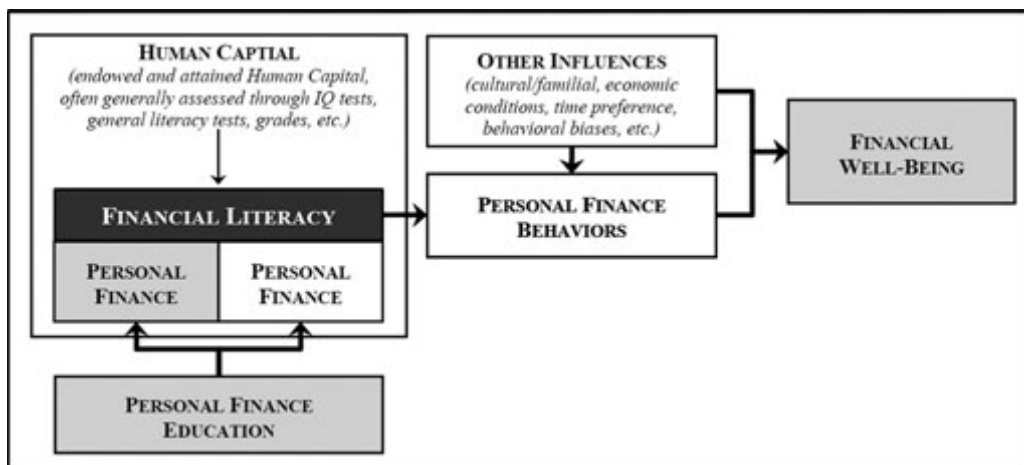
²⁶³ Lauren Willis, ‘Against Financial Literacy Education (2008) 94 *Iowa Law Review* 197.

²⁶⁴ S Marcolin and A Abraham, ‘Financial Literacy Research: Current Literature and Future Opportunities’, (Proceedings of the 3rd International Conference on Contemporary Business Conference Proceedings, Leura NSW, 21-22 September 2006). Also see: Consumer and Financial Literacy Taskforce, *The Consumer* <<http://cfltaskforce.treasury.gov.au/content/download/Download/DiscussionPaper/html/06Chapter2.asp>> as at 10 December 2010.

may not exhibit predicted behaviors or increases in financial well-being because of these other influences.²⁶⁵

A conference paper presented to the 18th Annual Colloquium of Superannuation Researchers made use of a matrix of factors that influence financial literacy and its relation to investment choice. The paper focused on superannuation. The matrix of factors used by the authors includes demographic, social, and contextual factors²⁶⁶ as well as risk preferences.²⁶⁷ Figure 5 below shows a matrix of considerations connected with financial literacy, including knowledge, education, behaviour and financial well-being.

Figure 5: Possible Causes of Financial Behaviour



Source: Natalie Gallery, Cameron Newton and Chrisann Palm, ‘A Framework for assessing financial literacy and superannuation investment choice decisions’ (Presented at the 18th Annual Colloquium of Superannuation Researchers, UNSW, Sydney, Australia, 12-13 July 2010).

A number of factors influence financial decision making, together with education and financial literacy. Cognitive ability and intelligence assists the development of learned behaviours and provides a natural ability to calculate efficiently and judge matters. Social factors lead to greater opportunities, exposure and experience in finance and particular networks, while also influencing collective behaviour such that the individual is influenced by the people around him or her. Psychological heuristics and biases cause

²⁶⁵ Sandra Huston, ‘Measuring Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 296, 307-8.

²⁶⁶ Natalie Gallery, Cameron Newton and Chrisann Palm, ‘A Framework for assessing financial literacy and superannuation investment choice decisions’ (Presented at the 18th Annual Colloquium of Superannuation Researchers, UNSW, Sydney, Australia, 12-13 July 2010).

²⁶⁷ *Ibid*, 17.

people to process information in a tainted fashion, skewing their ability to judge information rationally. Therefore, along with literacy and education, cognitive, social and psychological influences cause people to behave in particular ways when dealing with financial matters.

III PERSONAL FACTORS INFLUENCING BEHAVIOUR: INTELLIGENCE AND COGNITIVE ABILITY

Quite distinct from psychological flaws in human processes is cognitive ability and intelligence, which plays a key role in human functioning and the ability to process information. Important factors that contribute to human choices include the information to which a person is exposed, and, his or her ‘*ability to process that information*’.²⁶⁸ This includes the *ability* to deal with the many aspects of the financial markets.²⁶⁹ A distinction has been drawn between broad financial literacy and ‘more narrow measures of cognitive ability’, including numeracy. For example, as Banks summarises:

... financial knowledge or literacy could usefully be thought of as the output of a human-capital production function with the inputs being: raw cognitive abilities such as numeracy, knowledge and experience of financial products and the effort put into financial decision making.²⁷⁰

A link has been established between cognitive ability and good financial behaviour.²⁷¹ Smith, McArdle and Willis found that the strong cognitive ability of people within a

²⁶⁸ James Banks, Cormac O’Dea and Zoe Oldfield, ‘Cognitive Function, Numeracy and retirement Saving Trajectories’ (2010) 120 *The Economic Journal* 381, 407.

²⁶⁹ For example, cognitive ability has been significantly and positively linked to financial literacy, although, many other factors were as well including gender, parents’ education and investment experience. See: Brenda Cude, ‘Financial Literacy 501’ (2010) 44 *The Journal of Consumer Affairs* 271. Also see: Delavande Adeline, Susann Rohwedder and Robert Willis, ‘Preparation for Retirement, Financial Literacy and Cognitive Resources’ (Working Paper No 2008–190, Ann Arbor: Michigan Retirement Research Center, University of Michigan, 2008).

²⁷⁰ James Banks, ‘Cognitive Function, Financial Literacy and Financial Outcomes at Older Ages: Introduction’ (2010) 120 *The Economic Journal* 357, 358.

²⁷¹ Shawn Cole, Thomas Sampson and Bilal Zia, ‘Prices or Knowledge? What Drives Demand for Financial Services in Emerging Markets’ (2011) *The Journal of Finance* (forthcoming) <http://www.afajof.org/journal/forth_abstract.asp?ref=658>; Shawn Cole and Gauri Kartini Shastry, ‘Is high school the right time to teach self-control’ (June, 2010) <<http://www.wellesley.edu/Economics/gshastry/cole-shastry-math.pdf>>.

household has significant positive effects on the financial outcomes of the household,²⁷² and in particular a strong association was established between cognitive ability, household wealth and portfolio holdings.²⁷³ Numeracy was, by far, the most important factor.²⁷⁴ Banks, O’Dea and Oldfield found an extremely strong correlation between numeracy and financial wealth.²⁷⁵ The study sought to investigate the relationship between numeracy and outcomes in retirement, and found that wealth appeared to be the only factor that strongly correlated with numeracy.²⁷⁶

Cognitive ability formed an important part of a financial literacy study by the Reserve Bank of Atlanta, which used questions from Banks and Oldfield²⁷⁷ and a verbal IQ measure to assess cognitive ability.²⁷⁸ The survey found that people with higher numerical ability tend to display optimal financial behaviour, such as making mortgage repayments consistently and on time.²⁷⁹ The Jump\$Start Coalition’s 2008 survey found a link between SAT (formerly known as the Scholastic Aptitude Test) scores and financial literacy, indicating that intelligence levels and a personality geared towards doing well on such tests can be the cause of good financial behaviour, financial literacy and numerical ability.²⁸⁰ SAT tests are standardized tests used for admission into colleges and universities in the United States, and test critical reading, mathematics and writing ability. These findings may indicate that optimal financial decisions require specific cognitive abilities and skills:

²⁷² See: James Smith, John McArdle and Robert Willis, ‘Financial Decision Making and Cognition in a Family Context’ (2010) 120 *The Economic Journal* 363, 378.

²⁷³ James Banks, ‘Cognitive Function, Financial Literacy and Financial Outcomes at Older Ages: Introduction’ (2010) 120 *The Economic Journal* 357, 360 citing James Smith, John McArdle and Robert Willis, ‘Financial Decision Making and Cognition in a Family Context’ (2010) 120 *The Economic Journal* 363.

²⁷⁴ *Ibid*, 360.

²⁷⁵ James Banks, Cormac O’Dea and Zoe Oldfield, ‘Cognitive Function, Numeracy and Retirement Saving Trajectories’ (2010) 120 *The Economic Journal* 381, 393.

²⁷⁶ *Ibid*, 407.

²⁷⁷ James Banks and Zoe Oldfield, ‘Understanding Pensions: Cognitive Function, Numerical Ability and Retirement Saving’ (2007) 28 *Fiscal Studies* 143.

²⁷⁸ Kristopher Gerardi, Lorenz Goette and Stephan Meier, ‘Financial Literacy and Subprime Mortgage Delinquency: Evidence from a Survey Matched to Administrative Data’ (Working Paper No 2010/10, Federal Reserve Bank of Atlanta, 2010), 25.

²⁷⁹ *Ibid*, 22.

²⁸⁰ Jump\$Start Coalition, *Survey of the Financial Literacy of Young American Adults* (2008).

One potential explanation is that high levels of very specific cognitive abilities may be a prerequisite for making optimal financial choices. For instance, in choosing an investment portfolio, an investor must synthesize a wide range of information concerning economic conditions and the past performance of various assets, accounting for transactions costs, asset volatility, and covariance among asset returns. This task requires memory, computational ability, and financial sophistication. Cognitive limitations might also lead consumers to make suboptimal credit decisions, perhaps because they overestimate their ability to repay loans or fail to translate monthly payment rates into annualized interest rates ... In general, there is now growing evidence that cognitive ability is an important predictor of financial outcomes.²⁸¹

It is no surprise, then, that higher scores in mathematics and other cognitive measures are linked with the ability to make fewer financial mistakes.²⁸² Huston also supports the belief that intelligence and cognitive ability are a leading influence on financial literacy:

The level of overall *endowed* and *attained* [emphasis added] human capital influences a person's financial literacy. For example, if an individual struggles with arithmetic skills, this will certainly impact his/her financial literacy.²⁸³

Therefore, the influence of “endowed” human capital reflects what is meant by cognitive ability and intelligence, which is put to practice and which provides the foundation for attaining more refined levels of human capital. Cole and Fernando also refer to cognitive ability as a cause of sound financial judgment:

It is not always clear what financial literacy measures. Financial literacy test scores, for example, are highly correlated with math test scores, suggesting that financial literacy tests may partly measure an *innate or acquired* ability to solve problems in general. If this is indeed the case, then *teaching financial literacy may have limited effect* [emphasis added]: the more fundamental skills of addition, multiplication, and division may matter more.²⁸⁴

²⁸¹ Sumit Agarwal and Bhashkar Mazumder, ‘Cognitive Abilities and Household Financial Decision Making’ (Working Paper No 2010-16, Federal Reserve Bank of Chicago, 2010).

²⁸² *Ibid.*, 4.

²⁸³ Sandra Huston, ‘Measuring Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 296.

²⁸⁴ Shawn Cole and Nilesh Fernando, ‘Assessing the Importance of Financial Literacy’ (2008) 9 *Finance for the Poor* 1 <<http://www.adb.org/Documents/Periodicals/Microfinance/finance-200803.pdf>>.

The mathematics test scores used by Cole and Fernando reflect innate or acquired ability to solve problems, and this ability is acquired by developing arithmetic skills through practice and education. When considering this conclusion, and the data that shows SAT scores correlate with higher family incomes,²⁸⁵ innate cognitive ability may be a less significant cause of behaviour than education and skill development. No doubt an innate ability to solve problems is an example of natural human intelligence. However, people are socialized and educated from a young age. Therefore, the “acquired” ability discussed in the literature concerning cognitive ability and financial behaviour is contingent on social circumstances, such that the environmental stimuli to which a child is exposed (teachers, parents, role models, advertising etc) is the result of social factors. This argument is further strengthened by the finding that the aggregate mean SAT score for people from households earning less than US\$20,000 was 1310, compared with a score of 1715 by people from households earning over US\$200,000. That is a difference of 405 points.²⁸⁶ This evidence supports the argument that acquired ability is contingent on social factors because a clear link exists between household earnings and SAT scores. In particular, it shows that SAT scores increase with higher household income which provides more opportunities for children to develop skills and exposure to social networks.

It is appropriate to now consider the social factors that influence financial behaviour.

These social factors can diminish or enhance the ability to:

- *acquire* proficiency (either cognitive, acquired intellect or knowledge); and therefore
- *understand* financial terms and concepts; and
- *gain access* to financial opportunities.

Whether these abilities are enhanced or diminished depends on social factors.

²⁸⁵ DomeSAT, *SAT Test Demographics by Income and Ethnicity* <
<http://www.domesatreview.com/content/sat-test-demographics-income-and-ethnicity>>.

²⁸⁶ Ibid.

IV SOCIAL FACTORS INFLUENCING BEHAVIOUR AND OPPORTUNITIES

Investment and consumer behaviour is influenced by social factors.²⁸⁷ These social factors include: (1) Socio-demographics; (2) complex markets and financial products; and (3) culture. Socio-demographics are used as a proxy for other variables, which explain in greater detail why people who belong to certain socio-demographics engage in suboptimal behaviour. These variables include: (1) employment level; (2) employment status; (3) earning capacity; and (4) household and personal wealth. These four variables are significant because they lead to particular experiences and exposures, which can influence financial behaviour negatively or positively. Socio-demographics such as wealth and income determine the social networks to which a person belongs, and therefore all these social factors are relevant in financial behaviour.

A Socio-demographics

Many financial literacy surveys and studies indicate a link between lack of financial literacy, however measured, and particular socio demographics.²⁸⁸ For example, research has linked low levels of financial literacy with low socio-economic geographic areas.²⁸⁹ One study focuses on financial inclusion in Australia, linking poor financial behaviour with particular social attributes such as poverty and disability.²⁹⁰ The socio-demographics which score poorly in financial literacy tests include:

- Women;²⁹¹

²⁸⁷ Kent Baker and Hohn Nofsinger, 'Psychological Biases of Investors' (2002) 11 *Financial Services Review* 97, 99.

²⁸⁸ See for example: ANZ, *The ANZ Survey of Adult Financial Literacy in Australia* (2008) <http://www.anz.com/Documents/AU/Aboutanz/AN_5654_Adult_Fin_Lit_Report_08_Web_Report_full.pdf>; Chiara Monticone, 'How Much Does Wealth Matter in the Acquisition of Financial Literacy', (2010) 44 *The Journal of Consumer Affairs* 403; Wandu Bruine de Bruin, Wilbert Vanderklaauw, Julie Downs, Baruch Fishhoff, Giorgio Topa and Oliver Armantier, 'Expectations of Inflation: The Role of Demographic Variables, Expectation Formation, and Financial Literacy' (2010) 44 *The Journal of Consumer Affairs* 381; Luigi Guiso and Tullio Jappelli, 'Financial Literacy and Portfolio Diversification' (Working Paper No ECO 2008/31, European University Institute, 2008); Andrew Worthington, 'Predicting Financial Literacy in Australia' (2006) 15 *Financial Services Review* 59.

²⁸⁹ Andrew Worthington, 'Predicting Financial Literacy in Australia' (2006) 15 *Financial Services Review* 59, 66.

²⁹⁰ Zuleika Arashiro, 'Financial Inclusion in Australia' (Working Paper, Brotherhood of St Laurence, August 2010) <http://www.bsl.org.au/pdfs/Arashiro_Financial_inclusion_transformative_policy_2010.pdf>.

²⁹¹ See: ANZ, *The ANZ Survey of Adult Financial Literacy in Australia* (2008) <http://www.anz.com/Documents/AU/Aboutanz/AN_5654_Adult_Fin_Lit_Report_08_Web_Report_full.pdf>; Financial Literacy Foundation, *Australians Understanding Money* (2007)

- Young people;²⁹²
- People experiencing unemployment;
- People who are not working such as retirees and students;²⁹³
- The elderly;²⁹⁴
- People with low incomes;
- People from disadvantaged areas;²⁹⁵
- People with no tertiary education;²⁹⁶
- People from families with low financial sophistication and participation;²⁹⁷
- Single parent households;
- People who are renting and neither own a home outright or are buying a home;
- Immigrants; and
- People from social and ethnic minorities²⁹⁸ including those with less developed English proficiency.²⁹⁹

<<http://www.understandingmoney.gov.au/documents/australiansunderstandingmoneyweb.pdf>>; Wandl Bruine de Bruin, Wilbert Vanderklaauw, Julie Downs, Baruch Fischhoff, Giorgio Topa and Oliver Armantier, 'Expectations of Inflation: The Role of Demographic Variables, Expectation Formation, and Financial Literacy' (2010) 44 *The Journal of Consumer Affairs* 381; Financial Services Authority, *Levels of Financial Capability in the UK* (2006) <<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>; The Scottish Government, *The 2009 Scottish Household Survey: Finance* (2009) <<http://www.scotland.gov.uk/Publications/2010/08/25092046/7>>; Annamaria Lusardi and Olivia Mitchell, 'Planning and Financial Literacy: How Do Women Fare?' (Working Paper No 13750, National Bureau of Economic Research, 2008) <<http://www.nber.org/papers/w13750>>. However, one study found no link between sex and financial literacy. See: Judy Tennant, Jill Wright and Janet Jackson, 'Financial Hardship and Financial Literacy: A Case Study from the Gippsland Region' [2009] *The Finsia Journal of Applied Finance* 10.

²⁹² See: Annamaria Lusardi, Olivia Mitchell, Vilsa Curto, 'Financial Literacy Among the Young: Evidence and Implications for Consumer Policy', (Working Paper No 2009-09, Pension Research Council, 2009).

²⁹³ Andrew Worthington, 'Predicting Financial Literacy in Australia' (2006) 15 *Financial Services Review* 59, 75.

²⁹⁴ See: Annamaria Lusardi, Olivia Mitchell, Vilsa Curto, 'Financial Literacy and Financial Sophistication Among Older Americans' (Working Paper No 15469, National Bureau of Economic Research, 2009).

²⁹⁵ In contrast, those with high incomes and those from the top percentage of areas considered to be most privileged scored above the means score. See: ANZ, *The ANZ Survey of Adult Financial Literacy in Australia* (2008)

<http://www.anz.com/Documents/AU/Aboutanz/AN_5654_Adult_Fin_Lit_Report_08_Web_Report_full.pdf>.

²⁹⁶ Farm workers, and people whose highest level of education is Year 10 or lower, or year 12 and TAFE or technical college tend to show low levels of financial literacy. See: ANZ, *The ANZ Survey of Adult Financial Literacy in Australia* (2008)

<http://www.anz.com/Documents/AU/Aboutanz/AN_5654_Adult_Fin_Lit_Report_08_Web_Report_full.pdf>; Andrew Worthington, 'Predicting Financial Literacy in Australia' (2006) 15 *Financial Services Review* 59, 75.

²⁹⁷ See: Annamaria Lusardi, Olivia Mitchell, Vilsa Curto, 'Financial Literacy Among the Young: Evidence and Implications for Consumer Policy', (Working Paper No 2009-09, Pension Research Council, 2009).

Identifying the socio-demographics which tend to score poorly in financial literacy tests is a useful way to identify the possible social causes of poor financial literacy and suboptimal financial behaviour. This is achieved through identifying commonalities among the socio-demographics. The commonalities include a social position that results in:

- Lack of financial experience; and
- Lack of skills in numeracy and literacy.

The main commonality is that the individuals within certain socio-demographics are financially and socially disadvantaged. This results in people having limited exposure to finance and not being in a position to pursue education, and thus a cycle of disadvantage is evident.

Linking financial literacy levels and financial behavioural patterns with particular socio-demographic groups is important, because it elucidates the impact of particular traits on literacy and behaviour. For example, a young person may be inexperienced in specific transactions such as investing in shares, leading to less knowledge about market volatility and higher sensitivity to market fluctuations which causes inertia. The young person may score poorly on a financial literacy measure that deals with investing in shares, but in reality the person has no need for such literacy. Other people, such as middle aged people, may need a particular knowledge base and experience to achieve optimal financial results. Factors such as lack of income or wealth may restrict their ability to gain valuable market experience, and the knowledge and skills that comes with that experience. Other traits are cultural, such that younger people have a culture that is more

²⁹⁸ In Australia this includes people from Aboriginal and Torres Strait Islander background, although given a sample of only 54, these results should be considered with caution. See: ANZ, *The ANZ Survey of Adult Financial Literacy in Australia* (2008) <http://www.anz.com/Documents/AU/Aboutanz/AN_5654_Adult_Fin_Lit_Report_08_Web_Report_full.pdf>.

²⁹⁹ These people may also be more prone to fraudulent schemes and to seek financial products from alternative, less traditional, sources such as pawn brokers or payday lenders. See: United States Government Accountability Office, *Factors Affecting the Financial Literacy of Individuals with Limited English Proficiency* (GAO 10-158; May 2010).

likely to utilize credit than older generations.³⁰⁰ All these social factors are relevant to consumer behaviour.

Demographic and socioeconomic groups which tend to score higher on financial literacy tests are:³⁰¹

- Men;
- Middle aged people;
- Professionals;
- Business owners;
- Small business and farm owners;
- Skilled and semiskilled tradespeople;
- University educated people;
- Higher income earners
- People with higher levels of savings; and
- People with mortgage debt.³⁰²

One evident commonality among these groups is higher social position. This higher social position corresponds with greater wealth and stronger social capital or social networks, assisting with career progression and performance in formal education. This likely leads to more exposure to the experiences and information which strengthens the skills and knowledge defined as financial literacy. Therefore, social position is a key determinant of financial literacy, and also financial behaviour.

³⁰⁰ Kevin Davis, 'Increasing Household Financial Risk' (2007) 26 *Dialogue* 19, 28.

³⁰¹ ANZ, *The ANZ Survey of Adult Financial Literacy in Australia* (2008) <http://www.anz.com/Documents/AU/Aboutanz/AN_5654_Adult_Fin_Lit_Report_08_Web_Report_full.pdf>; Investor Education Foundation, *Financial Capability in the United States National Survey* (2009).

³⁰² Andrew Worthington, 'Predicting financial literacy in Australia' (2006) 15 *Financial Services Review* 59, 75.

1 *Employment level and status*

Employment results in income, the development of skills, and the maintenance of a social network. It is important to consider the value of employment to financial literacy and financial behaviour, particularly among people who are:

- Unemployed, but looking for work;
- Students, who are not working;
- Not working due to being in home duties;
- Retired; and
- Not working due to another reason, such as illness or disability.³⁰³

Worthington argues that being out of work results in lack of exposure to financial transactions and experiences.

Possible reasons for differences in financial literacy for non-working respondents include lack of exposure to financial transactions such as pay slips and superannuation statements, simpler sources of income, less exposure to work-related literacy campaigns, and fewer synergies between work-related and personal literacy.³⁰⁴

The particular skills, social networks and level of income gained from employment depend on employment level. The ANZ Study produced a mean score of 83.1. Those groups scoring below this mean score included blue collar workers. University graduates and white collar workers scored above the mean score. Lack of exposure by some blue collar workers to relevant experiences, such as workplace skills like mathematics and economics, is one reason for this difference in scoring.³⁰⁵

Employment level can therefore expose a person to particular forms of financial decision-making and transactions. Employment level can be separated into the following categories:

- Professional (business);

³⁰³ Ibid, 66.

³⁰⁴ Ibid, 66.

³⁰⁵ See, for example: Kathleen Byrne, 'How Do Consumers Evaluate Risk in Financial Products?' (2005) 10 *Journal of Financial Services Marketing* 21, 32.

- Professional (other);
- Semi professional;
- Small business owner;
- Retail and sales;
- Skilled trades;
- Semi-skilled trades (including self employed tradespeople and employed tradespeople); and
- unskilled labour.

There is a strong link in the literature between unemployment, low income and deteriorating well being.³⁰⁶ Significant causes of financial exclusion in the UK included, among other things, unemployment and lack of personal and household income.³⁰⁷

2 Earning capacity

High income provides greater levels of disposable income which can be allocated to saving, investing and other optimal financial activities. Financial hardship has a number of causes other than financial illiteracy, such as low income or unemployment.³⁰⁸

Bankruptcy is the ultimate reflection of financial hardship, but its cause may not be solely suboptimal behaviour. Linfield found that low income earners are the most likely to declare bankruptcy in the United States. The average American who declares bankruptcy is white, and therefore not part of an ethnic or racial minority, married, employed, middle aged between 35 and 44 years of age, has finished high school and some tertiary education, *but* earns no more than \$30,000 per year. Supporting the view that wealth creates the foundation for good financial outcomes, major reasons for bankruptcy included overextending on credit and an inability to deal with loss of employment or

³⁰⁶ Sarah Brown, Karl Taylor and Stephen Price, 'Debt and Distress: Evaluating the Psychological Cost of Credit' (2005) 26 *Journal of Economic Psychology*.

³⁰⁷ James Devlin, 'A Detailed Study of Financial Exclusion in the UK' (2005) 28 *Journal of Consumer Policy* 75.

³⁰⁸ Judy Tennant, Jill Wright and Janet Jackson, 'Financial Hardship and Financial Literacy: A Case Study from the Gippsland Region' [2009] *The Finsa Journal of Applied Finance*.

illness, injury or unexpected expenses.³⁰⁹ Bankrupts in the United States, on average, are unable to save and repay creditors due to limited income, or income having come to a halt due to unforeseen circumstances.

The *National Foundation for Credit Counseling 2010 Financial Literacy Survey*³¹⁰ revealed that half of those who saved more indicated that this was due to increased earnings. Kuzina points out that particular behaviour, perceived to be inertia caused by lack of financial sophistication, can in fact be due to risk aversion brought about by external economic factors such as low income.³¹¹ It has been proposed that wealthier people are more risk tolerant, and accordingly invest a higher percentage of wealth in risky assets.³¹²

3 Wealth

Wealth increases exposure to finance and this exposure enhances financial knowledge and skills gained from experience. Monticone shows that ‘households endowed with larger financial assets are more likely to invest in financial knowledge’. She states:

This validates the insights of previous studies by showing that household wealth affects financial knowledge even after removing wealth endogeneity (Bernheim 1998; Delavande, Rohwedder, and Willis 2008; Peress 2004). Future research should take this into account when analyzing the impact of knowledge on savings and assets accumulation, and more generally when studying the connection between financial knowledge and behavior.³¹³

³⁰⁹ Leslie Linfield, ‘Who Went Bankrupt In 2006? A Demographic Analysis of American Debtors’ (Final Report, Institute of Financial Literacy, 2007).

³¹⁰ National Foundation for Credit Counseling, *The 2010 Consumer Financial Literacy Survey Final Report* (2010)
<<http://www.nfcc.org/NewsRoom/FinancialLiteracy/files2010/2010ConsumerFinancialLiteracySurveyFinalReport.pdf>>.

³¹¹ Olga Kuzina, ‘The Level of Financial Literacy of Russians: Before and During the Crisis of 2008-2009’ (Paper presented at the 30th CIRET Conference, New York, October 2010), 3.

³¹² Joel Peress, ‘Wealth, Information Acquisition, and Portfolio Choice’ (2004) 17 *Review of Financial Studies* 879.

³¹³ Chiara Monticone, ‘How Much Does Wealth Matter in the Acquisition of Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 403, 417.

Financial wealth creates more opportunities and incentives to acquire knowledge. For example, Burnheim suggests that people with greater wealth need greater knowledge to manage their wealth.³¹⁴

Therefore, wealth gives people the opportunity to invest and by having a greater incentive to learn about how best to manage their money, these people invest with better refined skills. For example, it is widely accepted that diversification tends to be undertaken by more wealthy households.³¹⁵ Wealth therefore provides the opportunity to be exposed to financial experience, and it acts as a driver for the acquisition of greater financial skill and knowledge.

4 Experience and exposure

Wealth, employment level, earning capacity and socio-demographic status may lead to financial experience. One key question is: does experience matter? According to the 2001 University Of Michigan Survey Of Consumers, financial experience was cited by respondents as the single most important source of financial knowledge.³¹⁶ Jappelli provides evidence that financial and economic literacy is assisted by experience with finance, by finding that the private accumulation of resources is related to financial literacy.³¹⁷ His review of 55 countries over 1995 to 2008 showed that numeracy and the accumulation of experience in dealing with wealth created better financial behaviours and a greater familiarity with money. His study showed that people living in countries ‘with more generous public pensions (and hence less need to accumulate resources through private saving) demonstrate lower levels of financial literacy other things (including

³¹⁴ Douglas Bernheim, ‘Financial Illiteracy, Education, and Retirement Saving’ in Olivia Mitchell and Sylvester Schieber (eds) *Living with Defined Contribution Pensions* (1998).

³¹⁵ Luigi Guiso and Tullio Jappelli, ‘Financial Literacy and Portfolio Diversification’ (Working Paper 212, Centre for Studies in Economics and Finance, 2009) <<http://www.csef.it/WP/wp212.pdf>>, 18.

³¹⁶ Chiara Monticone, ‘How Much Does Wealth Matter in the Acquisition of Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 403, 404.

³¹⁷ Tullio Jappelli, ‘Economic Literacy: An International Comparison’ (2010) 120 *The Economic Journal* 429.

numeracy) being equal'.³¹⁸ Financial experience is therefore important in shaping financial behavior.³¹⁹

The “U” shaped age profile of financial knowledge, showing a peak at middle age and then a decline, can be explained by greater experience and then a reduction in cognitive ability in later life.³²⁰ Experience is a highly relevant variable, which can be stronger in certain demographics. This experience is sometimes dependent on the stage of one's life cycle, employment experience and exposure to markets and credit, marketing, and a person's level of financial responsibility³²¹ as well as experience with mortgages.³²² Experience not only improves literacy skills, but also knowledge about products, services and consumer rights and responsibilities. For example, Beal and Delpachtra³²³ consider time spent in the workforce as an indicator of financial literacy. Chen and Volpe³²⁴ viewed academic discipline studied by college students as an indicator of financial literacy. This supports the view that experience with business increases financial literacy.

Some of the surveys in the appendix to this research report found that home owners, older people with more life experience, and people who major in commerce subjects at university and who score higher in university entrance examinations tend to have higher than average financial literacy.

³¹⁸ James Banks, 'Cognitive Function, Financial Literacy and Financial Outcomes at Older Ages: Introduction' (2010) 120 *The Economic Journal* 357, 361.

³¹⁹ Tullio Jappelli, 'Economic Literacy: An International Comparison' (2010) 120 *The Economic Journal* 429, 447.

³²⁰ Sumit Agarwal, John Driscoll, Xavier Gabaix and David Laibson 'The Age of Reason: Financial Decisions over the Lifecycle' (2009) *Brookings Papers on Economic Activity* 51.

³²¹ Andrew Worthington, 'Predicting Financial Literacy in Australia', (2006) 15 *Financial Services Review* 59, 66.

³²² Mortgages may serve to improve financial literacy, by improving consumer behaviour, spending and budgeting, as well as increasing familiarity with consumer rights and responsibilities. See: Andrew Worthington, 'Predicting Financial Literacy in Australia' (2006) 15 *Financial Services Review* 59, 68-9.

³²³ DJ Beal and SB Delpachtra, 'Financial Literacy Among Australian University Students' (2003) 22 *Economic Papers* 65.

³²⁴ H Chen and RP Volpe, 'An Analysis of Personal Financial Literacy Among College Students', (1998) 7 *Financial Services Review* 107.

(a) *Social networks*

Exposure to certain social networks can result in optimal consumer decisions, due to having access to information which is inaccessible by people outside these social networks. Baker and Nofsinger refer to a study by Shiller and Pound, in which 156 high income investors were surveyed. The study found that ‘in more than half of the cases, investor interest in a stock resulted from another person mentioning the stock. Since buying the stock, the investor had spoken to, on average, 20 other potential investors about the company’.³²⁵ As a result, the social variables of wealth indirectly influence access to particular social networks which may provide useful information, or biased and misleading information. Baker and Nofsinger write:

People in a peer group tend to develop the same tastes, interests, and desire to live similar lifestyles... The environment of the investor influences the investment decisions. For example, if an investor’s peer group talks frequently about its day to day trading experiences, the investor is more likely to try day trading. If an investor’s peers talk about international stocks, the investor may also tilt his portfolio internationally.³²⁶

Many financial literacy surveys reveal that people rely on the advice of family and friends, over professionals. Laypeople may be subject to biases, and therefore given that a particular social demographic has access to a particular social network, the quality of information provided in those circles differs. For example, a group of wealthy investors has the benefit of professional advice and experience in the markets, whereas a group of low income people do not. As a result, the low income group is more likely to rely on information that has a very poor, or even worse, no rational foundation.

One study, by Duflo and Saez,³²⁷ shows that behaviour may be more heavily influenced by environment than other social influences. It is true that social influences may lead a person to a particular environment, but people of similar social origin and education, and the same career and similar pay, have been shown to differ in investing according to their

³²⁵ Kent Baker and John Nofsinger, ‘Psychological Biases of Investors’ (2002) 11 *Financial Services Review* 97, 109.

³²⁶ *Ibid*, 110.

³²⁷ See: E Duflo and E Saez, ‘Participation and Investment Decisions in a Retirement Plan: The Influence of Colleague’s Choices’ (2002) 85 *Journal of Public Economics* 121.

workplace. The study by Duflo and Saez displayed the effects of peer groups, by showing that among 436 university librarians who work in 11 different buildings on campus, 73% of librarians in one building participated in 401(k) plans (a retirement plan), while in another building only 14% participated in such plans.³²⁸ This study supports the proposition that people are influenced by their environment.

(b) Tipping point and collective behaviour

In 1895, Gustave Le Bon published *The Crowd*, in which he theorized that individual qualities and rationality would be overrun by the collective mind of a crowd or group. This view, coined “contagion”, is described as the ‘spread of behaviours, attitudes and effect through crowds and other types of social aggregations from one member to another’.³²⁹ This observation has been confirmed in a number of sociological studies, giving rise to the theory of tipping point and collective behaviour.

In effect, tipping point and collective behaviour explain the tendency to be influenced by the majority, or to conform with a particular view.³³⁰ This explains why some patterns of financial behaviour are isolated to specific social groups. Wealthier people tend to display better than average financial behaviour and literacy while people with low incomes tend to display poorer than average financial behaviour.

Schmid also addresses the point of a changed context, and human inclination to *imitate*:

If the environment is perceived as new, the consumer must experiment until a new routine emerges. This process is social to a large extent as people imitate others.³³¹

This imitation effect strongly relates to the importance of social networks in decision making, but it particularly exemplifies the psychological inclination to copy the actions

³²⁸ Kent Baker and John Nofsinger, ‘Psychological Biases of Investors’ (2002) 11 *Financial Services Review* 97, 110.

³²⁹ Donselson Forsyth, *Group Dynamics* (2009, 5th ed): Brooks/Cole, California, 514.

³³⁰ See: Malcolm Gladwell, *The Tipping Point: How Little Things Can Make a Big Difference* (2002): Little, Brown Book Group, London.

³³¹ *Ibid*, 42.

and practices of others, which, if turned into a routine, may avoid being reviewed and thus turn into a pattern of inefficiency and unnecessary cost.

The bursting of the “dot com” bubble is an example of social behaviour and the “crowd” effect:

Our analysis suggests that, during the 1998 – 2001 period, Internet investors, unfamiliar with the new investment sector, were influenced by environmental and competitive forces that were not evident in other periods. These forces include a causal chain from the success of early Internet-based technology businesses, to increasing hype or publicity...³³²

Investing in unproven and speculative internet companies in the late 1990s is considered to be a product of market hype stemming from the success of businesses like Amazon.com.³³³ The influence of the “crowd” proved to be powerful, because many investors ignored established rules about business health that applied to “brick and mortar” businesses. Instead, investors were convinced that the same rules could not apply to internet companies.

(c) Psychology of life experience

Social networks, wealth and income result in exposure to particular life experiences, and this exposure moulds the way we approach similar situations after that experience. One study, which focused on the causes of inflation estimates, acts as a useful example of the impact of life experience on the ability to calculate inflation estimates. The results of this study show overestimated, and ‘seemingly unrealistic’, inflation estimates by women,³³⁴ people with low incomes, single people, and those without tertiary education, as well as racial and ethnic minorities.³³⁵ Those reporting higher inflation expectations tended to

³³² Dave Valliere and Rein Peterson, ‘Inflating the Bubble: Examining Dot-Com Investor Behavior’ (2004) 6 *Venture Capital* 1, 18.

³³³ Dave Valliere and Rein Peterson, ‘Inflating the Bubble: Examining Dot-Com Investor Behavior’ (2004) 6 *Venture Capital* 1.

³³⁴ Although, women were found to be less likely to record overestimated inflation rates. See: Wandu Bruine de Bruin, Wilbert Vanderklaauw, Julie Downs, Baruch Fishhoff, Giorgio Topa and Oliver Armantier, ‘Expectations of Inflation: The Role of Demographic Variables, Expectation Formation, and Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 381, 393.

³³⁵ *Ibid*, 382.

have lower financial literacy.³³⁶ The study found that older people tend to have higher expectations whereas young people tend to have lower expectations. This may be the result of life experience and the experience of inflation through consumption, rather than relying on secondary materials. First, when inquiring as to *how* people formed their inflation expectations, psychology of life experience appeared to play a role in overestimated expectations. ‘Psychological theories suggest that larger price changes are usually more salient than smaller ones, and that increasing prices are usually more salient than decreasing or stable ones’.³³⁷ Second, certain characteristics, like low income, can make people more sensitive to price shocks which are driven by economic uncertainty, while those from high socio-economic demographics may have less economic uncertainty.³³⁸ Therefore, exposure to particular experiences is shown to play a key role in developing a better awareness of financial and economic concepts, such as inflation.

5 *Poverty and financial exclusion*

Regardless of financial literacy levels, a particular person may be financially excluded such that literacy cannot be acquired, or even if such literacy is acquired, that person cannot use their knowledge and understanding.

Financial exclusion is reached where a *proportion* of the population have *limited* access to mainstream financial services.³³⁹ The ANZ has noted that 0.8% of the Australian population is “excluded” because they own *no* financial products, compared with 7% in the UK.³⁴⁰ Exclusion also relates to *limited* access. Almost all the socio-demographics discussed in this report which are found to score below the average in financial literacy tests, and exhibit less desirable financial behaviour, have one thing in common: lack of wealth.

³³⁶ Ibid.

³³⁷ Ibid, 383.

³³⁸ Ibid, 383.

³³⁹ James Devlin, ‘A Detailed Study of Financial Exclusion in the UK’ (2005) 28 *Journal of Consumer Policy* 75.

³⁴⁰ ANZ, *Research on Financial Exclusion in Australia* (2004), 38

<<http://www.anz.com/resources/5/1/51dcef804d2fa3169f3dbf766a918285/Financial-Exclusion-Summary-Presentation.pdf?CACHEID=26048e804d2bd4f682369b69785e67b9>>.

The cycle of disadvantage begins with finance being unattainable. This prevents the commencement of a pattern of meaningful financial practices. It is clear that certain financial behaviours have their basis in *affordability* rather than only literacy or understanding. There are studies which consider the use of financial products and services by people with low incomes and those who are considered “poor”.³⁴¹ Lee found that the people considered to be poor were:

- approximately half as likely to hold a checking account or a savings account;
- two thirds less likely to hold a credit card; and
- three quarters less likely to hold a mortgage.³⁴²

As Devlin explains, seven types of exclusion exist in financial products and services:³⁴³

1. *Self exclusion* or voluntary non-use, occurs ‘when certain individuals choose not to use a financial service, despite a need, perhaps due to past refusal, negative word of mouth, confusion, or lack of trust’.³⁴⁴ Self exclusion or voluntary non-use can also be due to cultural or religious reasons;
2. *Access exclusion*, which includes restrictions on access to financial services due to such things as ‘branch closures and unfavourable risk assessments’;³⁴⁵
3. *Condition exclusion*, which causes exclusion due to conditions attached to the offering of products, which may focus on particular individuals;
4. *Price exclusion* occurs where people cannot afford particular products.
5. *Marketing exclusion*, which results from financial firms overlooking certain groups in its marketing activities;
6. *Resource exclusion*, which includes instances where a limited family income prevents a family from saving. This does not reflect lack of understanding or

³⁴¹ J Hogarth and K O’Donnell ‘If You Build It, Will They Come? A Simulation of Financial Product Holdings Among Low-to-Moderate Income Households’ (2000) 23 *Journal of Consumer Policy* 419; Jinkook Lee, ‘The Poor in the Financial Markets: Changes in the Use of Financial Products, Institutions and Services from 1995 to 1998’ (2002) 25 *Journal of Consumer Policy* 203.

³⁴² Jinkook Lee, ‘The Poor in the Financial Markets: Changes in the Use of Financial Products, Institutions and Services from 1995 to 1998’ (2002) 25 *Journal of Consumer Policy* 203, 218.

³⁴³ See: James Devlin, ‘A Detailed Study of Financial Exclusion in the UK’ (2005) 28 *Journal of Consumer Policy* 75, 76-77.

³⁴⁴ James Devlin, ‘A Detailed Study of Financial Exclusion in the UK’ (2005) 28(1) *Journal of Consumer Policy* 75, 77.

³⁴⁵ *Ibid.*

desire, but lack of possibility and opportunity. This has also been called *income exclusion* by the ANZ.³⁴⁶

7. *Geographic exclusion*, which has been recognized by the UK Financial Services Authority³⁴⁷ and the ANZ.³⁴⁸ Particularly because people tend to take advice from those around them, such as family or friends, this creates a cycle of reliance on poor advice which generates financially vulnerable pockets of the community.³⁴⁹

The UK Financial Services Authority has recognized that lack of financial literacy, not understanding financial products and not knowing where to go to purchase these products can cause financial exclusion.³⁵⁰ The ANZ identified “risk factors” in a review of the literature concerning financial exclusion, and found that the following demographics were at risk of being excluded (sometimes, according to the ANZ, without empirical data).³⁵¹

- People experiencing unemployment;
- People with a disability or long term illness;
- People with low income tenancy, particularly people who use public housing;
- People from ethnic minorities, including minorities based on language and culture;
- Single parents;
- Women, which the ANZ claims is “inferred”; and
- Young people and the elderly.

³⁴⁶ ANZ, *Research on Financial Exclusion in Australia* (2004), 38

<<http://www.anz.com/resources/5/1/51dcef804d2fa3169f3dbf766a918285/Financial-Exclusion-Summary-Presentation.pdf?CACHEID=26048e804d2bd4f682369b69785e67b9>>.

³⁴⁷ Financial Services Authority, *In or Out? Financial Exclusion: A Literature and Research Review* (2000) <<http://www.fsa.gov.uk/pubs/consumer-research/crpr03.pdf>>.

³⁴⁸ ANZ, *Research on Financial Exclusion in Australia* (2004), 38

<<http://www.anz.com/resources/5/1/51dcef804d2fa3169f3dbf766a918285/Financial-Exclusion-Summary-Presentation.pdf?CACHEID=26048e804d2bd4f682369b69785e67b9>>.

³⁴⁹ Financial Services Authority, *In or Out? Financial Exclusion: A Literature and Research Review* (2000) <<http://www.fsa.gov.uk/pubs/consumer-research/crpr03.pdf>>, [4.33], 51.

³⁵⁰ *Ibid*, [4.30], 50.

³⁵¹ ANZ, *Research on Financial Exclusion in Australia* (2004), 38

<<http://www.anz.com/resources/5/1/51dcef804d2fa3169f3dbf766a918285/Financial-Exclusion-Summary-Presentation.pdf?CACHEID=26048e804d2bd4f682369b69785e67b9>>, 13.

These groups have also often been identified as having low levels of financial literacy. The Australian Department of Housing, Families, Community Services and Indigenous Affairs lists the following factors relevant to these demographics and which contribute to financial exclusion:³⁵²

- Structural economic factors, which include unemployment, limited investment in disadvantaged communities, insufficient services in particular areas, branch closures of financial institutions, and limited incentive among certain groups to be entrepreneurial;
- Institutional factors, including lack of appropriate products, credit check and history requirements which cannot be met by certain groups, terms and conditions of products such as a minimum amount for an account to be opened which may be beyond the ability of some people to save, discrimination, and lack of support for business development;
- Community factors, defined by the ‘intergenerational transfer of disadvantage’ which is common among indigenous Australians;
- Individual factors, which include lack of education and training, lack of ability with English, long term disability and health problems, poor work skills, interpersonal skills, low self esteem, and unstable personal circumstances and contextual factors that limit a good start in life.

A number of social forces interact to cause financial exclusion, and this can explain why people exhibit poor financial literacy, suboptimal behaviour and inertia in financial markets.

³⁵² Department of Families, Housing, Community Services and Indigenous Affairs, *Community Development Financial Institutions (CDFIs) Scoping Study*
<http://www.fahcsia.gov.au/sa/indigenous/funding/CDFI_pilot/Documents/nature_financial_exclusion.htm
> as at 12 December 2010, Ch 1.

B Market and economic complexity

Complex markets and financial products can leave consumers feeling overwhelmed and confused. One leading cause of financial exclusion, other than wealth, is the use of complicated language in financial products not using “plain English”.³⁵³ Complex markets and overly complex financial products cause inertia.³⁵⁴ In fact, it has been found that as options increase, participation decreases³⁵⁵ due to a drop in motivation and a decreased desire to navigate through the substantial amount of information in the environment.

It is important here to note however that the complexity of the markets may be easy to understand for particular socio-demographics with the appropriate levels of education or experience. A wealthy person with a tertiary education can mitigate market complexity, while a less wealthy person without an education may be a victim of market complexity.

Market complexity may mean that financial education, and accordingly certain forms of financial literacy, are futile. It is true that education can assist in understanding simple financial concepts, but the market may have evolved well beyond this simple level of required knowledge and into the realm of specialist complex financial and economic understanding. This complexity may be necessary or unnecessary, but it exists.

“Dysfunctional” financial products exacerbate the problem. These include saving and loan products flawed in their ability to address user needs’,³⁵⁶ such as unnecessarily complex financial contracts. Along with financial illiteracy, complex markets, complex products and overwhelming product selection cause inertia, default choices and suboptimal consumer decisions. The European Federation of Bankers (EFB) reported that the complexity of financial products and the number of those products are the two leading

³⁵³ Financial Services Authority, *In or Out? Financial Exclusion: A Literature and Research Review* (2000) <<http://www.fsa.gov.uk/pubs/consumer-research/crpr03.pdf>>, [4.34].

³⁵⁴ European Banking Federation <<http://www.ebf-fbe.eu>>.

³⁵⁵ Natalie Gallery, Cameron Newton and Chrisann Palm, ‘A Framework for Assessing Financial Literacy and Superannuation Investment Choice Decisions’ (Presented at the 18th Annual Colloquium of Superannuation Researchers, UNSW, Sydney, Australia, 12-13 July 2010), 19.

³⁵⁶ Geoff Gloster, ‘Facing Up to Dysfunctional Finance Products’ (2009) *The Finsa Journal of Applied Finance*.

causes of poor financial decisions by young people. From an Australian perspective, a research project by ASIC found that:

... some investors did not read formal disclosure documents and those who did read them did not necessarily read or understand all of the material. Barriers to reading disclosure material included complexity, jargon, time required to read and document length³⁵⁷.

It is clear that individuals need greater financial skills to manage increasingly complex financial products.³⁵⁸

Associate Professor Willis outlines factors that affect the behaviour of consumers and concludes that financial decisions are not based on financial literacy alone and accordingly to contribute resources to financial education is a wasted exercise as it lacks empirical support.³⁵⁹ For reasons of efficient division of labour alone, she argues consumers generally should not act as financial experts. Several points can be raised which support her contention. First, the velocity of change in the financial marketplace means that education cannot keep up with such change. Second, the market and its products are becoming increasingly complex, and it is not possible to educate the general population to a standard that would be expected of a financial expert, at least in relation to nonstandardised financial products. Added to this point is that with a growing and complex financial market, the number of products on offer has boomed causing consumers to feel overwhelmed. All these factors relate to a complex market which cannot be tamed by education alone.

Informational asymmetry between sellers and consumers created by the complexity of financial products and the speed with which they change makes the purpose of financial literacy, for Willis, questionable. However, no matter how many changes and updates are made to products, a solid *foundation* in financial literacy can help a consumer decide

³⁵⁷ Australian Securities and Investments Commission (ASIC), *Australian Investors: At A Glance* (Report 121, April 2008).

³⁵⁸ Chiara Monticone, 'How Much Does Wealth Matter in the Acquisition of Financial Literacy?' (2010) 44 *The Journal of Consumer Affairs* 403, 405.

³⁵⁹ Lauren Willis, 'Against Financial Literacy Education (2008) 94 *Iowa Law Review* 197.

whether the product is sound. Financial products are all a combination of foundation principles in economics (ie: interest, risk, shares, credit, etc). While the *specific* details of the product may be a combination of factors, the *factors* themselves are *existing* and *well known* economic and financial principles; all that happens is that these principles are arranged in a new way. Willis does however make a useful point in relation to the market providing an overwhelming number of financial products,³⁶⁰ which contributes to a lack of motivation in *applying* financial knowledge.

1 *Informational, time and skill asymmetry*

A stock broker receives a steady stream of up to date information about shares, has the time to become familiar with that information due to it being his or her work, and due to such work, has a number of skills relevant to the identification of shares which suit a particular investment objective. A person who does not have access to the same information, or who does not have the same time and skill to process that information, cannot achieve the same results as a stock broker. This is known as informational asymmetry.

Information is needed to make an informed decision. Informational asymmetry refers to differences in information known to professionals when compared to layperson investors, and the time lag that reduces the usefulness of information. Yoshiki Yotsuzuka from Waseda University in Japan explains informational asymmetry in terms of “insiders” and “outsiders”,³⁶¹ which produces a simplified image of the concept: particular people may have industry knowledge and others do not, thereby creating asymmetry. That means that once the information reaches the intended recipient, the information is obsolete or much too complex.³⁶² It also means that the person creating the financial product, for example, is aware of factors of which the buyer is not and this leads the buyer to act sub-optimally due to lack of knowledge about those factors. A banker may create a financial product,

³⁶⁰ Ibid, 228-9.

³⁶¹ Yoshiki Yotsuzuka, ‘Complex Financial Products in Japan: Evolution of Structured Products and Regulatory Responses’ (Research Report, Waseda University, November 2010), 8.

³⁶² Lauren Willis, ‘Against Financial Literacy Education’ (2008) 94 *Iowa Law Review* 197.

and during this process of creating become aware of important factors which may impact that product. Given that the buyer cannot be aware of these factors, it may be suboptimal to allow the buyer full control of the product, because the product will be used without this knowledge. Researchers from Princeton University write:

Private information for the seller can be viewed as a restriction of the input distribution known only to the seller. The seller can structure the derivative so that this private information corresponds to “swinging the election”. What is surprising is that a computationally limited buyer may not have any way to distinguish such a tampered derivative from untampered derivatives.³⁶³

This illustrates the point that differences in information result in different outcomes, and therefore expertise and specialist equipment can be needed to make optimal decisions. Therefore, no amount of rationality or education among lay investors can give them the tools to reach the same accuracy as a specialist with the right equipment.

C Culture of consumerism

An important social influence on financial behaviour is culture and technology. In particular, this also includes a culture of short term consumerism³⁶⁴ which reduces the inclination to save and plan for the future. For example, the Commonwealth Financial Literacy Taskforce found that ‘teenagers from Generation Y are more likely to have debt management problems associated with mobile phones than their parents as teenagers who did not have mobile phones or the same opportunities for credit’.³⁶⁵ In a study of the financial behaviour of young women, Wire confirmed the view that easy access to credit has created a culture of increased spending and indebtedness.³⁶⁶ Societal pressures

³⁶³ Sanjeev Arora, Boaz Barak, Markus Brunnermeier and Rong Ge, ‘Computational Complexity and Information Asymmetry in Financial Products’ (Working Paper, Princeton University, October 2009) <<http://www.cs.princeton.edu/~rongge/derivative.pdf>>.

³⁶⁴ See: Wire, *Young Women and Money* (2010), 23 < <http://www.wire.org.au/wp-content/uploads/2010/08/YoungWomenMoneyResearchReport2010.pdf>>.

³⁶⁵ Commonwealth Financial Literacy Taskforce, *The Consumer* < http://cfltaskforce.treasury.gov.au/content/_download/DiscussionPaper/html/06Chapter2.asp> as at 2 February 2011.

³⁶⁶ Wire, *Young Women and Money* (2010), 26 < <http://www.wire.org.au/wp-content/uploads/2010/08/YoungWomenMoneyResearchReport2010.pdf>>.

therefore impact consumerism, and as a result, consumerism influences the amount of disposable income available for saving and investing.

One theory is that the purchase of commodities plays a role in the identity formation of the individual. Zepf concludes that *nowadays* a psychological utility value influences the decision to buy a commodity, whereas previously the instrumental utility function had such influence.³⁶⁷ This means that the practical value of an object is somewhat obscured by marketing which gives it psychological value, and this psychological value is more evident than it was.³⁶⁸ This results in the growing trend of consumption, particularly among some young people. This growth in consumption results in a decline in savings, and such a culture is also a cause of financial instability.

D The social variables: a summary

The behaviour of consumers is influenced by (1) personal factors; and (2) social factors. Personal factors that influence decisions about money include intelligence and cognitive ability. Social factors include an interconnected web of environmental influences on financial behaviour which may result in suboptimal decisions. These social factors include: (1) socio-demographic status and social position; (2) the complexity of the market and financial products; and (3) the modern culture of short term consumerism. Socio-demographics include the following elements which influence consumer decisions: (1) employment level and status; (2) earning capacity; (3) wealth; (4) financial experience and opportunity; and (5) poverty and financial exclusion. The socio-demographic considerations reveal that factors which enhance exposure to financial decision-making, such as wealth, allow for the creation of relevant financial skills, knowledge and networks.

³⁶⁷ Siegfried Zepf, 'Consumerism and Identity: Some Psychoanalytical Considerations' (2010) 19 *International Forum of Psychoanalysis* 144.

³⁶⁸ *Ibid*, 145.

V BEHAVIOURAL ECONOMICS

“Rational” decisions differ with changing contexts, and the way the brain processes that context. Behavioural economics explains irrational behaviour, and the cognitive limitations that result in irrational and suboptimal choices. Mental processing therefore plays an important role in the way people view financial products and manage investments.

Psychological characteristics such as cognitive dysfunction and mental impairment have traditionally been associated with suboptimal behaviour.³⁶⁹ Behavioural economics is not concerned with dysfunction or impairment, but with biases and heuristics (mental shortcuts) used by all people.

These biases and shortcuts in mental processing, not just lack of education, can result in suboptimal decisions³⁷⁰ which go against economic logic.³⁷¹ Financially literate consumers will sometimes behave irrationally, and against informed judgment. In particular, Huston writes that:

Although a financial literacy measure may be used to predict financial behaviors or outcomes, it does not necessarily imply that individuals will behave in a way that many scholars, policymakers or educators would deem optimal. Other characteristics such as impulsiveness, behavioral biases, unusual preferences or external circumstances also contribute to what may appear to be poor financial decision making.³⁷²

An optimal decision is considered “rational”. Behavioural economics attempts to explain and predict irrational behaviour which results in suboptimal decisions. In this sense, “predictably irrational” behaviour is considered to be a product of biases and mental

³⁶⁹ Ronald Andersen, ‘Revisiting the Behavioral Model and Access to Medical Care: Does it Matter?’ (1995) 36 *Journal of Health and Social Behavior* 1, 3-4.

³⁷⁰ See: Daniel Kahneman, ‘Maps of Bounded Rationality: Psychology for Behavioral Economics’ (2003) 93 *The American Economic Review* 1449.

³⁷¹ Johan Vossensteyn, ‘Perceptions of Student Price-Responsiveness: A Behavioural Economics Exploration of the Relationships between Socio-Economic Status, Perceptions of Financial Incentives and Student Choice’ (Thesis, University of Twente, 2005) <http://doc.utwente.nl/50847/>, 70.

³⁷² Sandra Huston, ‘Measuring Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 296, 310.

shortcuts which limit the cognitive processing of all people. Therefore all consumers behave in a predictably irrational way. The behaviour is irrational but also predictable.

Behavioural economics goes against the tide of classic economic theory. Neoclassical economic theory assumes that people behave rationally.³⁷³ If this were true for all people, financially literate consumers *would* behave in a way that many scholars, policy makers and educators would deem optimal. However, people do not behave in this way because people do not behave rationally, and in accordance with neoclassical economic theory. People behave in a predictably irrational way.

Consumers are shown to base financial decisions on factors other than financial product features. For example, people will not always choose the cheapest credit card option even if the only difference is the interest rate.³⁷⁴ The findings of one Swedish survey found that a third of respondents who were bank customers chose their bank randomly, without any “consciousness”.³⁷⁵ Two researchers of the Federal Reserve Bank of Chicago state:

An emerging literature has shown that individuals commonly make financial decisions that would be considered suboptimal according to standard consumer finance theory. For example, individuals accept payday loans with astronomical APRs [annual percentage rates] when other cheaper forms of credit are available ... and consumers with multiple credit card offers fail to optimally choose the right credit card.... More broadly, it is puzzling that less than 30 percent of U.S. households directly participate in equity markets ... and among those who do hold stocks, many have highly concentrated portfolios and trade excessively.³⁷⁶

This suboptimal decision making is irrational not only due to financial illiteracy, but also due to psychological processes that, during the process of decoding information, obscure reality such that important pieces of information are overlooked in the simplification

³⁷³ Yahya Madra and Fikret Adaman, ‘Public Economics after Neoliberalism: A Theoretical-Historical Perspective’ (2010) 17 *The European Journal of the History of Economic Thought* 1079, 1088.

³⁷⁴ See: Sumit Agarwal and Bhashkar Mazumder, ‘Cognitive Abilities and Household Financial Decision Making’ (Working Paper No 2010-16, Federal Reserve Bank of Chicago, 2010).

³⁷⁵ Rita Martenson, ‘Consumer Choice Criteria in Retail Bank Selection’ (1993) 3 *International Journal of Bank Marketing* 64.

³⁷⁶ Sumit Agarwal and Bhashkar Mazumder, ‘Cognitive Abilities and Household Financial Decision Making’ (Working Paper No 2010-16, Federal Reserve Bank of Chicago, 2010).

process. This is the coping mechanism explained by behavioural economics which causes irrationality, whereby the brain simplifies information and processing by using two main methods: (1) biases; and (2) heuristics, or mental “shortcuts”.

A Incentives, anomalies and biases

Biases cause people to behave sub-optimally. Particular biases make people more prone to take a particular action, because a specific act which conforms to their bias is an incentive to act. Incentives can be explained through a number of behavioural economic theories, such that if people are risk averse then a low risk venture acts as an incentive to invest. Similarly, lowering interest rates will give people an incentive to spend more and increase debt, and also reduce savings.³⁷⁷ These predictable responses to incentives are processed by using the following biases:

- (1) loss aversion;³⁷⁸
- (2) reference dependence;³⁷⁹
- (3) hyperbolic discounting;³⁸⁰
- (4) overweighting small probabilities;³⁸¹
- (5) mental accounting;³⁸² and
- (6) prospect theory.

These shortcuts reduce pressure on cognitive functioning, but can also skew rational thinking. This results in suboptimal or irrational choices.

Willis refers to biases in her argument against the usefulness of financial education:

Psychologists and behavioral economists have catalogued a host of “biases” apart from skill or information deficits that can interfere with decisionmaking. These include tendencies to overweight or underweight various considerations when making a decision; “heuristics” that

³⁷⁷ Financial Services Authority, *Financial Capability: A Behavioural Economics Perspective* (2008) <http://www.cfefbuk.org.uk/pdfs/20100713_transforming_financial_behaviour.pdf>, 23.

³⁷⁸ Ibid.

³⁷⁹ Ibid.

³⁸⁰ Ibid.

³⁸¹ Ibid.

³⁸² Ibid.

reduce complex decision tasks “to simpler judgmental operations”; attraction to decisions that superficially appear consistent; coping mechanisms that avoid or limit emotional discomfort during decisionmaking; and visceral drives (hunger, pain, fear) that overwhelm reasoning.³⁸³

Biases in decision making are recognized in behavioural economics, and these biases cause a person to deviate from ‘adaptive decision making’.³⁸⁴ Oehler and Werner identify the following additional examples of biases which cause deviations from rational or adaptive decision making:

- (1) information asymmetry;
- (2) heuristics;
- (3) inconsistent preferences;
- (4) hyperbolic discounting;
- (5) lack of self control;
- (6) postponing decisions;
- (7) ambiguity aversion;
- (8) inertia;
- (9) information overload;
- (10) framing; and
- (11) mental accounting.³⁸⁵

A number of other biases exist which impact financial decision making. These biases include:

- (1) defaults;
- (2) overconfidence;
- (3) time preferences;
- (4) information overload;
- (5) trust and loyalty;
- (6) wants;

³⁸³ Lauren Willis, ‘Against Financial Literacy Education (2008) 94 *Iowa Law Review* 197, 227-8.

³⁸⁴ Andreas Oehler and Christina Werner, ‘Saving for Retirement – A Case for Financial Education in Germany and UK? An Economic Perspective’ (2008) 31 *Journal of Consumer Policy* 253, 256, 257.

³⁸⁵ *Ibid*, 257-8.

- (7) sunk costs;
- (8) experience, learning and reinforcement;
- (9) jealousy and ego;
- (10) confirmatory bias;
- (11) the endowment effect;
- (12) norms, including the spotlight effect;
- (13) salience;
- (14) priming;
- (15) preference reversals;
- (16) affect and emotions;
- (17) commitments; and
- (18) consumer shortsightedness and the “value of zero”.

All these biases in mental processing and decision-making can result in suboptimal consumer decisions. It is useful to consider these biases in terms of categories to which they belong. These broad categories include:

- Bias and risk, which considers the bias towards loss aversion and changes to risk preferences when reward increases;
- Bias and decision making, which considers the mental editing and mental accounting that cause error;
- Bias and time, which considers the way that preferences change over time and the bias towards immediate as opposed to delayed benefits;
- Bias to the self, which considers human ego, overconfidence, limited self control, wants, desires, pride, emotions, habits and routines;
- Bias to the group, which considers the development of relationships and the biases that result from trust and loyalty, experience and socialization within a particular group and the psychological adherence to social norms;
- Bias to the prominent, which considers the psychology of marketing and influence and makes use of the biases that result from framing, salience and priming;
- Bias and limited cognitive ability, which considers information overload and the bias towards default options;

- Bias to property, which includes the bias that results from attaching greater value to personal or owned property through the endowment effect; and
- Bias to pursue a path that has no pecuniary cost.

1 *Bias and risk*

The tendency to accept risk alters as the promise of reward changes. While people tend to be loss averse, willingness to accept risk alters under different circumstances. The loss aversion bias shows that inertia in the markets can be caused by an unwillingness to accept risk, while trading in speculative shares and risky financial behaviour can be explained by the promise of potentially high rewards.

(a) Loss aversion

People show a greater sensitivity to losses than to gains.³⁸⁶ Schmid explains loss aversion as ‘avoidance of regret’,³⁸⁷ and therefore people have a tendency to not take risks. This can explain inertia in the financial markets, and in particular the share market. However, such loss aversion can be lessened by maintaining a lowered consciousness about that risk, such that with infrequent monitoring of risk a person is less likely to feel ‘avoidance of regret’ mechanism take hold psychologically. Thaler, Tversky, Kahneman and Schwartz found support for the proposition that evaluating investments less often increases the willingness of myopic and loss averse investors to accept risk.³⁸⁸

Epley, Mak and Idson show that savings and spending is influenced by loss aversion. In particular, the authors use the example of reductions in taxation. Whether these reductions are spent by a person depends on the label attached to them. For example, the

³⁸⁶ Richard Thaler and Cass Sunstein, *Nudge* (2009): Penguin, London, 131; Richard Thaler, Amos Tversky, Daniel Kahneman and Alan Schwartz, ‘The Effect of Myopia and Loss Aversion on Risk Taking’ (1997) 122 *The Quarterly Journal of Economics* 647; Daniel Kahneman, Jack Knetsch and Richard Thaler, ‘Anomalies: The Endowment Effect, Loss Aversion and the Status Quo Bias’ (1991) 5 *The Journal of Economic Perspectives* 193, 199.

³⁸⁷ Allan Schmid, *Conflict and Cooperation: Institutional and Behavioural Economics* (2004): John Wiley & Sons, United States, 42.

³⁸⁸ Richard Thaler, Amos Tversky, Daniel Kahneman and Alan Schwartz, ‘The Effect of Myopia and Loss Aversion on Risk Taking’ (1997) 122 *The Quarterly Journal of Economics* 647, 649-650.

authors found that reductions presented as a “bonus” were more likely to be spent than reductions represented as a “rebate”. This is explained in terms of the perception of individuals, such that their loss aversion makes gains (a “bonus”) appear to be outside funding rather than a foregone loss (a “rebate”). Therefore, people are more willing to spend gains than make a foregone loss, and this can be attributed to loss aversion.³⁸⁹ The UK Consumer Financial Education Body explains that ‘this clearly suggests that the framing of prospects in terms of losses and gains can actively change behaviour’.³⁹⁰

Aversion to loss may be reduced by context. A string of gains increases confidence thereby increasing a person’s willingness to undertake risky ventures. Similarly, a large loss may cause the opposite effect to risk aversion, motivating the person to win back losses, or “get even”.

(b) Risk preferences are influenced by context

Individual preferences are unstable, and highly dependant on context.³⁹¹ While people are generally loss averse in most instances, contextual factors such as the promise of return can increase risk taking tendencies.

First, the process of making a decision creates preferences. While preference creation may be biased towards preconceived viewpoints, pre-defined preferences are not held. Second, the context influences the factors that are considered relevant in the processing stage, thereby altering preferences. This means that ‘behavior is likely to vary across situations that economists consider identical’.³⁹² Tversky and Thaler go on to explain three different views regarding values, and confirm that such values are context dependent:

³⁸⁹ N Epley, D Mak and L Idson, ‘Bonus or Rebate? The Impact of Income Framing on Spending and Saving’ (2006) 19 *Journal of Behavioral Decision Making* 213.

³⁹⁰ Financial Services Authority, *Financial Capability: A Behavioural Economics Perspective* (2008) <http://www.cfebuk.org.uk/pdfs/20100713_transforming_financial_behaviour.pdf>, 24.

³⁹¹ Amos Tversky and Richard Thaler, ‘Anomalies: Preference Reversals’ (1990) 4 *Journal of Economic perspectives* 201, 202-203.

³⁹² *Ibid*, 210.

First, values exist ... and people perceive and report them as best they can, possibly with bias ...
Second, people know their values directly ... Third, values or preferences are commonly
constructed in the process of elicitation ... The research in this article is most compatible with the
third view of preference as a constructive, context-dependent process.³⁹³

One contextual factor that alters risk preferences is the promise of reward. A
neurobiological study shows that when a reward is offered, activity in the brain alters:

... activity in the medial frontal cortex was associated with risk aversion and activity in the lateral
frontal cortex was associated with risk-seeking choices.... Preuschoff et al. found that reward
expectation correlated with initial activity in the ventral striatum, while reward variance correlated
with delayed activity.³⁹⁴

The ventral striatum is an area of the brain which appears to ‘play an important role in
motivation and reward-related behavior’.³⁹⁵ Preuschoff, Bossaerts and Quartz found that
initial activation of the ventral striatum varied with expected reward, but subsequent
activation in the ventral striatum varied with risk.³⁹⁶ The late responses in the ventral
striatum support the ‘hypothesis that risk is encoded as reward variance in the brain’.³⁹⁷
Reward variance therefore refers to risk.³⁹⁸ Contextual stimuli promising reward which
is framed in a particular way can therefore set a perception that taints the consideration of
risk variance, and this can explain irrational risk taking in financial decision making. Risk
taking, such as problem gambling, is however isolated to a percentage of the population.
Some aspects of risk taking therefore rely on emotions and self gratification.

³⁹³ Ibid.

³⁹⁴ Peter Politser, *Neuroeconomics* (2008):Oxford University Press, New York, 39.

³⁹⁵ Munetaka Shidara, Thomas Aigner and Barry Richmond, ‘Neuronal Signals in the Monkey Ventral Striatum Related to Progress through a Predictable Series of Trials’ (1998) 18 *The Journal of Neuroscience* 2613.

³⁹⁶ Kerstin Preuschoff, Peter Bossaerts and Steven Quartz, ‘Neural Differentiation of Expected Reward and Risk in Human Subcortical Structures’ (2006) 51 *Neuron* 381, 387.

³⁹⁷ Ibid.

³⁹⁸ Ibid, 388.

(c) Overweighting small probabilities

People tend to overweight low probabilities, and this behaviour ‘explains the widespread desire to gamble on low-probability events’.³⁹⁹ Risk aversion tends to occur when large amounts have a small risk of loss, whereas people tend to take more risk when small amounts can be lost at high risk. Chen and Jia note that:

Overweighting (underweighting) here means that a person unconsciously assigns a larger (smaller) value to an objective probability, as if the outcome is more (less) likely to happen with reference to the objective likelihood. This can be illustrated by considering the choice of whether to receive a sure gain of 5, or to take a risky option with a 1 in 1,000 chance of winning 5,000. In a behavioral experiment, Kahneman and Tversky (1979) find that a majority of the participants chose the risky option (72%) over the sure gain. This result runs counter to the idea of risk aversion and shows the evidence of overweighting a small probability.⁴⁰⁰

However, perceptions about small probability events may be altered by price. For example, as prices of coverage increase people may become increasingly reluctant to insure against small probability events.⁴⁰¹ This also acts in the inverse, such that people are willing to spend small amounts on low probability events.

Chen and Jia find that the overweighting of small probabilities is dependant on context.⁴⁰² The authors explain that:

... whenever two options are compared (be they two gambles or a sure thing and a gamble in either the gain or loss domain), small probabilities are less likely to be overweighted when the contrast in value is reduced or not presented. In addition, as the associated payoffs increase (which imply a larger sacrifice for the risky option), the weights on small probabilities tend to be attenuated. Given a sufficiently large sacrifice, “underweighting” of small probabilities can be expected. However, the element of “interpersonal difference” has to be taken into account because

³⁹⁹ Financial Services Authority, *Financial Capability: A Behavioural Economics Perspective* (2008) <http://www.cfesuk.org.uk/pdfs/20100713_transforming_financial_behaviour.pdf>, 26.

⁴⁰⁰ Rong Chen and Jianmin Chia, ‘Consumer Choices Under Small Probabilities: Overweighting and Underweighting?’ (2005) 16 *Marketing Letters* 1, 6.

⁴⁰¹ *Ibid*, 14.

⁴⁰² *Ibid*, 15.

the significance of the size of the sacrifice involved varies in the light of an individual's wealth status.⁴⁰³

Therefore, irrational behaviour may result from the tendency to overweight small probabilities. This can be evinced through gambling or the use of unnecessary insurance policies, which results in financial waste. In certain circumstances, “underweighting” can occur when the incentive (the pay off) is reduced or the risk increased. Therefore, underweighting or overweighting is context dependant.

One study found that, due to risk seeking tendencies, riskier products with higher return will be viewed more favourably than less risky products with lower return.⁴⁰⁴ Byrne concludes that decision making under risk is far from rational due to heuristics used to simplify the complex nature of financial decisions, which permits bias. In doing so, she also concludes that risk perceptions and previous outcomes with an investment do play a central role in financial decisions.⁴⁰⁵

(d) *Disposition effect*

Given that loss aversion has been explained as the avoidance of regret, the human inclination to avoid regret and embarrassment, but seek pride and praise, is a reason why investors display a preoccupation with retaining inappropriate financial products. For example, people may retain poor performing stocks to avoid regret, while selling high performing stocks to gain praise. However, such sales result in foregone future gains.⁴⁰⁶ One study, by Odean,⁴⁰⁷ found that ‘investors are 50% more likely to sell a winner than a

⁴⁰³ Ibid, 15.

⁴⁰⁴ Kyoung-Nan Kwon and Jinkook Lee, ‘The Effects of Reference Point, Knowledge and Risk Propensity on the Evaluation of Financial Products’ (2009) 62 *Journal of Business Research* 719.

⁴⁰⁵ Kathleen Byrne, ‘How Do Consumers Evaluate Risk in Financial Products?’ (2005) 10 *Journal of Financial Services Marketing* 21, 24, 32.

⁴⁰⁶ Kent Baker and John Nofsinger, ‘Psychological Biases of Investors’ (2002) 11 *Financial Services Review* 97, 107.

⁴⁰⁷ T Odean, ‘Are Investors Reluctant to Realise their Losses?’ 53 *Journal of Finance* 1775.

loser'.⁴⁰⁸ Another study, by Grinblatt and Keloharju,⁴⁰⁹ examined 293,034 sell trades in the Finnish stock market. The findings confirmed the disposition effect:

They find that if a stock outperforms the market by 10%, the investor's likelihood of selling the stock *increases* by 26%. On the other hand, an underperformance of 10% *decreases* the likelihood of selling by 14%. Investors do not like to sell losers, only winners.⁴¹⁰

Reflecting the long term nature of investing in shares, this activity is irrational. It displays that the avoidance of regret, and the seeking of pride, is influential. This is possibly more influential than making more profit in the long term, or making a sound long term investment.

Thaler and Sunstein identify that no 20 year period exists in history where stocks have fallen in real value, or have been outperformed by bonds.⁴¹¹ For them, over 20 years, stocks are 'almost certain' to 'go up'.⁴¹² However, when analyzing risk aversion in people, Thaler and Sunstein's explanation reveals that some people are "short sighted", such that long term gains are not as attractive as the prospect of short term gains. One study reveals that technology stock holders tended to sell after prices fell, but buy aggressively when prices peaked.⁴¹³ Apart from an aversion towards loss, this also reflects the short sightedness by investors who tend to ride the wave of popularity, following norms and defaults while also being prone to short term wants and desires.

⁴⁰⁸ Kent Baker and John Nofsinger, 'Psychological Biases of Investors' (2002) 11 *Financial Services Review* 97, 108.

⁴⁰⁹ M Grinblatt and M Keloharju, 'What Makes Investors Trade' (2001) 56 *Journal of Finance* 589.

⁴¹⁰ Kent Baker and John Nofsinger, 'Psychological Biases of Investors' (2002) 11 *Financial Services Review* 97, 108.

⁴¹¹ Richard Thaler and Cass Sunstein, *Nudge* (2009): Penguin, London, 131.

⁴¹² *Ibid.*

⁴¹³ *Ibid.*, 133.

(e) Ambiguity aversion

People prefer risks that are foreseeable and known over risks that are unknown, and ambiguity aversion has been repeatedly shown to influence human behaviour in many studies.⁴¹⁴ Kariv, Choi, Gale and Ahn found that approximately two thirds of subjects studied had a positive degree of ambiguity aversion.⁴¹⁵ However, individuals showed mixed preferences:

Our individual-level analyses show that preferences vary widely across subjects and range from risk neutrality with ambiguity aversion, to ambiguity neutrality with risk aversion, to infinite risk aversion.⁴¹⁶

While individuals differ, the study shows that people are, for the most part, ambiguity averse and, among the ambiguity averse, investment portfolios are selected accordingly.

2 Bias and decision making

Consumer decision making consists of considering products, and the process of mental editing whereby consumers refer to factors such as wealth and income to determine whether the product is suitable. During this process, errors occur and therefore consumers develop bias.

(a) Reference points

Reference points include considerations relevant to a decision, such as net worth, income, expected net worth etc. That is, a person may refer to his or her assets when making a decision, or another reference point.

Once established, reference dependence can cause problems. This includes rigidly adhering to a reference point irrespective of the negative consequences of such rigidity.

⁴¹⁴ Shachar Kariv, Syngjoo Choi, Douglas Gale and David Ahn, 'Estimating Ambiguity Aversion in a Portfolio Choice Experiment' (Working Paper No 2009-05, Coleman Fung Risk Management Research Center UC Berkeley, 2009), 24.

⁴¹⁵ Ibid.

⁴¹⁶ Ibid.

According to one study, ‘the utility of money is judged relative to very locally and narrowly determined reference points’.⁴¹⁷ Reference points in these instances are motivators for action, such as pay or interest earned. However, if negative consequences occur and such consequences can be connected or linked to the reference point, then a person can alter his or her reference point.

The relevance of reference points to behavior is not so much the points themselves, but *changes* to these reference points. Politser writes:

... different reference points may alter evaluations, adding other possible sources of inconsistency in choice, although not all such changes are maladaptive. Particularly, changes in the reference points themselves sometimes occur and facilitate adaptation.⁴¹⁸

Therefore, altered reference points may not always be the cause of irrational behaviour. Rather, the *process* of changing reference points, possibly through trial and error through the facilitation of change, may result in suboptimal outcomes. The mental editing process can cause errors, such that people may rely on inaccurate reference points. For example, the use of outdated reference points or ignoring the actual reference points (such as ignoring net worth when investing, and instead considering the value of investment itself) can result in outcomes that may be less optimal than if actual reference points had been used.

The errors made during the mental editing process in relation to reference points can be explained by prospect theory.

⁴¹⁷ Financial Services Authority, *Financial Capability: A Behavioural Economics Perspective* (2008) <http://www.cfesuk.org.uk/pdfs/20100713_transforming_financial_behaviour.pdf>, 25.

⁴¹⁸ Peter Politser, *Neuroeconomics* (2008): Oxford University Press, New York, 93.

(b) *Prospect theory*

Mental processes “edit” variables before evaluation occurs. This process is known as prospect theory. Prospect theory is usefully explained by Politser, who uses the real life example of the wealthy Oscar nominee Winona Ryder stealing from a clothing store. This was irrational in light of the minute change to her net worth that would have resulted had she purchased the clothing. People tend to “edit” their net worth when making decisions, such that the cost of a product is not detracted from net worth. Therefore, before evaluating the product, net worth is ignored.⁴¹⁹ As Politser explains, Winona Ryder may have ignored her net worth prior to evaluating the cost of the products, and such editing resulted in her irrational act.

Kahneman and Tversky developed prospect theory, and show that it has two processes: editing and evaluating. The initial editing process could be due to a number of reasons. First, editing could be caused by the need to *simplify* the transactions, whereby the loss or gain is rounded off without factoring net worth. Second, the mind may *segregate* irrelevant components of transactions. Third, *cancellation* may occur, such that the editing removes from consideration the element common to both choices.⁴²⁰ The most fundamental editing process involves the *elimination of dominated alternatives*, whereby a possible return of \$5000 in a gamble is dominated by a return of \$0. However, the evaluation phase may bring to mind the potential losses that could be suffered by deducting the gamble from net worth.⁴²¹ Simplifying transactions, segregating seemingly irrelevant components, cancelling common elements of choices, and having pessimistic views dominate optimistic ones, results in important information being overlooked while not using an accurate reference point. As a result, when comparing two financial products, a consumer may not choose the best product due to prospect theory and reference points.

⁴¹⁹ Ibid.

⁴²⁰ Ibid.

⁴²¹ Ibid, 74.

(c) *Mental accounting*

Mental accounting refers to household bookkeeping, and keeping a record of assets, liabilities as well as income and expenses. It is explained as ‘the set of (implicit or explicit) cognitive activities that individuals and households engage in to serve the same function that regular accounting serves in an organization’.⁴²²

One key aspect of financial accounting is aggregation. Aggregation refers to the manner in which transactions are grouped. Transactions can be grouped cross-sectionally (whether shares are evaluated individually or as part of a portfolio) and intertemporally (the frequency at which the portfolio is evaluated). Thaler, Tversky, Kahneman and Schwartz explain the importance of mental accounting:

A financial investor can be modeled as making a series of decisions about the allocation of his assets. Mental accounting determines both the framing of decisions and the experience of the outcomes of these decisions. An investor who frames decisions narrowly will tend to make short-term choices rather than adopt long-term policies. An investor who frames past outcomes narrowly will evaluate his gains and losses frequently. In general, narrow framing of decisions and narrow framing of outcomes tend to go together, and the combination of both tendencies defines a myopic investor.⁴²³

Whether transactions are grouped intertemporally is influenced by risk aversion, such that a reduced frequency of review decreases sensitivity to losses. This may also apply to viewing transactions as part of a portfolio, because the losses will be amongst a diversified collection of assets and as such any losses in the portfolio will not appear as negative as if such losses were reviewed individually, and without the context of the portfolio.

Put a different way, mental accounting can also promote the problem of compartmentalization of finances. This is recognized as assigning to particular funds a purpose, and accordingly acting in a suboptimal way by rigidly adhering to that purpose.

⁴²² Richard Thaler, Amos Tversky, Daniel Kahneman and Alan Schwartz, ‘The Effect of Myopia and Loss Aversion on Risk Taking’ (1997) 122 *The Quarterly Journal of Economics* 647, 648.

⁴²³ *Ibid*, 648.

For example, compartmentalization may include avoiding paying off credit card debt from savings because the savings goal would be impacted, even though interest is being charged and it would be more efficient to pay off the credit card. This stems from the idea in behavioural economics that money is *not* fungible.⁴²⁴

Traditional economic theory assumes that money is fungible – money has no labels and households’ wealth can be collapsed into a single lump sum. Insights from behavioral economics, however, have shown that people often group their wealth into separate “mental accounts” tied to specific spending goals.⁴²⁵

These spending goals attach rigidity to overall wealth, and this rigidity may result in compartmentalization of funds. Therefore combined with prospect theory, mental accounting is an example of decision making that results in bias. The decisions made about investments, such as to review a portfolio frequently, cause heightened sensitivity to losses thereby resulting in bias.

(d) Experience, learning and reinforcement

People sometimes learn from experiences. However, memories are stored in such a way that people recall only parts of those memories that are valued. Given only parts of memories are kept, the content of these parts influence future behaviour and feelings about similar experiences. Therefore, increased experience with a situation decreases the degree to which parts of the memory are exaggerated. This allows people to draw on previous experiences, and apply them to existing problems to form more accurate solutions. Therefore, people can recall their actual feelings about a stimuli more accurately without too much exaggeration while appreciating its value.

Schmid explains that ‘representation of experience over time is heavily influenced by peak and end valuation’,⁴²⁶ such that the duration of the experience is neglected and

⁴²⁴ Richard Thaler, ‘Saving, Fungibility, and Mental Accounts’ (1990) 4 *Journal of Economic Perspectives* 193, 194-195.

⁴²⁵ Aparna Dalal and Jonathan Marduch, ‘The Psychology of Microinsurance: Small Changes Can make a Surprising Difference’ (Briefing Note, International Labour Organization, September 2010), 2.

⁴²⁶ *Ibid*, 40.

instead snippets of the experience are recollected. This is particularly important for consumers, because a desirable outcome will be assessed with reference to past experience of the peaks and end results of actions, not the *total* experience itself.

Schmid refers to Kahneman's concept of "focusing illusion", which means that the act of focusing on an aspect of life results in an exaggerated perception of its importance.⁴²⁷

Experience with a particular life event tends to lessen the extent to which that particular perception is exaggerated.

3 Bias and time

The passage of time causes preferences to change, and the value of objects to change. Time plays an important role in molding the biases of consumers. Consumers tend to show bias towards a particular goal at one time, but as that goal approaches, the goal is reassessed. The goal also appears less desirable if it is far away.

(a) Hyperbolic discounting

Hyperbolic discounting can impact saving behaviour and investment strategy, because people perceive long term pay offs less desirably than short term pay offs of lesser value. This means that people are inclined to view short term payments of a lesser amount more desirably than long term payments of a higher amount.⁴²⁸ Laibson explains:

Hyperbolic discount functions are characterized by a relatively high discount rate over short horizons and a relatively low discount rate over long horizons.⁴²⁹

For example, this may result in delaying a decision to start a savings regime because preferences change as a date nears. Accordingly, as the date nears so too does the change in the discount rate. Hyperbolic discounting therefore refers to the decreased attraction to

⁴²⁷ Ibid, 41.

⁴²⁸ Ibid, 110. Read however questions the hyperbolic nature of time discounting, and the importance of hyperbolic discounting. See: Daniel Read, 'Is Time-Discounting Hyperbolic or Subadditive?' (2001) 23 *Journal of Risk and Uncertainty* 5.

⁴²⁹ David Laibson, 'Golden Eggs and Hyperbolic Discounting' (1997) 112 *Quarterly Journal of Economics* 443, 445.

delayed payments, even where immediate payments would be less. Politser explains that a:

Person places a higher value on the immediate \$1,000 over the delayed \$1,100 but prefers the \$1,100 over the \$1,000 when both options are delayed by additional 10 years.⁴³⁰

Hyperbolic discounting therefore shows that people will act in a suboptimal manner to gain an immediate benefit. People are impatient, and willing to incur a loss to gain an immediate benefit. However, this does depend on the size of the reward. The simplest form of the hyperbolic discounting model ‘takes the present utility of a delayed reward to be proportional to the actual size of the reward (x) divided by a function of the delay’.⁴³¹ This displays that people mentally discount a payment that is distant.

In the Australian share market, an investor may be considered “bullish”, “bearish” or a “stag”. A “bull” investor is optimistic that the market will charge up. A “bear” investor is pessimistic, and believes the market will claw back. A “stag” investor believes a stock will jump up and deliver quick value returns. In light of the view that risk taking tends to increase as promise of reward increases, a “stag” investor is a prime example of a person who conducts hyperbolic discounting. That investor would prefer to invest in a speculative mining share rather than a blue chip bank share, because the promise of returns may be quicker. A speculative share is also very risky, and akin to gambling. Hyperbolic discounting, together with risk preferences, can explain the existence of the speculative share market and trading in exploration companies without any recorded profit.

⁴³⁰ Peter Politser, *Neuroeconomics* (2008): Oxford University Press, New York, 50.

⁴³¹ *Ibid*, 50.

(b) Time and time inconsistent preferences

People can be indecisive and fickle, and this causes preferences about financial products and investment strategy to change over time.⁴³² This fickleness is known as dynamic inconsistency. Given that preferences change over time, indecisiveness can be costly. This cost results from long term goals being derailed before those goals are realised, undermining long term financial goals. While flexibility is important, the propensity to have inconsistent preferences makes adhering to long term financial goals difficult.

Patterns of consumption that alter over time without new information are described as a time inconsistent preference. Without new information, there is no rational basis for altering the pattern of consumption. This can be caused by short term desires for gratification being inconsistent with long term preferences, such as saving.⁴³³ This bias translates into reduced long term savings and insurance coverage:

... even if these people genuinely value saving for the future, that plan will be hard to sustain and the preference to consume will predominate. The tension is sometimes called “present bias” and it can similarly reduce the demand for insurance.⁴³⁴

Optimal financial decisions are assisted by a future orientated mindset which “lives for tomorrow”. People with this mentality save more, invest more and live within their means to provide for the future.

A significant cause of suboptimal financial behaviour is an attitude that “lives for today”. This attitude results from a bias known as present biased preference exhibited by time inconsistent individuals. Meier and Sprenger found that present biased individuals are more likely to have credit card debt and borrow than dynamically consistent individuals,

⁴³² Narayana Kocherlaksta, ‘Looking for Evidence of Time-Inconsistent Preferences in Asset Market Data’ (2001) 25 *Federal Reserve Bank of Minneapolis Quarterly Review* 13.

⁴³³ Allan Schmid, *Conflict and Cooperation: Institutional and Behavioural Economics* (2004): John Wiley & Sons, United States, 42.

⁴³⁴ Aparna Dalal and Jonathan Marduch, ‘The Psychology of Microinsurance: Small Changes Can Make a Surprising Difference’ (Briefing Note, International Labour Organization, September 2010), 2.

with such debt being higher than average.⁴³⁵ Akin extends this analysis to sophisticated, partial naïve and naïve types, showing that high cost activity without much regard for future return tends to be shown much more strongly by naïve types.⁴³⁶

Reducing barriers to optimal financial decisions can reduce procrastination and encourage self control⁴³⁷ and dynamic consistency. Dynamic inconsistency results from lack of self control. This is demonstrated by an experiment conducted by Ashraf, Karlan and Yin,⁴³⁸ who tested savings behaviour of consumers of the Green Bank of Caraga in The Philippines. The study is aptly titled “Tying Odysseus to the Mast”, and it shows that binding a person to a savings goal increases savings significantly. This demonstrates, and overcomes, the problem of time preferences. The subjects were randomly divided into three groups. The first group was offered a product called “SEED”, which did not allow a client to withdraw money until the savings goal was reached. The second group received nothing. The third group were given information about the value of saving, but no products. All groups had access to a normal savings account, offering the same interest as SEED. A year later, SEED account holders had increased savings by 81% which was substantially higher than the other groups. This shows that self control problems and short term thinking are evident, but can be managed to a degree.

4 Bias to the self

Because people want to feel better about themselves and their decisions, often self-assessment is done with bias. People tend to validate themselves, because of the emotional need for success and pride. Ego influences consumer behaviour and also a host of other biases such as overconfidence, lack of control, inertia, procrastination, desire, wants, validation and following habits and routines.

⁴³⁵ Stephen Meier and Charles Sprenger, ‘Present-Biased Preferences and Credit Card Borrowing’ (2010) 2 *American Economic Journal* 193, 195, 205, 206.

⁴³⁶ Zafer Akin, ‘Intertemporal Decision Making with Present-Biased Preferences’ (Working Paper 1001, TOBB University of Economics and Technology Department of Economics, February 2010) <<http://ikt.web.etu.edu.tr/RePEc/pdf/1001.pdf>>.

⁴³⁷ Aparna Dalal and Jonathan Marduch, ‘The Psychology of Microinsurance: Small Changes Can Make a Surprising Difference’ (Briefing Note, International Labour Organization, September 2010), 2.

⁴³⁸ Nava Ashraf, Dean Karlan and Wesley Yin, ‘Tying Odysseus to the Mast: Evidence from a Commitment Savings Product in The Philippines’ (2006) 121 *Quarterly Journal of Economics* 673.

(a) *Ego*

People tend to have high opinions of themselves, and most look at their own actions and achievements with a bias intended to make them feel better about themselves. Research suggests that people make evaluations that are favourable to the self.⁴³⁹ For example, De Dreu, Nauta and Evert van der Vliert found that self serving behaviour caused participants in a study to assess their conflict behavior as more constructive than the behaviour of their opponents. This self serving behaviour also has implications for finance, because actions will be glossed over and considered in a favourable light and in a self serving fashion, possibly skewing the ability to learn from previous behaviour.

The need to improve our self esteem and make us feel better about ourselves is reflected in human ego. This is a result of “fundamental attribution error”:

Evidence shows that humans do behave in a way that supports the impression of a positive and consistent self image. When we are doing well, we attribute it to ourselves; when we do badly, we blame other people or the situation we were in – an effect known as the ‘fundamental attribution error’.⁴⁴⁰

This can be explained by altering our perceptions to view matters in a way that reflects well on ourselves. So everything is tainted with bias, and that bias is viewing ourselves in the best possible light. Consider a football match and the way a fan perceived the performance of his or her own team. For example:

A match in which both teams appear equally culpable of committing fouls to an impartial observer will be seen by a partial fan as one characterised by far more fouls by the opposing team than their own.⁴⁴¹

⁴³⁹ Carsten De Dreu, Aukje Nauta, Evert van der Vliert, ‘Self-Serving Evaluations of Conflict Behavior and Escalation of the Dispute’ (2006) 25 *Journal of Applied Social Psychology* 2049.

⁴⁴⁰ Financial Services Authority, *Financial Capability: A Behavioural Economics Perspective* (2008) <http://www.cfebuk.org.uk/pdfs/20100713_transforming_financial_behaviour.pdf>, 33.

⁴⁴¹ *Ibid*, 33.

Because a person's identity is attached to the group to which the individual self identifies, ego causes the person to want the group to do well, because it reflects favourably on the person.

(b) Overconfidence

People tend to be over confident in business dealings and assume a venture will be successful. Costs of a venture are also greatly underestimated.⁴⁴² The financial literacy surveys in the appendix to this research report, and the findings throughout this report, show that most people are overconfident about their financial capability and literacy, and with financial prospects in general. A minority appeared pessimistic. Generally, studies show that people are overconfident about future events.⁴⁴³ Thus favourable and unfavourable financial prospects are tainted by over-optimism, and this creates an unrealistic picture of the future and this in turn results in deficient planning which does not meet future needs.⁴⁴⁴ One result is reduced investment and insurance:

This could cause people to under-invest in proactive risk management compared to what they would invest if they were considering actual risk probabilities. When people do not have a good understanding of how likely they are to experience a hardship, they may undervalue protective measures like insurance.⁴⁴⁵

Two main factors contribute to overconfidence: the illusion of knowledge and the illusion of control. The former relates to the incorrect assumption that large volumes of information mean that a decision is better informed, without regard to the skill of the person interpreting the information. The latter relates to the view that 'people often believe that they have influence over the outcome of uncontrollable events'.⁴⁴⁶ Default

⁴⁴² Allan Schmid, *Conflict and Cooperation: Institutional and Behavioral Economics* (2004): John Wiley & Sons, United States, 38.

⁴⁴³ See: Neil Weinstein, 'Unrealistic Optimism About Future Life Events' (1980) 39 *Journal of Personality and Social Psychology* 806.

⁴⁴⁴ Aparna Dalal and Jonathan Marduch, 'The Psychology of Microinsurance: Small Changes Can Make a Surprising Difference' (Briefing Note, International Labour Organization, September 2010), 2.

⁴⁴⁵ Ibid.

⁴⁴⁶ Kent Baker and John Nofsinger, 'Psychological Biases of Investors' (2002) 11 *Financial Services Review* 97, 103.

options in financial products, or detailing to consumers real risks and consequences of an action, may mitigate the effect of this optimism.

Bias to the self also relates to lack of self control, which results in personal wants and desires.

(c) Lack of self control, postponing decisions and inertia

The study by Ashraf, Karlan and Yin shows that people suffer from a lack of self control, despite the fact there exists a psychological willingness to pursue a particular path. As a result, suboptimal behaviour is exhibited irrespective of education. In the study, one group of the three were given educational materials about the benefits of saving. Despite this, the group with access to the SEED accounts saved substantially more during the 12 months of the experiment. The study by Thaler and Benartzi produced similar results, while also showing that people tend to postpone decisions, procrastinate and display inertia.⁴⁴⁷ Unlike the SEED program, the SMarT program in the study by Thaler and Benartzi allowed participants to opt out at any time. The program successfully curbed inertia and procrastination:

SMarT participants almost quadrupled their saving rates. Of course, one reason why the SMarT plan works so well is that inertia is so powerful. Once people enroll in the plan, few opt out. The SMarT plan takes precisely the same behavioral tendency that induces people to postpone saving indefinitely (i.e: procrastination and inertia) and puts it to use.⁴⁴⁸

These findings go against the view that financial illiteracy, by itself, causes inertia, because inertia (particularly in relation to saving and investing) appears to be a product of lack of self control, procrastination and inertia. Therefore, as a result of individual characteristics, people tend to have a bias towards those acts that need little or no work.

⁴⁴⁷ Richard Thaler and Shlomo Benartzi, 'Save More Tomorrow: Using Behavioural Economics to Increase Employee Saving' (2004) 144 *Journal of Political Economy* 164.

⁴⁴⁸ *Ibid*, 185.

The power of commitments in behavioural economics reveals that the proclamation of a goal (either publicly or in writing) increases the chance of succeeding at that goal. These commitments become more effective as the costs of failure increase, and this reflects the conscious understanding of lack of self control.⁴⁴⁹

Lack of self control is influenced by wants and desires. These wants and desires can be harmful to consumers, resulting in suboptimal financial decisions.

(d) Wants

Some people want to smoke cigarettes, gamble or eat junk food even though they know it is bound to result in negative consequences such as lung cancer, loss of money or gaining weight. Some people gain enjoyment from smoking cigarettes, gambling or eating fatty foods. It appears rational to desire what we enjoy. Neuroeconomics, however, finds that even when enjoyment is no longer derived from a once enjoyed activity, the behaviour sometimes continues. People therefore may simply want something that is no longer liked or useful, simply due to desire.

Modern neuroeconomics questions Jeremy Bentham's observation that the experience of pleasure prompts us to prolong the experience, whereas the experience of pain prompts us to stop the experience.⁴⁵⁰ This economic theory assumed that our "likes" reflected our "wants", but modern neuroeconomics shows that people may "want" what is no longer pleasing, or desire once valued objects which have lost their value.

For example, Politser writes:

As ... illustrated in the environmental cues model, a profound wanting can motivate drug consumption even when the drugs no longer produce the expected euphoria So just as "wants" – the desire to achieve goals – can directly trigger actions to obtain what is not liked, drugs that block such wants can prevent the implementation of goals to obtain what is liked.⁴⁵¹

⁴⁴⁹ Financial Services Authority, *Financial Capability: A Behavioural Economics Perspective* (2008) <http://www.cfcbuk.org.uk/pdfs/20100713_transforming_financial_behaviour.pdf>, 32.

⁴⁵⁰ Peter Politser, *Neuroeconomics* (2008): Oxford University Press, New York, 100.

⁴⁵¹ Ibid.

Therefore, consumer behaviour can be influenced by “wants” which may produce suboptimal results, but which are nonetheless “wants” which trigger the motivation to acquire what is not liked, or valued, but what is “wanted”. The compartmentalization of money such that the goal of saving is more important than repaying credit cards, while being unnecessarily costly, is an example of such a “want” causing suboptimal behaviour. This can extend to trust and loyalty to a provider, or the perceived prestige associated with a product. As a result, utility theory may not apply to everybody and the fact that people may “want” what is detrimental or harmful should inform policy actions to improve financial behaviour. Bias to the self can include the desire to prolong a venture which appears unprofitable, which is explained by the sunk costs effect.

(e) Sunk costs

Sunk costs are those costs which have been incurred, and which cannot be recovered. In behavioural economics the sunk costs effect refers to the tendency to continue on a path regardless of the potential costs. In other words, the fact that marginal cost exceeds marginal revenue will be ignored. Instead, someone will need to admit to a mistake, and that is hard to do.⁴⁵² Similar examples include the “concorde fallacy” and the “sacrifice trap”. When the British and French governments became aware that the Concorde company was not profitable and no longer commercially viable, both nonetheless continued to fund the joint venture. Similarly, the “sacrifice trap” refers to being stuck in a war, such that to end a war that has been started would admit to being wrong and cheapen the sacrifice already made.⁴⁵³ People may therefore enter a cycle from which they cannot, or, do not want to, escape.

The sunk costs effect has important implications for financial behaviour, because it shows that an investor will continue suffering losses for no rational reason, but rather for wants and desires such as the perception of success. This delusion is explained by the confirmatory bias.

⁴⁵² Allan Schmid, *Conflict and Cooperation: Institutional and Behavioral Economics* (2004): John Wiley & Sons, United States, 45.

⁴⁵³ *Ibid*, 45.

(f) Confirmatory bias

Confirmatory bias explains why people prefer information that confirms their hypothesis, regardless of whether the information is true. Confirmatory bias leads to various consequences in behaviour.

Confirmatory bias can lead to overconfidence with established perceptions about an investment, resulting in a form of investing that overlooks risks or information that puts into question the efficacy of the investment.⁴⁵⁴ Bias has been shown to result in economic loss, because a lack of neutrality causes an investor to make suboptimal decisions about investments which are emotionally fulfilling. Hilton found that neutral decisions are more likely to result in greater profits than biased decisions.⁴⁵⁵

A reflection of human rigidity and stubbornness, the confirmatory bias shows that mental processing will alter key information to make it appear as though it validates a preconceived decision.

(g) Affect and emotions

Emotional responses can cause people to react to stimuli (a passionate plea or an attractive salesperson) without thinking, thereby committing to an unfavourable activity or buying a poor value product. One study of emotions and automatic responses found that:

Affect (the act of experiencing emotion) is a powerful force in decision making. Emotional responses to words, images and events can be rapid and automatic, so that people can experience a behavioural reaction before they realise what they are reacting to.⁴⁵⁶

⁴⁵⁴ Michael Pompian, *Behavioral Finance and Wealth Management: How to Build Optimal Portfolios that Account for Investor Biases* (2006), 187–190

⁴⁵⁵ Denis Hilton ‘The Psychology of Financial Decision-Making: Applications to Trading, Dealing, and Investment Analysis (2001) 2 *Journal of Behavioral Finance* 37.

⁴⁵⁶ Financial Services Authority, *Financial Capability: A Behavioural Economics Perspective* (2008) <http://www.cfebuk.org.uk/pdfs/20100713_transforming_financial_behaviour.pdf>, 32.

The link between financial decision making and emotions has been studied. One study found that hiring physically attractive salespeople or fundraisers makes business sense because consumers are willing to spend or give more when dealing with an attractive person. Landry, Lange, List, Price and Rupp⁴⁵⁷ found that ‘one standard deviation increase in [the] physical attractiveness among women fundraisers increases the average contributions by 50% to 135%’, confirming that the physical attractiveness of the fundraiser was more important than the cause.⁴⁵⁸ Bertrand, Karlan, Mullainathan, Shafir and Zinman⁴⁵⁹ found that advertising mail which included a picture of a woman increased ‘the likelihood of borrowing by just as much as dropping the interest rate by about 30%, for both men and women alike’.⁴⁶⁰

(h) Habits and routines

Habits are acquired over time, and adhering to these habits is an individual bias to make people feel secure. The financial activity of planning may be due to *habit*, and this reflects the importance of socialisation and experience with planning.⁴⁶¹ However, socialisation and experience can also result in the creation of bad financial habits. The creation of a habit is achieved through reinforcement, or conditioning.⁴⁶² When it comes to investing, habits and routines can be formed based on what has worked in the past without considering changed economic circumstances or markets.

Uncertainty about which products give people more utility causes people to develop routines, relying on previous acts that have been reinforced. Schmid states:

⁴⁵⁷ Craig Landry, Andreas Lange, John List, Michael Price and Nicholas Rupp, ‘Toward an Understanding of the Economics of Charity: Evidence from a Field Experiment’ (2006) 121 *Quarterly Journal of Economics* cited in Financial Services Authority, *Financial Capability: A Behavioural Economics Perspective* (2008) <http://www.cfebuk.org.uk/pdfs/20100713_transforming_financial_behaviour.pdf>, 32.

⁴⁵⁸ Ibid.

⁴⁵⁹ Marianne Bertrand, Dean Karlan, Sendhil Mullainathan, Eldar Shafir and Jonathan Zinman, ‘What’s Advertising Content Worth? Evidence from a Consumer Credit Marketing Field Experiment’ (2010) 125 *Quarterly Journal of Economics* 263.

⁴⁶⁰ Financial Services Authority, *Financial Capability: A Behavioural Economics Perspective* (2008) <http://www.cfebuk.org.uk/pdfs/20100713_transforming_financial_behaviour.pdf>, 32.

⁴⁶¹ Wi\$eUp, *Financial Planning for Generation X & Y Women* (2008) <<http://wiseupwomen.tamu.edu>>.

⁴⁶² Andrew Colman, *A Dictionary of Psychology* (2006): Oxford University Press, Oxford.

Knowing what goods increase our utility is problematic. In the face of uncertainty, consumers develop routines. Consumption is a “matter of learning about, choosing among, and creating routines” (Langlois and Cosgel, 1998). Consumers selectively perceive of consumption opportunities, classify them, and apply a routine behaviour that was worked out in the past – produced [sic] a satisfying result.⁴⁶³

This indicates the importance of financial education, because a path that produced good outcomes in one environment may in fact produce bad outcomes in changed economic conditions.

5 Bias to the group

Consumers favour people who are familiar to them, and with whom they have good relationships. This develops trust and confidence in that person, whose opinion is viewed with favourable bias. Bias can also favour the norms of the group to which a person belongs.

(a) Trust and loyalty

Relational-dependent consumers mitigate the complexity of financial products by building relationships with third parties which have perceived expertise in particular financial products, thereby developing a reliance on that third party. As a result, this relationship may erode rationality by lessening that person’s willingness to rely on factors such as price and cost, and instead maintaining a pattern of purchasing by relying on trust and loyalty to the third party. Beckett, Hewer and Howcroft explain:

...consumers have a predisposition to create relationships and emphasise trust and loyalty when they find it difficult to make rational choices on the basis of available information. In this manner, complicated “investment services” appear to fall naturally into the relational-dependant quadrant.⁴⁶⁴

⁴⁶³ Allan Schmid, *Conflict and Cooperation: Institutional and Behavioral Economics* (2004): John Wiley & Sons, United States, 42.

⁴⁶⁴ Antony Beckett, Paul Hewer and Barry Howcroft, ‘An Exposition of Consumer Behaviour in the Financial Services Industry’ (2000) 18 *International Journal of Bank Marketing* 15, 25.

Patterns of suboptimal consumer behaviour can therefore be explained in part by trust and loyalty, and in particular the relational-dependent personality type. Dependence is linked to desire, and wants, because the relationships formed may have some value for the consumer despite the relationship producing higher costs than the market may demand.

(b) Norms and the spotlight effect

People are influenced by the acts and deeds of others, and are thus susceptible to social pressures⁴⁶⁵ due to, for example, the desire to conform.⁴⁶⁶ The UK Consumer Financial Education Body introduces the topic of “norms” in behavioural economics in this way: ‘we tend to do what those around us are already doing’.⁴⁶⁷

The psychological impact of these social influences, such as norms, is important.

Social and cultural norms are the behavioural expectations, or rules, within a society or group... Some social norms have a powerful automatic effect on behaviour (e.g. buying on credit, being quiet in a library) and can influence actions in positive and negative ways. Their power may come from the social penalties for non compliance, or the social benefit that comes from conforming.⁴⁶⁸

Norms, like the influence of the crowd, are shown to therefore have an impact on the way people behave. These norms have such a powerful effect because people assume that they are being scrutinized by others. One study provides support for the “spotlight effect”, which seeks to explain people’s adherence to social norms and biases.⁴⁶⁹ If people believe they are in the “spotlight”, then they are more inclined to conform. According to Thaler and Sunstein:

⁴⁶⁵ Richard Thaler and Cass Sunstein, *Nudge* (2009): Penguin, London, 57.

⁴⁶⁶ *Ibid.*, 59.

⁴⁶⁷ Financial Services Authority, *Financial Capability: A Behavioural Economics Perspective* (2008) <http://www.cfefuk.org.uk/pdfs/20100713_transforming_financial_behaviour.pdf>, 28.

⁴⁶⁸ *Ibid.*

⁴⁶⁹ Thomas Gilovich, Victoria Medvec and Kenneth Savitsky, ‘The Spotlight Effect in Social Judgment: An Egocentric Bias in Estimates of the Salience of One’s Own Actions and Appearance’ (2000) 78 *Journal of Personality and Social Psychology* 211, 214, 217, 219.

One reason why people expend so much effort conforming to social norms and fashions is that they think others are closely paying attention to what they are doing.⁴⁷⁰

Therefore the belief that others are paying attention to the decisions of others can influence these decisions and in some circumstances lead to suboptimal decisions.

6 Bias to the prominent

More prominent memories, advertisements, and suggested courses of actions can influence behaviour, causing a predisposition to be biased to pursue that behaviour.

(a) Framing

Framing concerns the presentation of information. For example, a doctor can frame a prognosis in two ways. First, he or she may explain that the condition attracts a 10% mortality rate. Second, he or she may explain that the condition attracts a 90% survival rate. Both prognoses are framed in a particular way, and both explain the same result. However, the former will conjure feelings of fear and pessimism with a patient, while the latter will create feelings of hope and optimism. This illustrates the importance of framing, and framing also relates to the financial industry; in particular, marketing.⁴⁷¹

Thaler and Sunstein explain framing as it was used in the credit card industry. In the 1970s, the introduction of credit cards resulted in retailers wanting to charge a fee for their use or to charge credit card customers a different price than cash customers. This prompted the credit card companies to create rules proscribing such fees. However, when the United States Congress introduced a Bill to outlaw such rules, ‘the credit card lobby turned its attention to language’.⁴⁷² The preference of the credit card lobby was that:

... if a company charged different prices to cash and credit customers, the credit price should be considered the “normal” (default) price and the cash price a discount – rather than the alternative of making the cash price the usual price and charging a surcharge to credit card customers.⁴⁷³

⁴⁷⁰ Richard Thaler and Cass Sunstein, *Nudge* (2009): Penguin, London, 65.

⁴⁷¹ See: Richard Thaler and Cass Sunstein, *Nudge* (2009): Penguin, London, 39.

⁴⁷² Ibid.

⁴⁷³ Ibid, 39 - 40.

The RAND Corporation has studied the impact of “framing” on retirement planning, and has released research concerning the effects of framing on social security claiming behaviour.⁴⁷⁴ The study found that framing is important to retirement and social security claims. Framing a delayed claim as a gain and the value of delay as consumption rather than investment was reported to result in individuals being more likely to delay claiming.⁴⁷⁵ Framing is therefore linked with other aspects of behavioural economics, such as risk and loss aversion.

Its link with loss aversion is highlighted in a briefing note of the International Labour Organization, which explains that a potential loss is more likely to spur action than a potential gain. Particularly focusing on insurance, the note concludes that marketing can take advantage of this loss aversion by framing materials in a particular way.⁴⁷⁶

(b) Salience

People can be easily distracted, and their attention more easily drawn to unusual objects rather than to ordinary objects. The propensity to be drawn to prominent objects or needs is known as salience. This is particularly important in finance, because filtering out non-salient stimuli and instead absorbing salient stimuli can cause important parts of contracts, prospectuses or product disclosure statements to be missed. Salience explains why people may overlook important parts of contracts, and instead absorb those features which may *seem* important.

The importance we attach to stimuli influences how salient experiences are in our memory. This process of remembering results in salient aspects of memories receiving greater perceived importance. This influences behaviour much more than memories

⁴⁷⁴ Jeffrey Brown, Olivia Mitchell and Arie Kapteyn, ‘Is Social Security Claiming Influenced by How Information Is Framed?’ (Working Paper Brief, RAND Corporation, 2010) <<http://www.rand.org/labor/centers/financial-literacy/projects/framing-peer-retirement.html>>.

⁴⁷⁵ Jeffrey Brown, Olivia Mitchell and Arie Kapteyn, ‘Framing Effects and Social Security Claiming Behavior’ (Working Paper WR-793-SSA, Financial Literacy Center, October 2010) <http://www.rand.org/pubs/working_papers/WR793.html>.

⁴⁷⁶ Aparna Dalal and Jonathan Marduch, ‘The Psychology of Microinsurance: Small Changes Can Make a Surprising Difference’ (Briefing Note, International Labour Organization, September 2010), 1.

which have equal importance but are not as salient. Therefore, the process of filtering out seemingly less important stimuli causes other stimuli to be more salient, or memorable.

Our attention is drawn to what is novel and seems relevant to us. Our behaviour is greatly influenced by what our attention is drawn to ... Salience could explain why unusual or extreme experiences are more prominent than more constant experiences. Our memory of experiences is governed by the most intense 'peak' moments, as well as the final impressions in a chain of events.⁴⁷⁷

The separation of important from unimportant memories and stimuli (which are filtered out) is done in the process of encoding, which allows the brain to cope with the huge amount of information in the environment. Guido writes:

When people encode external stimuli, they do not pay the same attention to all aspects of the environment: Because attention is an integral part of encoding, salience determines the extent to which a stimulus is perceived (that is, noticed and interpreted).⁴⁷⁸

From a marketing perspective, salience can be used to design materials. This can be done such that they are interpreted in an intended manner by the marketer, making the product desirable to consumers⁴⁷⁹ and therefore memorable. As a result, the format and design of financial product information is relevant to salience, and whether the product information can be simplified and summarised. This also relates to the ability of the consumer to understand product information, because a concise product disclosure statement may allow important information to be read and understood.

In addition, future needs are less salient than current needs.⁴⁸⁰ This causes difficulty with planning for the future, and recognising with accuracy the financial needs of a household. These needs may be ignored or overlooked. Insurance, for example, covers unexpected

⁴⁷⁷ Financial Services Authority, *Financial Capability: A Behavioural Economics Perspective* (2008) <http://www.cfebuk.org.uk/pdfs/20100713_transforming_financial_behaviour.pdf>, 29.

⁴⁷⁸ Gianluigi Guido, *The Salience of Marketing Stimuli: An Incongruity-Salience Hypothesis on Consumer Awareness* (2001), 22.

⁴⁷⁹ Ibid.

⁴⁸⁰ Aparna Dalal and Jonathan Marduch, 'The Psychology of Microinsurance: Small Changes Can make a Surprising Difference' (Briefing Note, International Labour Organization, September 2010), 2.

loss. The unexpected character of the loss makes it less salient, and therefore some people, particularly families and people with low incomes, may be less inclined to take out insurance.⁴⁸¹ Dalal and Marduch write that:

By making adverse effects more salient, reminders can help overcome the limited attention that people typically pay to unpleasant, future events.⁴⁸²

Salience therefore applies to the present, and to the future. As a result, it affects many types of financial behaviours. Similarly, priming may make a factor seem more important.

(c) Priming

People can be influenced to do particular things by being primed. For example, an advertisement may prime a person to purchase a particular product. People can be primed without knowing it.

Priming explains that people's subsequent behaviour may be altered if they are first exposed to (primed by) certain stimuli such as words, sights, or sensations (and these effects are real and robust). Examples abound in the literature. Exposing people to *words* relating to the elderly (e.g. *wrinkles*) [emphasis added] meant they subsequently walked more slowly when leaving the room and had a poorer memory of the room. In other words, they had been 'primed' with an elderly stereotype and behaved accordingly.⁴⁸³

One study found that minimum repayment information influenced the size of hypothetical repayments.⁴⁸⁴ Another study tested whether risk attitudes can be primed.

⁴⁸¹ Ibid; Aparna Dalal and Jonathan Morduch, 'The Psychology of Microfinance' (Microinsurance Paper No 5, International Labour Organization, 2009), 6.

⁴⁸² Aparna Dalal and Jonathan Marduch, 'The Psychology of Microinsurance: Small Changes Can make a Surprising Difference' (Briefing Note, International Labour Organization, September 2010), 2.

⁴⁸³ Financial Services Authority, *Financial Capability: A Behavioural Economics Perspective* (2008) <http://www.cfebuk.org.uk/pdfs/20100713_transforming_financial_behaviour.pdf>, 31.

⁴⁸⁴ Ibid, 31.

The study found that priming can have significant effects on risk preferences, and that subjects can remain unaware of this manipulation unless their attention is drawn to it.⁴⁸⁵

Merely asking a person whether he or she intends to take a particular action has been shown to act as a prime to take that action. Thaler and Sunstein refer to this influence as the “mere measurement effect”:

The ‘mere measurement effect’ refers to the finding that when people are asked what they intend to do, they become more likely to act in accordance with their answers.⁴⁸⁶

Cass and Sunstein also refer to the influence of the mere measurement effect on the purchase of products:

A study of a nationally representative sample of more than forty thousand people asked a simple question: Do you intend to buy a new car in the next six months? The very question increased purchase rates by 35%.⁴⁸⁷

Similarly, a person will be more inclined to take an action where certain obstacles are removed. Recall that motivation to take action is an important attribute of a financially competent person, but that accessibility and convenience often dictate where a person purchases financial products, and which financial products are purchased. Related to priming is the psychological concept of “channel factors”. This can explain suboptimal financial behaviour, where a product may be less financially efficient but more convenient. Channel factors can block or motivate behaviour:

Kurt Lewin (1951) coined the term “channel factors,” suggesting that certain behaviors can be facilitated by the opening up of a channel (e.g., an a priori commitment or a small, even if

⁴⁸⁵ Hans-Peter Erb, Antoine Bioy and Denis Hilton, ‘Choice Preferences Without Inferences: Subconscious Priming of Risk Attitudes’ (2002) 15 *Journal of Behavioral Decision Making* 251, 257.

⁴⁸⁶ Richard Thaler and Cass Substein, *Nudge* (2008): Penguin, London, 76.

⁴⁸⁷ *Ibid.*

reluctant, first step), whereas other behaviors can be blocked by the closing of a channel (e.g., the inability to communicate easily or the failure to formulate a simple plan).⁴⁸⁸

The opportunities to influence, and block, certain financial behaviours are numerous. If channel factors can push a consumer in a particular direction, one suggestion is to remove barriers to achieving optimal financial results, such as making the opening of bank accounts easier.⁴⁸⁹

7 Bias and limited cognitive ability

Bias can result from limitations in cognitive ability due to feeling overwhelmed with large amounts of information. This can cause people to be biased towards choosing default options. Such limitations are shared by everybody, financial advisors and unsophisticated investors alike.

(a) Information overload

A cognitive response to overly complex financial products is information overload. Investors are commonly overwhelmed with too much information,⁴⁹⁰ and as a result either lack the motivation to make a rational choice or simply choose a default. Too many options can result in “choice overload”, which in turn can result in procrastination or inaction due to feelings of being overwhelmed.⁴⁹¹ The results from the study conducted by Grinblatt and Keloharju,⁴⁹² in which a choice of over 400 retirement plans resulted in default choices by 9 in 10 investors is evidence that information overload results in inertia and lack of motivation.⁴⁹³

One study in particular shows that the simplification of financial products increases their take up, and as a result this increases financial participation. This reaffirms the

⁴⁸⁸ Marianne Bertrand, Sendhil Mullainathan and Eldar Shafir, ‘Behavioral Economics and Marketing in Aid of Decision Making Among the Poor’ (2006) 25 *Journal of Public Policy and Marketing* 8.

⁴⁸⁹ *Ibid*, 13.

⁴⁹⁰ Lauren Willis, ‘Against Financial Literacy Education (2008) 94 *Iowa Law Review* 197, 228-9.

⁴⁹¹ Aparna Dalal and Jonathan Morduch, ‘The Psychology of Microfinance’ (Microinsurance Paper No 5, International Labour Organization, 2009), 3.

⁴⁹² M Grinblatt and M Keloharju, ‘What Makes Investors Trade’ (2001) 56 *Journal of Finance* 589.

⁴⁹³ ASIC has found that a barrier to investing is information and choice overload. See: Australian Securities and Investments Commission (ASIC), *Australian Investors: At A Glance* (Report 121, April 2008).

proposition that inertia in financial markets results from the complexity of financial products, rather than a lack of financial literacy by itself. Both complex products and financial illiteracy can cause inertia. Bertrand, Karlan, Mullainathan, Shafir and Zinman show that fewer examples of loan concepts in marketing materials (principal, interest rate and maturity) increased the likelihood that a consumer would apply for a loan. In the study, people who received just one example of these concepts were more likely to apply for a loan than people who received three examples.⁴⁹⁴

(b) Particulars and defaults

People tend to adhere to and cooperate with pre-set options, particularly where too many options are available. Defaults are those options that are selected if the individual does not make an active choice. The Consumer Financial Education Body in the UK explains the power of defaults:

The best examples of defaults have come from financial behaviour. Madrian and Shea (2001) consider the effect of a change in a default on the contribution rates in retirement savings in the U.S. Before the change, the default is non participation in retirement savings; after the change, the default is participation at 3% in a money market fund. In both cases, employees can override the default, so it remains libertarian. Madrian and Shea (2001) find that the change in default has a very large impact: one year after joining the company, the participation rate in 401(k)s (the retirement vehicle) is 86% for the treatment group and 49% for the control group.⁴⁹⁵

In another study, despite the availability of 456 retirement plans, 92% of new participants in a retirement chose the default plan.⁴⁹⁶ The important feature of this study may well be the very large number of plans available, because it has been shown that greater choice creates lower motivation. However, defaults are nonetheless powerful mental shortcuts, whether they are caused by market complexity, lack of knowledge and understanding, or lack of motivation.

⁴⁹⁴ Marianne Bertrand, Dean Karlan, Sendhil Mullainathan, Eldar Shafir and Jonathan Zinman, 'What's Advertising Content Worth? Evidence from a Consumer Credit Marketing Field Experiment' (2010) 125 *Quarterly Journal of Economics* 263.

⁴⁹⁵ Financial Services Authority, *Financial Capability: A Behavioural Economics Perspective* (2008) <http://www.cfefuk.org.uk/pdfs/20100713_transforming_financial_behaviour.pdf>, 28-29.

⁴⁹⁶ Ibid.

(c) Informational asymmetry and computational resources: the limitation of cognitive processes

Everybody is prone to suboptimal behaviour due to mental shortcuts, including professionals. Informational asymmetry is an important element of the market, which causes professionals to have better skills and information in relation to career specific tasks than people who are not in the same profession. Specialists and sophisticated investors are however prone to mental shortcuts, and to making errors. As a result, computational resources and statistics may be more reliable than specialist human judgment. Van de Venter and Michayluk found that even financial advisors were prone to overconfidence:

Australian financial planners are not immune to overconfidence in their knowledge and ability to predict outcomes of financial markets. Both the narrow range of predictions and substantial number of inaccurate predictions suggests an overall bias towards overconfidence.⁴⁹⁷

Both Willis and researchers from Princeton University argue that even sophisticated investors lack the computational resources necessary for rationality that is unhindered by human error, and therefore are prone to human error when making decisions.⁴⁹⁸ In fact, studies have shown that statistical linear models can produce predictions which are just as accurate, or more accurate, than clinical judgment.⁴⁹⁹ This further highlights the limitations of human processing and the unreliability of people and in particular the limitations of sophisticated investors and even specialists. Human judgment therefore has limitations irrespective of the level of sophistication of the judge.

⁴⁹⁷ Gerhard van de Venter and David Michayluk, 'An Insight into Overconfidence in the Forecasting Abilities of Financial Advisors' (2008) 32 *Australian Journal of Management* 545, 554.

⁴⁹⁸ Ibid.

⁴⁹⁹ Andrew Baum, *Cambridge Handbook of Psychology, Health and Medicine* (1997), 23.

8 *Bias, property and the endowment effect*

Consumers tend to attach higher than market values to products they own, or that are given to them. This is known as the endowment effect. Schmid refers to the “endowment effect” as an example of behaviour changing with experience.⁵⁰⁰ Schmid explains:

Once a good is experienced, its value changes and willingness to pay differs from willingness to accept ... It is also an example of a framing effect and social capital and loss aversion.⁵⁰¹

An item is more attractive to a person if they have possibility of owning it. This means that people tend to value a good more favourably once property rights to it have been established. One study found that an item was considered to be worth more to those subjects who started with that item (in this case, pens) than those who started with money.⁵⁰² This goes against traditional economic theory and the assumption that value is assessed by people’s willingness to pay, and that no bond with a product should increase its worth. Politser explains the endowment effect and its connection with the status quo effect and loss aversion:

... when people actually possess an item, such as a coffee mug, they perceive the status quo as “having the mug”. They are generally averse to losing it and, if asked to sell it usually charge more than the price in store. But if people do not initially possess the item and perceive the status quo as “not having the mug”, then they are often unwilling to pay the store’s price.⁵⁰³

The desirability of a product appears to increase where that product has been owned, and a subsequent bond appears to have been produced. This may explain the irrational activity of brand loyalty where a better value item is available, but experience with the brand fuels favouritism towards that brand thereafter.

⁵⁰⁰ Ibid, 41.

⁵⁰¹ Ibid, 41.

⁵⁰² Daniel Kahneman, Jack Knetsch and Richard Thaler, ‘Anomalies: The Endowment Effect, Loss Aversion and the Status Quo Bias’ (1991) 5 *The Journal of Economic Perspectives* 193, 197.

⁵⁰³ Peter Politser, *Neuroeconomics* (2008): Oxford University Press, New York, 84.

9 Bias and cost

Consumers are lured to paying nothing for a gain. The “value of zero” in behavioural economics shows that consumers are attracted to “free” goods or offers that have “free” products or services attached to them. This bias reflects the success of “2 for 1” offers, which provide two products if a consumer buys one.

A number of studies show that ‘items given away for free are strongly preferred to alternatives with a positive cost and higher net benefit’.⁵⁰⁴ Much research documents the tendency of people to sacrifice long term gain due to high short term expense, and instead prefer low short term expense to lower long term gains. In the end, the person is worse off. This is important in finance because products with “free” aspects or benefits may be perceived to be more desirable than more “costly” (but better value, in the long term) products.

B Heuristics

In behavioural economics, “heuristics” have predominately indicated the mental processes that reduce cognitive effort, ‘or ... generate ‘some’ (not necessarily ‘good’) solution to complex problems’.⁵⁰⁵ Therefore as the complexity of the decision increases, heuristics will increasingly be used.⁵⁰⁶ These heuristics simplify and speed up decision making processes, and can therefore be described as mental shortcuts.⁵⁰⁷ The problem is that such short cuts may result in some errors, known as bias.⁵⁰⁸

⁵⁰⁴ Aparna Dalal and Jonathan Marduch, ‘The Psychology of Microinsurance: Small Changes Can make a Surprising Difference’ (Briefing Note, International Labour Organization, September 2010), 3.

⁵⁰⁵ Anna Grandori, ‘A Rational Heuristic Model of Economic Decision Making’ (2010) 22 *Rationality and Society* 477, 480.

⁵⁰⁶ Barbara Kahn and Jonathan Baron ‘An Exploratory Study of Choice Rules Favored for High-Stakes Decisions’ (1995) 4 *Journal of Consumer Psychology* 305.

⁵⁰⁷ Tversky A & Kahneman D (1974) Judgment Under Uncertainty: Heuristics and Biases (1974) 185 *Science* 1124; Andrew Reeson and Simon Dunstall, ‘Behavioural Economics and Complex Decision Making’ (CMIS Report No 09/110, CSIRO, 2009) <http://taxreview.treasury.gov.au/content/html/commissioned_work/downloads/CSIRO_AFTS_Behavioural_economics_paper.pdf>, 10.

⁵⁰⁸ Andreas Oehler and Christina Werner, ‘Saving for Retirement – A Case for Financial Education in Germany and UK? An Economic Perspective’ (2008) 31 *Journal of Consumer Policy* 253, 257.

The following are heuristics that show in judgments and decisions: (1) anchoring and adjustment; (2) representativeness; (3) availability; (4) the status quo effect; (5) contrast effects; (6) reactive devaluation;⁵⁰⁹ the (7) recognition heuristic and familiarity/home effect; and (8) cognitive dissonance.

1 *Anchoring and adjustment*

When people consider the price or value of products they do so with a comparison or estimate in mind, the anchor. In adjusting their considerations with new information, each adjustment is tainted by the initial anchor. Therefore, people sometimes cannot get a true sense of the object because the anchor continues to influence their view of it.

The anchor is a preliminary estimate. Subsequent information considered relevant adjusts this preliminary estimate. Preliminary estimates always influence following estimates, such that investments are influenced by initial expectations which further research will always be tainted by.⁵¹⁰ Epley and Gilovich explain:

Because people evaluate hypotheses by trying to confirm them (Klayman & Ha, 1987), the comparative assessment generates information disproportionately consistent with the anchor value, thereby biasing the subsequent judgment.⁵¹¹

Marketed prices can cause an anchor to be created. People may associate that marketed price with an accepted industry price and as a result establish an anchor. Sales and discounts below the recommended retail price may cause that anchor to be satisfied.⁵¹² The primed marketed price therefore has a powerful impact on anchoring, because the price influences a consumer's willingness to pay and the perception of market value. The

⁵⁰⁹ See: Russell Horobkin and Chris Guthrie, 'Heuristics and Biases at the Bargaining Table' (2004) 87 *Marquette Law Review* 795.

⁵¹⁰ Allan Schmid, *Conflict and Cooperation: Institutional and Behavioural Economics* (2004): John Wiley & Sons, United States, 39.

⁵¹¹ Nicholas Epley and Thomas Gilovich, 'The Anchoring and Adjustment Heuristic' (2006) 17 *Psychological Science* 311, 312.

⁵¹² Manoj Thomas and Vicki Morwitz, 'Heuristics in Numerical Cognition: Implications for Pricing' in Vithala Rao, *Handbook of Pricing Research in Marketing* (2009): Edward Elgar Publishing, Massachusetts, 141.

heuristic of anchoring provides a mental shortcut that may overlook market value, and instead be appeased by sales and discounts.

In times of uncertainty people may “anchor” into known variables, and then adjust until an acceptable result is reached. Insufficient adjustment causes bias, and accordingly error. These are referred to as adjustment based anchoring biases.⁵¹³ Increased effort and motivation to shop around can mitigate insufficient adjustment, and the bias and error that results:

... adjustment is effortful, and so anything that increases a person’s willingness or ability to seek more accurate estimates tends to reduce the magnitude of adjustment-based anchoring biases.⁵¹⁴

Insufficient adjustments cause error because the adjustments cease once an acceptable result is reached, thereby ceasing the search for the *most* acceptable result. Given the cognitive effort involved in anchoring and adjustment, a mental shortcut involves reducing the adjustment phase, or repeating that phase. A useful example is the cognitive effort in shopping around. The tendency to not undertake comparison shopping may be influenced by lack of motivation prompted by a desire to avoid the effort of adjustment, and therefore the adjustment based anchoring bias sets in.

2 Representativeness

The representativeness heuristic eases cognitive processes when the object of attention is unknown. Therefore, this unknown variable is made more familiar by finding a comparable known variable, and assuming that the probabilities and results will be similar for the unknown variable. This results from associating a similar variable with another, and attributing aspects of a known variable to the unknown variable. The representative heuristic is best explained by Tversky and Kahneman:

⁵¹³ Nicholas Epley and Thomas Gilovich, ‘The Anchoring and Adjustment Heuristic’ (2006) 17 *Psychological Science* 311.

⁵¹⁴ *Ibid*, 316.

What is the probability that object A belongs to class B? What is the probability that event A originates from process B? What is the probability that process B will generate event A? In answering such questions, people typically rely on the representativeness heuristic, in which probabilities are evaluated by the degree to which A is representative of B, that is, by the degree to which A resembles B. For example, when A is highly representative of B, the probability that A originates from B is judged to be high. On the other hand, if A is not similar to B, the probability that A originates from B is judged to be low.⁵¹⁵

Tversky and Kahneman conclude that this approach to probability ‘leads to serious errors’.

The first error identified which is relevant to finance products is an insensitivity to prior probability of outcomes, such that these probabilities are neglected.⁵¹⁶ This hypothesis was tested in an experiment where prior probabilities were manipulated. Prior probabilities were manipulated by providing a sample of people with personality descriptions of individuals, taken from a group of 100 professionals comprising engineers and lawyers. With these descriptions in mind, the sample was asked to guess whether these were descriptions of lawyers or engineers. Two experimental conditions existed, the first being a group of 70% lawyers and 30% engineers, and the second being a group of 70% engineers and 30% lawyers. Using probability and Baye’s rule, the descriptions were more probable to be lawyers if taken from the first condition, and if taken from the second condition, they were more likely to be engineers. Probability was ignored by the sample. Tversky and Kahneman found that:

In a sharp violation of Baye’s rule, the subjects in the two conditions produced essentially the same probability judgments. Apparently, subjects evaluated the likelihood that a particular description belonged to an engineer rather than to a lawyer by the degree to which this description was representative of the two stereotypes, with little or no regard for the prior probabilities of the categories.⁵¹⁷

⁵¹⁵ Amos Tversky and Daniel Kahneman, ‘Judgment Under Uncertainty: Heuristics and Biases’ (1974) 185 *Science* 1124, 1124.

⁵¹⁶ *Ibid.*

⁵¹⁷ *Ibid.*, 1124-1125.

Prior probabilities were used correctly by the group when no information was provided. Without the personality descriptions, the group judged the probability that the people were engineers or lawyers according to probability.⁵¹⁸ Worthless information caused prior probabilities to be ignored.⁵¹⁹

This finding indicates that people are prone to having rational judgment obscured by stereotype, and accordingly they make biased choices and conclusions. The tendency to gamble and take risks can also be explained by this heuristic, because good luck is associated with other variables linked with gambling and risk taking. This is particularly important in marketing which creates associations between desirable factors, and the product in question.

The second error relevant to financial products is that this heuristic creates misconceptions of chance.⁵²⁰ This relates to the findings that people tend to feel that chance must “correct” itself, and be random and fair. Tversky and Kahneman use two examples to explain this misconception. First, when considering the tossing of a coin for heads or tails, ‘people regard the sequence H-T-H-T-T-H to be more likely than the sequence H-H-H-T-T-T, which does not appear random. Also, the sequence H-H-H-H-T was deemed unlikely as it was not fair. Second, the gambler’s fallacy can be explained by this heuristic, such that if in roulette the ball falls on black a number of times, people will expect it to fall next on red. Tversky and Kahneman explain:

Chance is commonly viewed as a self-correcting process in which a deviation in one direction induces a deviation in the opposite direction to restore the equilibrium. In fact, deviations are not “corrected” as a chance process unfolds, they are merely diluted.⁵²¹

Irrational activity in share trading can therefore be explained by this error, where people follow a downturn in the market expecting a surge, only to incur losses because objective criteria were reduced to a game of chance. The gamblers fallacy tends to result in

⁵¹⁸ Ibid, 1125.

⁵¹⁹ Ibid.

⁵²⁰ Ibid. Insensitivity to sample size is an additional error identified by Tversky and Kahneman.

⁵²¹ Ibid.

investors over-inferring short sequences, leading to ‘faulty predictions about the future’.⁵²²

Irrational and suboptimal behaviour concerning share trading can also be explained by the third error identified by Tversky and Kahneman. This error is insensitivity to predictability.⁵²³ When people need to make numerical predictions concerning a stock, these predictions are often made by representativeness. For example, future profits will be linked with the existing performance of a company.

The fourth error identified by Tversky and Kahneman was that a good fit between two variables creates unwarranted confidence. This confidence gives the choice the illusion of validity. As a result, a good match creates a mental confirmation that the predication of the unknown variable, based on the known variable, is accurate. This belief will be held despite knowledge to the contrary, that reliance on the known variable is in fact unreliable.⁵²⁴

The fifth error is that the representativeness heuristic creates misconceptions about regression.⁵²⁵ Extreme outliers have a tendency to regress towards the mean. However, people intuitively link future actions to a previous action. This may produce inaccurate predications about financial products based on their past performance, despite regression and other information which may indicate a regression to the mean. Therefore, a product appears to be tainted by past performance even where key aspects of the product are altered.

⁵²² Kent Baker and John Nofsinger, ‘Psychological Biases of Investors’ (2002) 11 *Financial Services Review* 97, 106.

⁵²³ Amos Tversky and Daniel Kahneman, ‘Judgment Under Uncertainty: Heuristics and Biases’ (1974) 185 *Science* 1124, 1126.

⁵²⁴ *Ibid.*

⁵²⁵ *Ibid.*

3 Availability

To ease cognitive pressure, people will sometimes refer to familiar objects when assessing an unfamiliar object, or similar past experience to predict the outcome of an event. This describes the mental shortcut used to make correlations between seemingly similar objects or scenarios.

Experiencing vivid, salient and memorable information is much more powerful in influencing behaviour than other stimuli, even when better information is subsequently provided. The heuristic of availability has been explained as follows:

Availability concerns situations in which people assess the frequency of a class, or the probability of an event, by the ease with which instances or occurrences are called to mind (i.e: in assessing the likelihood of lung cancer, a person might recall instances among family and friends).⁵²⁶

Given that availability may be influenced by more than frequency, certain predictable biases result. This stems from the fact that a diverse range of stimuli influence a prediction of probability, and these can be impacted by salience, or an infrequent occurrence which was particularly memorable thereby having the brush of importance about it.

The first error produced by availability and relevant to finance is due to the irretrievability of information. An event that is easily retrieved, more memorable or more salient will ‘appear more numerous than a class of equal frequency whose instances are less retrievable’.⁵²⁷ This is important in finance, because a particularly memorable loss will make that loss appear more numerous, thereby resulting in an irrational assumption that a connected asset (through representativeness) will be suboptimal.

The second error relevant to finance is imaginability, which shares many aspects with framing. That is, while framing concerns how a product is portrayed, imaginability

⁵²⁶ Andrew Baum, *The Cambridge Handbook of Psychology, Health and Medicine* (1997), 23.

⁵²⁷ Amos Tversky and Daniel Kahneman, ‘Judgment Under Uncertainty: Heuristics and Biases’ (1974) 185 *Science* 1124, 1127. Please also see biases due to the effectiveness of a search set.

concerns how that product is thought of, such that if high risks are vividly portrayed then the venture will appear exceedingly risky. This occurs even if the perceived risks do not reflect their actual likelihood. In contrast, risk may be significantly underestimated where ‘dangers are difficult to conceive of, or simply do not come to mind’.⁵²⁸

The third error with relevance to finance is illusory correlation. Facts strongly associated with one another create assumptions about correlation, even where this correlation does not exist.⁵²⁹ For example, financial literacy has been correlated with increased optimal financial behaviour in the form of savings, even where other reasons for this behaviour exist such as wealth and income. Given that wealth and income can create improved literacy, the correlation between literacy and optimal behaviours like saving can be illusory.

4 The status-quo effect

The status quo effect explains people’s tendency to be biased towards the status quo, unless compelling reasons exist to change their thinking. Kahneman, Knetsch and Thaler explain:

One implication for loss aversion is that individuals have a strong tendency to remain at the status quo, because the disadvantages of leaving it loom larger than advantages.⁵³⁰

Drawing from loss aversion, the status quo effect reflects the desire to continue with what is common and known. This may reflect inertia in the financial markets, and well as using defaults in selecting financial products, such as insurance and superannuation.

⁵²⁸ Ibid, 1128.

⁵²⁹ Ibid, 1128.

⁵³⁰ Daniel Kahneman, Jack Knetsch and Richard Thaler, ‘Anomalies: The Endowment Effect, Loss Aversion and the Status Quo Bias’ (1991) 5 *The Journal of Economic Perspectives* 193, 197-198.

5 *Contrast effects*

The perception of an individual can be manipulated such that an object is perceived to be more favourable than it is, by first showing that person a less desirable object. This is known as “contrast effects”. A real estate agent may show a potential buyer a less attractive house to make another appear more desirable. Inundated with external information, the brain may use a mental shortcut to compare the two houses without the context of other options. This may display limited mental processing capacity, and a lack of ability to compare with precision many objects. Kelman, Rottenstreich and Tversky provide the following definition of contrast effects, as it relates to products:

... the same product may appear attractive on the background of less attractive alternatives and unattractive on the background of more attractive ones.⁵³¹

The results of studies reveal that people do not choose products independently of available options presented to them. As a result, suboptimal decisions may occur where unattractive alternatives fill the backdrop. The fact that many people do not undertake comparison shopping for financial products makes them more prone to contrast effects. This is because the most attractive option in a set of alternatives will not necessarily be the best option in the market although it will be perceived to be the best option available.

6 *Reactive devaluation*

Reactive devaluation is the automatic inclination to discount the ideas of adversaries.⁵³² It saves the brain from processing all the information and considering the merits of the information, and instead categorizes the views of an adversary as hostile or inferior. This process causes the views to be discounted, or devalued. As a result, personal feelings cloud rational judgment about the ideas, and this can extend to ideas about finance. Professional advice can counter personal heuristics, such as reactive devaluation.

⁵³¹ Mark Kelman, Yuval Rottenstreich and Amos Tversky, ‘Context-Dependence in Legal Decision Making’ in Cass Sunstein (ed), *Behavioural Law & Economics* (2000), 61-62.

⁵³² Randall Kiser, *Beyond Right and Wrong: The Power of Effective Decision Making for Attorneys and Clients* (2010), 104.

7 Recognition heuristic and familiarity/home effect

People tend to prefer recognised objects to objects that are not recognised. Accordingly, people attach higher value to these recognised objects.⁵³³ This heuristic displays the power of marketing, and familiarity with specific financial products and services. Value may be attached to financial products due to recognition and familiarity, thus prompting an acquisition of a product which may be less financially efficient than a less recognised product.

In relation to investing, the recognition and familiarity heuristic has the effect of making a portfolio of shares of familiar companies seem less risky than an unfamiliar, even diversified, portfolio of shares of unfamiliar companies. The heuristic can result in a home bias whereby ‘investors tend to buy the stocks of companies that have a local or regional business presence’. As a result, the opportunity to realise greater gains are lost:

Investors also buy a disproportionate amount of securities from their country, despite the well-documented gains from international diversification.⁵³⁴

8 Cognitive dissonance

One heuristic that explains the overconfidence and sunk costs bias in investing is cognitive dissonance. Cognitive dissonance helps explain suboptimal investor activity in relation to retaining a poorly performing financial product. Baker and Nofsinger explain:

Cognitive dissonance is the inconsistent mental state that precedes the adjustment process. That is, people tend to ignore, reject, or minimize any information that conflicts with a particular belief.... An investor’s brain will reduce psychological pain by adjusting the beliefs about the success of past investment choices. That is, investors may remember their past performance as better than it actually was... people want to believe that their investment decisions are good. In the face of

⁵³³ Daniel Goldstein and Gerd Gigerenzer, ‘Models of Ecological Rationality: The Recognition Heuristic’ (2002) 109 *Psychological Review* 75.

⁵³⁴ Kent Baker and John Nofsinger, ‘Psychological Biases of Investors’ (2002) 11 *Financial Services Review* 97, 101.

evidence to the contrary, the brain's defense mechanisms filter contradictory information and alter the recollection of the decision.⁵³⁵

The desire to reduce dissonance, uncertainty and discomfort from conflicting beliefs, results in biased options that reinforce already held beliefs and actions. This mental shortcut supports a number of biases and suboptimal decisions, such as prolonging an unprofitable venture or sunk costs.

VI CONCLUSION

Financial behaviour is commonly considered to be based on rationality. It is often assumed in financial literacy research and policy that financial understanding and knowledge leads to optimal consumer decisions, and that lack of financial knowledge and understanding leads to suboptimal consumer decisions. The research summarised in this part shows that suboptimal consumer decisions that the literature identifies as stemming from financial illiteracy, such as inertia and lack of savings, can also be caused by personal, social and psychological factors.

Cognitive ability and intelligence will influence decision making. Given that financial success has been linked with numerical and mathematical ability, it is evident that much of the optimal behaviours associated with financial literacy can in fact be attributed to natural and endowed ability, knowledge and skills.

Social factors also influence behaviour in a powerful way. The findings of this part of the research report show that socio-demographics are proxies for wealth and income levels, which determine social position and access to social capital and networks. Access to social networks provides the contacts and information necessary to make decisions. This may be favourable or unfavourable, depending on the structure of the network. In addition, other social factors such as the complexity of markets and financial products, and culture and short term consumerism are shown to influence behaviour, and result in many behaviours considered to be the result of financial illiteracy.

⁵³⁵ Kent Baker and John Nofsinger, 'Psychological Biases of Investors' (2002) 11 Financial Services Review 97, 101.

Very significantly, people behave in a predictably irrational fashion. Behavioural economics explains the mental shortcuts people use to cope with the large amount of information in the environment. These mental short cuts are cognitive coping mechanisms which ensure the brain is not overloaded with information. The two main mechanisms used are biases and heuristics. These biases and heuristics, acting as mental shortcuts, result in errors such that people behave irrationally, and as a result sub-optimally. However, this irrationality is predictable. Many suboptimal behaviours result from predicably irrational behaviour stemming from biases and heuristics, which are common among all people. Therefore, financial education and other financial literacy policies should consider this predictably irrational behaviour, to more accurately pin point the cause of suboptimal behaviour and, in turn, offer the most appropriate solutions.

While it is true that lack of financial literacy can result in suboptimal consumer behaviour, understanding other causes of suboptimal behaviour will help set the foundation for development of the most effective responses. This part of the research report shows that suboptimal behaviours initially attributed to financial illiteracy are also caused by personal, social, economic, psychological and cognitive factors.

VII APPENDIX TO PART D

This appendix links suboptimal behaviours considered in the literature and surveys to be the result of financial illiteracy with social, economic, psychological and cognitive causes.

Table 1: Linking Flaws in Behaviour with Social and Psychological Causes

Suboptimal behaviour	Possible social/economic cause(s)	Possible psychological/ cognitive cause(s)
Not reading terms	<ul style="list-style-type: none"> •Market complexity •Product complexity •Unnecessarily complex and verbose contracts 	<ul style="list-style-type: none"> •Cognitive (in)ability •(Lack of) intelligence •(Lack of) motivation •Salience, or being psychologically attracted to some features while overlooking others •Information overload •Status quo effect •Trust and loyalty •Heuristics, such as the familiarly and home effect
Not understanding terms/being bound by unfair terms	<ul style="list-style-type: none"> •Market complexity •Product complexity •Use of unnecessarily complex financial terms of art •Unnecessarily complex and verbose contracts •(Lack of) formal education •Poverty and lack of social capital, causing lack of 	<ul style="list-style-type: none"> •Salience/overlooking terms •(Lack of) intelligence •(Lack of) motivation •Framing •Information overload •Status quo bias •Heuristics

	<p>experience</p> <ul style="list-style-type: none"> •Informational asymmetry 	
<p>Unmanageable credit card debt and debt</p>	<ul style="list-style-type: none"> •Poverty •Low income •Unemployment •Culture of consumerism •Financial exclusion 	<ul style="list-style-type: none"> •Present-biased time preferences •Dynamic inconsistency •Narrowly framed mental accounting, causing compartmentalization •Not considering relevant reference points •Framing of marketing or credit card interest payment information •Overconfidence in the ability to repay or to gain future cash flow •Lack of self control •Self serving evaluations •Sunk costs effect •Wants •Ego •Short-sightedness •Heuristics, such as anchoring, adjustment, representativeness (ie: gambler's fallacy) and availability •Disposition effect (in relation to losses in share trading)
<p>Unnecessarily incurring fees, for not paying debt on time etc</p>	<ul style="list-style-type: none"> •Poverty •Low income •Unemployment •Culture of consumerism 	<ul style="list-style-type: none"> •Present-biased time preferences •Dynamic inconsistency •Not considering relevant reference points •Framing •Overconfidence •Lack of self control

		<ul style="list-style-type: none"> •Adjustment •Self serving evaluations •Sunk costs •Cognitive dissonance •Wants •Ego •Short-sightedness •Heuristics, such as adjustment
Not considering key features of financial products	<ul style="list-style-type: none"> •Poverty, resulting in lack of exposure to finance •Product complexity •Too many products •Product features explained in an unnecessarily complex way •The product disclosure statement is too detailed •Informational asymmetry 	<ul style="list-style-type: none"> •Salience, and overlooking some important clauses and features •Mental accounting •Framing •Overconfidence •Ambiguity aversion •Inertia •Information overload •Heuristics •Trust and loyalty •Heuristics such as representativeness (using past performance to indicate future performance) or the adjustment based anchoring bias
Not undertaking comparison shopping	<ul style="list-style-type: none"> •Market complexity •Product complexity •Too many products 	<ul style="list-style-type: none"> •Laziness, lack of motivation •(Lack of) cognitive ability and numeracy •Trust and loyalty •Ambiguity aversion •Inertia •Information overload •Heuristics, such as the familiarity and

		<p>home bias, or the adjustment based anchoring bias</p> <ul style="list-style-type: none"> •Information asymmetry
Not reviewing already owned products	<ul style="list-style-type: none"> •Social networks •Product complexity 	<ul style="list-style-type: none"> •Trust and loyalty •Defaults •Heuristics •Status quo bias •The endowment effect •Confirmatory bias •Heuristics, such as self-serving evaluations •Adjustment based anchoring bias
Purchasing unnecessary products	<ul style="list-style-type: none"> •(Lack of) formal education •Social networks/informal advice 	<ul style="list-style-type: none"> •Time inconsistent preferences •Framing •Defaults •Heuristics •Contrast effects •Inexperience •Norms •The spotlight effect
Not considering fees and charges	<ul style="list-style-type: none"> •Market complexity •Product complexity •Hidden fees and charges, in overly complex contracts 	<ul style="list-style-type: none"> •Framing •Hyperbolic discounting •Anchoring
Not considering investment objectives	<ul style="list-style-type: none"> •Social networks •Crowd effect/tipping point 	<ul style="list-style-type: none"> •Cognitive dissonance •Sunk costs •Ego •Pride •Disposition effect
“Short	<ul style="list-style-type: none"> •Culture of consumerism 	<ul style="list-style-type: none"> •Present-biased time preferences

sightedness”		<ul style="list-style-type: none"> •Dynamic inconsistency •The “value of zero”
“Compartment alization” of money	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •Mental accounting
Do not receive or seek independent advice	<ul style="list-style-type: none"> •Poverty •Low income •(Lack of) formal education •Social networks 	<ul style="list-style-type: none"> •Ego •Self serving evaluations •Overconfidence •Information overload •Ambiguity aversion
Not evaluating the credibility of an advisor’s information, not seeking consensus, or not critiquing advice	<ul style="list-style-type: none"> •Time asymmetry •Skill asymmetry •Poverty •Low income 	<ul style="list-style-type: none"> •Defaults •Trust and loyalty •Information overload
Not understanding financial advice	<ul style="list-style-type: none"> •Market complexity •Product complexity •Unnecessarily complex advice •Poverty, due to lack of exposure to finance •(Lack of) formal education 	<ul style="list-style-type: none"> •(Lack of) cognitive ability and intelligence •Innumeracy or lack of arithmetic skills
Using non-professional sources of information, such as family	<ul style="list-style-type: none"> •Social networks •Wealth 	<ul style="list-style-type: none"> •Trust and loyalty •Heuristics, such as the familiarity and home bias

and friends		
Not gathering or reviewing information	<ul style="list-style-type: none"> •Product complexity •Market complexity 	<ul style="list-style-type: none"> •Trust and loyalty •(Lack of) motivation
Not saving for the long term/ not budgeting	<ul style="list-style-type: none"> •Poverty •Low income •Culture of consumerism 	<ul style="list-style-type: none"> •Short-sightedness •Hyperbolic discounting •Heuristics, causing people to spend more than necessary •Wants •Time inconsistent preferences, and dynamic inconsistency •Ego
Making poor investments	<ul style="list-style-type: none"> •Lack of formal education 	<ul style="list-style-type: none"> •Disposition effect •Sunk costs effect •Heuristics and rules of thumb, such as the diversity heuristic •Self serving evaluations •Preference reversals and time inconsistent preferences •Recognition heuristic •Home effect •Representativeness heuristic, particularly related to share trading •Availability heuristic, relating to the illusory correlation error •Contrast effects •Cognitive dissonance
Inactivity in the markets	<ul style="list-style-type: none"> •Poverty •Low income •Product complexity 	<ul style="list-style-type: none"> •Loss aversion •Inertia •Preference reversals

	<ul style="list-style-type: none"> •Market complexity 	<ul style="list-style-type: none"> •Lack of propensity for risk in a market with low promised returns •Availability and representativeness heuristic (depending on previous experience) •Availability heuristic, particularly resulting in the bias of imaginability and the bias due to the irretrievability of information
Not buying insurance	<ul style="list-style-type: none"> •Poverty •Low income 	<ul style="list-style-type: none"> •Overweighting small probabilities •Mental accounting •Dynamic inconsistency

Part E – Methodology and Common Findings among Financial Literacy Surveys

I INTRODUCTION

Financial literacy surveys aim to measure financial literacy. This part examines the financial literacy surveys, to explain how financial literacy is measured and the flaws that exist in some of those surveys. These flaws cause the surveys to record results that do not accurately reflect true levels of financial literacy in the population. Avoiding these flaws is important to drafting a financial literacy survey that accurately measures levels of financial literacy. This part will also explain the methodology and common findings of the surveys.

II MEASURING FINANCIAL LITERACY AND FINANCIAL CAPABILITY

Financial literacy and financial capability can be measured using a number of methods.⁵³⁶ First, researchers have used custom designed instruments, such as surveys tailored for the specific study conducted.⁵³⁷ Second, general national benchmark surveys have been used in studies. Third, researchers use pre and post-test evaluations, which test financial literacy levels before and after a training program.⁵³⁸ For example, the SaversPlus program by ANZ and the study by Koenig both used pre and post-test evaluations.⁵³⁹

A Custom designed instruments and surveys

Most research and studies make use of data from surveys. The surveys assess the level of financial literacy of the respondents by using questions that test proficiency in the key competencies of financial literacy. Having discussed the proficiencies and key

⁵³⁶ David Remund, 'Financial Literacy Explicated: The Case for a Clearer Definition in an Increasingly Complex Economy' (2010) 44 *The Journal of Consumer Affairs* 276, 285ff.

⁵³⁷ Annamaria Lusardi and Olivia Mitchell, 'Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education' (2007) 42 *Business Economics* 35.

⁵³⁸ David Remund, 'Financial Literacy Explicated: The Case for a Clearer Definition in an Increasingly Complex Economy' (2010) 44 *The Journal of Consumer Affairs* 276, 290-291.

⁵³⁹ Lori Koenig, 'Financial Literacy Curriculum: The Effect on Offender Money Management Skills' (2007) 58 *Journal of Correctional Education* 43. The study by Koenig tested seventeen inmates in a prison aged 20 to 61, who voluntarily participated in financial literacy classes. Correct answers increased from 66% to 74%. The results shed light on the particular financial products that can be "demystified" through simple education.

competencies required, this part will discuss the basic structure of instruments that seek to measure financial literacy. In particular, this part points out some of the deficiencies in the surveys and proposes a useful model for assessing financial literacy.

The following factors have been shown to yield inaccurate survey results:

- A “one size fits all” approach that does not use variable specific scores;
- the use of self-assessments and subjective questions;
- complex questions containing no definitions; and
- not considering a “pass score” for financial literacy.

These factors are now discussed.

1 *Sub-topic and variable specific testing: staying away from “one size fits all”*

Researchers sometimes focus on particular subtopics for a particular demographic. For example, Lusardi and Mitchell undertook a health and retirement survey of early baby boomers. Surveying 1, 700 people,⁵⁴⁰ they covered the subtopics of budgeting, saving, borrowing and investing while also covering financial matters *specific* to health and retirement. These subtopics of borrowing, saving, budgeting and investing then act as vehicles which assess *aptitude* in managing aspects of personal finance rather than merely assessing broad knowledge.⁵⁴¹ Therefore, financial literacy surveys that yield accurate results ask questions specifically tailored for the audience. Other surveys which specifically test particular groups include the *Mercer 2006 Financial Literacy and Retirement Readiness Study* (workers), the *Jump\$tart Survey of the Financial Literacy of Young American Adults* (high school and tertiary students), the Australian’s *Understanding Money Women Understanding Money Survey* (women), the Investor Education Foundation’s *Financial Capability in the United States Study*, which included the *Military Survey* (military personnel) etc.

⁵⁴⁰ Ibid.

⁵⁴¹ David Remund, ‘Financial Literacy Explicated: The Case for a Clearer Definition in an Increasingly Complex Economy’ (2010) 44 *The Journal of Consumer Affairs* 276, 288-9.

The ineffectiveness of a “one size fits all” financial literacy measure further supports variable specific testing. A “one size fits all” measure overlooks particular strengths in certain stages of the life cycle, thereby attributing falsely poor “financial literacy scores” to certain demographics. Surveys should be tailored to suit different demographics, just as financial education should be suited to specific needs of different demographics.⁵⁴²

Variable specific testing can therefore provide richer data ‘and more meaningful insight than attempts at a general, all-inclusive financial literacy score’.⁵⁴³ Remund notes that:

Variable-specific testing may help researchers zero in on the most meaningful data. One study of Jump\$Start results revealed that for the financial decisions high school students most immediately face, formal instruction provided no boost in financial knowledge (Mandell and Schmid Klein 2007).⁵⁴⁴

This may be in contrast to other demographics that may benefit from such formal instruction.

2 *Subjective versus objective questions: overestimating financial literacy and competency*

Balancing financial knowledge with attitudes and *claimed* actions has been an important attribute in most surveys,⁵⁴⁵ but this method should be considered with caution. A survey should therefore test abilities connected with financial literacy and *actual* actions, rather than self assessments of financial capability alone. While financial literacy should include behaviour (including *attitudes*) as Kuzina argues,⁵⁴⁶ self assessments in financial literacy surveys should be approached with caution due to findings in most studies that people

⁵⁴² As to the argument relating to tailoring financial education, see: Sandra Huston, ‘Measuring Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 296, 310.

⁵⁴³ Ibid.

⁵⁴⁴ Ibid.

⁵⁴⁵ World Bank, *Financial Literacy Survey Questionnaire* (2008) <http://siteresources.worldbank.org/INTECAREGTOPPRVSECDEV/Resources/RU-WB_Financial_Literacy_Questionnaire.pdf>.

⁵⁴⁶ Olga Kuzina, ‘The Level of Financial Literacy of Russians: Before and During the Crisis of 2008-2009’ (Paper presented at the 30th CIRET Conference, New York, October 2010), 11.

tend to overestimate their abilities.⁵⁴⁷ There are therefore clear inconsistencies between consumer attitudes about their abilities, and consumer behavior.⁵⁴⁸ This is also reflected in the Financial Services Authority study *Levels of Financial Capability in the UK* which found that people who had an outlook that was not risky in fact invested in products that can be regarded as risky.

Self assessment scores are almost always higher than actual financial literacy scores. For example, the European Commission identified that ‘in an Australian survey, while two-thirds of respondents believed that they were financially literate, only around one quarter understood *compound interest*’.⁵⁴⁹ Similarly, Kuzina identified that Russians scored higher on self assessed financial ability than on objective financial literacy questions.⁵⁵⁰ Most surveys have similar results,⁵⁵¹ including, for example, those by the Investor Education Foundation.⁵⁵²

3 Measuring financial literacy

Surveys should explain the scoring used to assess whether a particular level of literacy is adequate. In particular, the surveys should use a spectrum that plots the strengths of the participants. Researchers must be mindful of differences in scoring used in different studies. Defining a “score” removes the risk that a “50” score in one study is assumed to be the same as a “50” score in another study, when in fact the studies use different

⁵⁴⁷ Investor Education Foundation, *Financial Capability in the United States* (2010) <<http://www.finrafoundation.org/resources/research/index.htm>>. However, van Rooij et al find that ‘there is a very strong correlation between objective and subjective literacy’. See: Maarten van Rooij, Annamaria Lusardi and Rob Alessie, ‘Financial Literacy and Stock Market Participation’ (Working Paper No 13565, National Bureau of Economic Research, 2007) <<http://www.nber.org/papers/w13565>>.

⁵⁴⁸ Ronald McQuaid and Valerie Egdell, ‘Financial Capability – Evidence Review’ (Final Report, Employment Research Institute – Edinburgh Napier University, 2010), 23.

⁵⁴⁹ European Commission (communication), *Financial Education* (COM/2007/0808 final) <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52007DC0808:EN:HTML>>.

⁵⁵⁰ Olga Kuzina, ‘The Level of Financial Literacy of Russians: Before and During the Crisis of 2008-2009’ (Paper presented at the 30th CIRET Conference, New York, October 2010), 5.

⁵⁵¹ National Foundation for Credit Counseling, *2010 Financial Literacy Survey* (2010), <<http://www.nfcc.org/NewsRoom/FinancialLiteracy/files2010/2010ConsumerFinancialLiteracySurveyFinalReport.pdf>>; Pirmin Fessler, Martin Schürz, Karin Wagner and Beat Weber, ‘Financial Capability of Austrian Households’ (2007) *Monetary Policy and the Economy* 50 <http://oenb.at/en/img/mop_2007_3_fessler_tcm16-69087.pdf>.

⁵⁵² Investor Education Foundation, *Financial Capability in the United States* (2009) <<http://www.finrafoundation.org/resources/research/p120478>>.

methods to reach those scores. The important question that must be addressed is: how do we measure financial literacy in the form of scores?

Huston explains that almost 90% of the 71 studies she reviewed ‘did not provide an indicator of whether a respondent was financially literate’.⁵⁵³ This means that while tests ‘scored’ participants, most did not indicate the level of score required for financial literacy. The remaining 10% or so of studies simply placed a threshold score below which participants were considered to “fail”, such as 60% for the Jump\$start survey.

While stating the importance of always having a correct answer on which to base a “score”, Kempson advocates “factor analysis” for surveys that use a large number of questions, or which combine knowledge based questions with other types of questions. Kempson explains:

Individual questions do not, however, give an overview of capabilities. For this, some form of scoring is required ... Simple arithmetic scores are appropriate for knowledge-based surveys that include questions with replies that are either correct or not. They are not, however, recommended for broad ranging surveys covering behaviour and attitudes as well and where questions have differing levels of importance in a score and may be measuring very different capabilities ... The most widely-used method, both for surveys of financial capability surveys and more generally for surveys to measure, for example, levels of deprivation or health, is known as factor analysis’ ... Factor analysis identifies questions that are correlated and therefore measure some underlying concept, or factor, and enables the analyst to create one or more new variables that can be used to reflect the much larger number of original variables entered into the analysis.⁵⁵⁴

Worthington explains the “scoring” used in the 2003 ANZ Survey. A scale made up of four options was available to respondents: very well, fairly well, not very well, or, not at all). Point scores ranged from +2 to -2, and the allocation of points depended on the selecting the most “financially literate” answer, which would receive a +2. Responses on a non-rating scale such as True/False answers were split +2 for correct answers, and -2

⁵⁵³ Sandra Huston, ‘Measuring Financial Literacy’ (2010) 44 *The Journal of Consumer Affairs* 296, 304.

⁵⁵⁴ Elaine Kempson, ‘Measuring Levels of Financial Literacy at an International Level – Appendix: Developing a Set of Core Questions’ (OECD, January 2010), 25.

for incorrect answers. After summing up the scores, respondents were placed into one of five quintiles, each used as ‘the dependant variable in a regression with demographic, socioeconomic and financial characteristics as predictors’.⁵⁵⁵

4 *Understanding survey questions*

Apart from the content of the questions and the scoring, the order of words which make up the questions was revealed to be important in a Dutch study.⁵⁵⁶ The authors make the point that widespread lack of financial literacy can also indicate that respondents did not understand the questions. That is, the low scores are due to not understanding the questions being asked, rather than understanding the question but answering it incorrectly. This raises the issue of guessing and random answers comprising many responses. To test this problem empirically, the authors:

... inverted the wording of questions and exposed two randomly chosen groups of respondents to the same question but with a different wording. [The authors] did so for three types of questions: A simple question about the riskiness of bonds versus stocks, a more difficult question about the riskiness of a company stock versus a stock mutual fund, and an even more complex question on the effect of interest rate changes on bond prices.⁵⁵⁷

The questions were in the following form, with different wording of the same question indicated by “a” and “b”:

- (1a) “*Stocks* are normally riskier than *bonds*”. True or false?
- (1b) *Bonds* are normally riskier than *stocks*. True or false?

This test helped assess whether responses are due to the difficulty of the question, or the structure of the question. The results show that for simple questions, such as the one on the riskiness of stocks as opposed to bonds, the respondents gave similar answers and the

⁵⁵⁵ Andrew Worthington, ‘Predicting Financial Literacy in Australia’ (2006) 15 *Financial Services Review* 59, 65.

⁵⁵⁶ Maarten van Rooij, Annamaria Lusardi and Rob Alessie, ‘Financial Literacy and Stock Market Participation’ (Working Paper No 13565, National Bureau of Economic Research, 2007) <<http://www.nber.org/papers/w13565>>.

⁵⁵⁷ *Ibid*, 10.

order of the question had no real impact. However, this is different for complex questions:

The pattern of answers changes dramatically when the order of the wording was inverted. For example, the number of correct answers doubles when respondents are asked whether “buying a company stock usually provides a safer return than a stock mutual fund” versus the same question with the inverted order: “buying a stock mutual fund provides a safer return than a company stock.”⁵⁵⁸

The assumption that more people may randomly guess the first option as the correct answer is made unlikely because this would lead to a lower rather than higher percentage of correct answers for that option. The findings therefore show that respondents do not always understand the questions in surveys, or, do not know the subject matter in questions, such as stocks or bonds.⁵⁵⁹ The inversion does not alter the meaning of the question, nor does it make the question more difficult to understand. A person familiar with stock mutual funds and stocks will understand whether the stock mutual funds are safer than company stocks, irrespective of the way the question is phrased. Therefore, difficult topics may not be understood by consumers and this can explain the different results for the same question presented in two different ways.

5 Summary

Surveys are a key tool for measuring financial literacy. However, it is important to measure *actual* financial literacy, rather than claimed financial literacy. As a result, a survey should avoid the following: (i) a “one size fits all” approach, (ii) self assessment and subjective questions, and (iii) not explaining the scoring used. First, a “one size fits all” approach ignores the variance of findings among sub-groups, thereby wrongly testing an entire population that will favor some over the other. This can be remedied, as far as possible, by tailoring questions as they are suited to particular demographics. For example, young people will have very little or no experience with mortgages. Thus, young people should be tested by variable specific questions about “subtopics” relevant

⁵⁵⁸ Ibid.

⁵⁵⁹ Ibid, 10-11.

to them. This can include budgeting, short term saving plans, but not mortgages and share trading. Second, self assessments and subjective questions should be balanced with objective questions that test *actual* financial literacy and numeracy, because people tend to overestimate their abilities. However, while attitude based questions should be approached with caution, they can add a useful dimension to a study. Therefore, a study should break up the assessment between *actual* and *perceived* or *claimed* attributes. For this reason, a number of surveys split up the assessment between the following, and compare the results: (i) competence; (ii) understanding; and (iii) knowledge (which each measure actual attributes); and (iv) attitudes (which measure claimed attributes). The results for each are compared with the other. Third, survey questions should include definitions and a number of similar questions structured in a different way, to yield an average that is likely to give the most accurate reflection of financial literacy and capability. This answers the problem of random selections and guessing. Fourth, a survey should explain the scoring methodology used to create the financial literacy scores.

III SUMMARY OF COMMON FINDINGS

The appendix to this report summarises 23 financial literacy surveys from the World Bank and a number of countries including Australia, the UK, US, Italy, the Netherlands, Singapore, Japan, Austria, Ireland and Russia. The research report refers to further studies and surveys from these countries, as well as Canada and Iceland. The surveys shared some common features and findings.

A Methodology

The surveys focused on variable specific testing and distinguished between socio-demographics.

1 Type of people surveyed

Many surveys distinguish responses from socio-demographics, to compare results from each socio-demographic. There is a clear link between financial illiteracy and socio-

demographic status.⁵⁶⁰ For example, the ANZ Survey found that young people,⁵⁶¹ women, the elderly, ethnic minorities, the poorly educated and people from outside major cities are more likely than other groups to be financial illiterate.⁵⁶² Using cluster analysis, the surveys were able to identify which competencies or traits attached to specific groups.⁵⁶³

The variables used in some financial literacy surveys are:

- sex;
- age;
- household status and size, including single parent households, families with children etc;
- home ownership. That is, whether the respondents are renting, or whether the respondents are buying or have bought a home. The latter two reveal exposure to mortgages, and thus financial experience;
- Education, measured up to Year 10, 11, 12, TAFE, undergraduate university and postgraduate university study);
- employment level and occupation, distinguishing blue collar from white collar workers. It may be appropriate to not classify the distinction as being white collar and blue collar, but professional (business), professional (other), semi professional, small business owner, retail and sales, skilled trades, semi-skilled trades (including self employed tradespeople and employed tradespeople), and unskilled labour.
- employment status, distinguishing between working and non-working people. Among the non-working, variables include the unemployed, students, retired people, and people raising a family or undertaking household duties;
- time in workforce;

⁵⁶⁰ See: Chiara Monticone, 'How Much Does Wealth Matter in the Acquisition of Financial Literacy', (2010) 44 *The Journal of Consumer Affairs* 403.

⁵⁶¹ See: Annamaria Lusardi, Olivia Mitchell and Vilsa Curto, 'Financial Literacy Among the Young' (2010) 44 *The Journal of Consumer Affairs* 358.

⁵⁶² ANZ Survey of Adult Financial Literacy in Australia (2008).

⁵⁶³ This means identifying results which cluster in a similar area, or which are shared among a particular variable.

- race and ethnicity;
- academic discipline, distinguishing between commerce related disciplines and other disciplines;
- class rank and level of intelligence;
- geographic location, emphasizing areas that are socially disadvantaged;
- financial variables, including household income, personal income, household savings, superannuation, net worth, household mortgage debt and household non-mortgage debt;
- language ability, which can be particularly important for migrants; and
- disability, including sensory disabilities which can result in an inability to gain access to and understand financial contracts.

B Common findings

A number of surveys summarised in the appendix of this research report found that:

- Financially literacy can be improved;
- Higher levels of financial literacy result in higher savings and planning for retirement, and an appreciation that superannuation alone is insufficient for retirement;
- Financially literate people tend to budget, save and keep track of their spending;
- People overestimate their financial abilities;
- Women tend to have lower financial literacy than men;
- People with lower incomes tend to have lower financial literacy than those with higher incomes;
- University graduates tend to have higher levels of financial literacy than people without university education;
- People from disadvantaged postcodes have lower levels of financial literacy than those from more affluent areas;
- Young people and the elderly tend to have low financial literacy, and financial literacy levels peak at middle age;

- Understanding consumer rights and disclosure documents is an important element of financial literacy;
- Financially literate people are more likely than people with lower levels of financial literacy to undertake comparison shopping and seek strategies to reduce and minimise fees;
- A major flaw in the process of selecting financial products is that people do not undertake comparison shopping;
- Insurance is much more prevalent among those scoring higher on financial literacy assessments;
- Not understanding the relationship between risk and return and purchasing unnecessary financial products was a defining feature of a financially illiterate consumer;
- Financially literate consumers are far more likely than financially illiterate consumers to seek financial advice and information;
- Financial products are too complex;
- Return was the most relevant issue for investors, followed by risk;
- People with higher financial literacy tend to repay debt on time, although this does not hold true for credit card behaviour;
- People with experience in finance, such as tax preparation or loans, tend to have higher levels of financial literacy;
- Public opinion in surveys overwhelmingly shows that people believe that pensions are insufficient to fund retirement, and savings are needed; and
- Experience is a leading cause of optimal financial decisions, because people can learn from their mistakes. Factors that are associated with better financial decisions include education level, income level and home ownership or taking out a mortgage to buy a home.

The surveys assumed that:

- “Financial literacy”, in its basic form, is generally considered to be numeracy and understanding of economic concepts; and

- A spectrum existed from basic to advanced competency, such that the level of literacy required for transactions increases as the complexity of the transaction increases.

Many surveys identified the below relationships:

Figure 6: The Relationships Identified by Many Financial Literacy Surveys

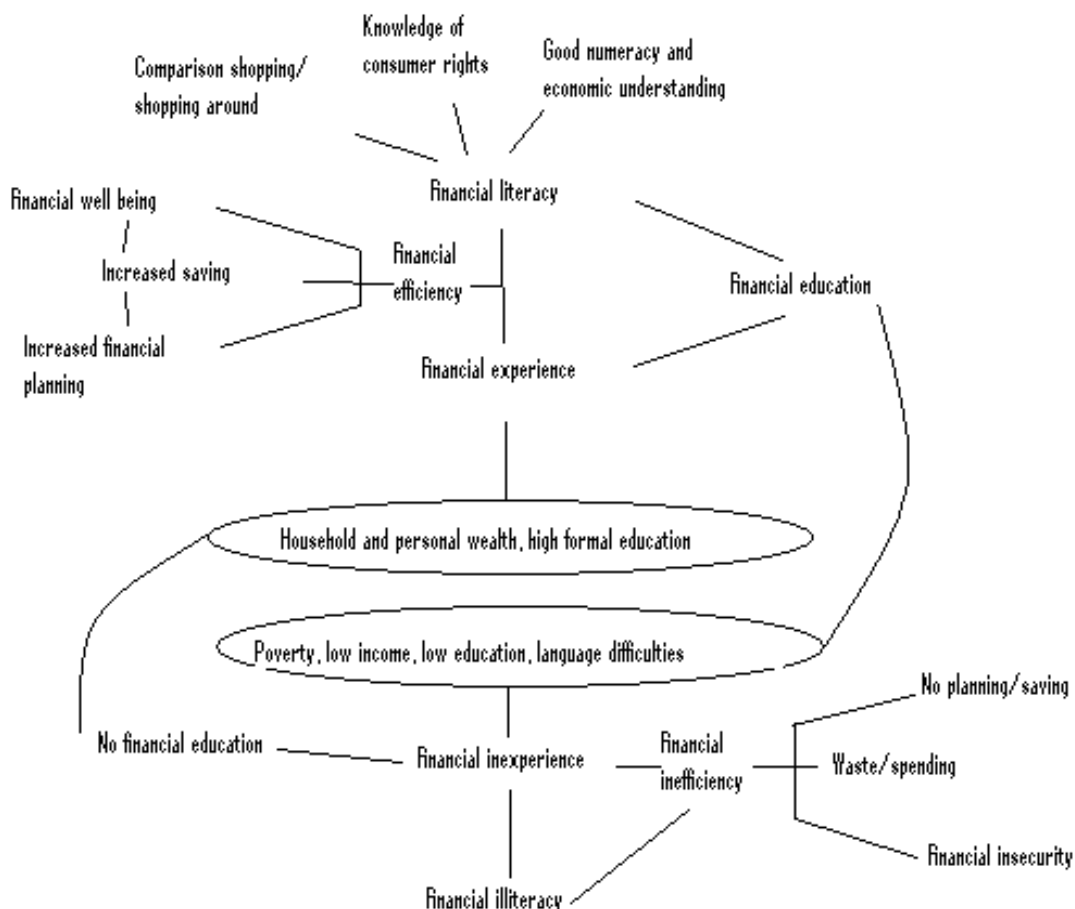


Figure 6 outlines the common findings of the surveys, which links financial literacy with desirable financial behaviour. Financial education can remedy socio-demographic conditions by providing financial experience which is gained through wealth and formal education. Financial literacy is therefore acquired through experience as well as formal instruction, and this literacy has significant benefits. In contrast, socio-demographic disadvantage or no financial education and experience can result in poor financial behaviour, such as no planning or saving, waste and excessive spending.

IV CONCLUSION

The design of a financial literacy survey is vital to ensuring the survey collects results that accurately reflect the levels of knowledge that exist in the community. Various flaws exist in a number of surveys that result in misleading findings. First, a survey should avoid a “one size fits all approach”. This means that surveys should adopt variable specific testing that focuses tailored questions to particular groups. For example, to say that a person under 25 years of age is financially illiterate for scoring low on a mortgage question may be misleading, because that person has no practical need for such knowledge. Second, self assessments or asking people to guess their financial literacy levels should be balanced with objective questions that test their financial literacy. Self assessments may however be important in establishing the attitudes of respondents, as many surveys test attitudes and compare them with competency, understanding and knowledge. Subjective testing is therefore balanced with objective testing. Third, complex questions should be defined or simplified, as far as possible, into statements. These complex questions should be asked several times but in a different way, to yield an average score. Fourth, a survey should explain how it measures financial literacy, to ensure that the method used to achieve a particular score is understood.

The surveys on financial literacy test a number of socio-demographics and have several commonalities and common findings. The surveys show that financial literacy levels can be improved in most instances, and that some consumers do not understand financial products. The surveys display lower levels of financial literacy for traditionally disadvantaged groups, and higher levels of financial literacy for traditionally privileged groups. Wealth has a significant correlation with financial literacy levels, but is not the sole cause of literacy. Literacy appears to be the result of financial experience, gained through wealth or exposure to the markets. It also results from financial education. Experience and education results in increased savings, financial efficiency and favourable consumer habits such as comparison shopping, and as a result the surveys show a link between literacy, however acquired, and sound financial behaviour.

Part F – Appendix: Summary of Financial Literacy Surveys

The appendix summarises 23 financial literacy surveys from the World Bank and a number of countries including Australia, the UK, US, Italy, the Netherlands, Singapore, Japan, Austria, Ireland and Russia. The length of the summaries will vary according to the respective size of the surveys, and the relevance of those surveys to this project.

I AUSTRALIA

A ANZ Survey of Adult Financial Literacy in Australia

Published in October 2008,⁵⁶⁴ the report explains findings from a survey of the financial literacy of 3, 500 adult Australians. The survey can be split into direct measures of financial literacy, attitudinal and behavioural information. The point should be made that the survey was taken during a time of economic volatility.

The survey ‘attempted to measure knowledge and understanding, behaviour, attitudes, perceptions and awareness rather than simply measuring skills’. The 2003, 2005 and 2008 ANZ surveys adopted the Financial Service Authority’s (UK) revised *Adult Financial Capability Framework* (2006), and financial literacy was classified into four main sections:⁵⁶⁵

- Mathematical literacy;
- Financial understanding;
- Financial competency; and
- Financial responsibility.

⁵⁶⁴ ANZ, *The ANZ Survey of Adult Financial Literacy in Australia* (2008) <http://www.anz.com/Documents/AU/Aboutanz/AN_5654_Adult_Fin_Lit_Report_08_Web_Report_full.pdf>.

⁵⁶⁵ Natalie Gallery, Cameron Newton and Chrisann Palm, ‘A Framework for Assessing Financial Literacy and Superannuation Investment Choice Decisions’ (Paper presented at the 18th Annual Colloquium of Superannuation Researchers, UNSW, Sydney, Australia, 12-13 July 2010), 88ff.

Two broad levels of financial literacy were also evident, in the form of “basic requirement” and “advanced competency”.⁵⁶⁶ This advanced a spectrum of financial capability, from weak to strong.

The survey found that Australians are generally financially literate. However, certain demographics face challenges. Money management and certain financial products are not well understood. Financial literacy was found to have a strong association with age, gender, education and socio-economic status. Those sub-groups gaining financial literacy scores below the mean of 83.1 included:

- People aged 18-24 (mean score of 71.5)
- People aged 70 and over (mean score of 63.3)
- Women (mean score of 80.5)
- Women aged over 70 years (mean score of 56.9)
- People who did not study beyond Year 10 (70.7)
- People living in 20% of postal areas regarded as socio-economically disadvantaged (mean score of 75.5)
- Unemployed people (mean score of 66.7)
- People working in lower blue collar occupations (mean score of 76.5)
- People whose main income source is from a Government benefit or allowance (mean score of 67.2)
- People with a household income less than AUD\$25,000 (mean score of 68.1)
- People who speak languages other than English at home (mean score of 77.9)
- People of Aboriginal or Torres Strait Islander descent (mean score of 63.9). The study warns that this assessment should be treated with caution given the small sample studies (54 people).

The sub-groups recording higher financial literacy scores than the mean of 83.1 included:

- People aged 35-59 (mean score of 89.8)
- Men (mean score of 85.9)

⁵⁶⁶ Ibid.

- University graduates (92.7)
- People living in 20% of postal areas regarded as the least socio-economically disadvantaged (mean score of 87.6)
- Upper white collar professionals (ANZSCO Major groups 1 (Managers) and 2 (Professionals) (mean score of 94.5)
- People with annual household incomes of \$150,000 or more (mean score of 97.3).

The study results were broken up into quintiles, with the top 20% of respondents placed in quintile five (“Q5”) and the bottom 20% in quintile one (“Q1”). Q5 gained a mean score of 116.5 and Q1 a mean score of 40.5.

While being mindful of the social forces that influence financial behaviour like socio-economic status rather than financial literacy, the following behaviours associated with high levels of financial literacy were recorded:

- People in Q5 were more likely to utilise a variety of financial information sources.
 - In relation to consulting financial publications, web-sites and seminars, 81% of Q5 did this compared with 38% of Q1.
 - In relation to gaining financial advice from a financial specialist, 80% of Q5 sought the advice of a professional such as an accountant, tax specialist or financial advisor compared with 43% of Q1.
- People in Q5 were more likely to do comparison shopping for financial products and services.
 - The products included insurance policies (87% compared with 56%), mortgages (80% compared with 59%) and everyday banking accounts (77% compared with 49%).
 - 35% of Q5 also used rating agencies to compare financial products, compared with 12% of Q1.
 - 48% of Q5 also used useful tools like on-line calculators to compare financial products, compared with 15% of Q1).
- People in Q5 exhibited a transacting behaviour that emphasised convenience and fee minimisation.

- 70% of Q5 used low cost and time efficient options like internet banking, compared with 26% of Q1)
- 91% of Q5 also took specific steps to minimise banking fees, compared with 68% of Q1).
- People in Q5 were more likely to insure against risk with contents and building insurance.
- People in Q5 were more cautious of investments that promised returns above market rates. 87% of Q5 said they would avoid such an investment, compared with 28% of Q1. 65% of Q5 also considered diversification of investment funds for risk minimisation as “very important”, compared with 36% of Q1).

The survey also reported financial behaviour exhibited by people who scored low levels of financial literacy. Members of Q1 performed on a relatively low level on several important aspects of financial knowledge and behaviour. This included:

- A decreased familiarity with business practice and legal obligations. For example, while 54% of all insurance holders understood the requirement for accurate and honest disclosure in insurance, only 17% of Q1 understood that an insurance company can refuse a claim if questions related to the loss are not answered honestly or accurately when taking out or renewing a policy.
- A reduced awareness of the consequences for defaults on credit card repayments, and the consequences for credit ratings on failing to make a repayment.
 - While 77% of all credit card holders understood the primary card holder is responsible for debt on the credit card, only 35% of credit card holders in Q1 understood this.
 - While 83% of all loan holders understood a joint loan would be repayable from both parties, only 52% of loan holders from Q1 understood this.
 - While 59% of the total sample understood that being more than 60 days late in a repayment would likely give someone a bad credit rating, only 38% of Q1 understood this consequence of a late repayment.
- A reduced appreciation of the consequences of not keeping banking details secure. If the card and PIN are stolen while being kept in the same storage device,

such as a wallet, 87% of the total sample understood liability would attach solely to the card holder. Only 67% of Q1 understood this.

People in Q5 were more likely than Q1 to have more financial products, and showed an overall greater willingness to research financial products and information, “shop around” for bank offers and deals, seek financial advice, and purchase financial products.

The table below, extracted from the survey results, shows ownership of financial products between Q1 and Q5.

Table 2: Financial Literacy and Financial Product Ownership

Financial Literacy and Financial Product Ownership	Total Sample %	Literacy Quintile	
		Quintile One %	Quintile Five %
<i>Base: Total Sample</i>	<i>(n=3,500)</i>	<i>(n=690)</i>	<i>(n=676)</i>
<u>Transacting and Deposit accounts</u>			
Ordinary or everyday account	97	95	98
High interest savings account	46	29	60
Term deposit	20	20	21
<u>Investments</u>			
Any superannuation fund	76	45	98
Self-managed superannuation fund	10	6	16
Shares	38	23	54
Managed investments other than superannuation	20	14	27
Investment property	19	11	28
Other investments (eg: debentures, bonds, etc)	4	2	5
<i>Base: All aged 55 years or over</i>	<i>(n=1303)</i>	<i>(n=366)</i>	<i>(n=189)</i>
Retirement income stream product	20	13	28
<i>Base: Total Sample</i>	<i>(n=3,500)</i>	<i>(n=690)</i>	<i>(n=676)</i>
<u>Loans/Credit products</u>			
Mortgage on own home	34	18	48
Mortgage on investment property	11	5	18
Personal loan	17	13	17
Line of credit or overdraft	14	9	18
Lease or hire purchase agreement	9	6	11
Home equity loan	7	4	12
Margin loan	2	1	5
Equity release product	2	1	2
Credit card	65	48	81
Store card	13	12	13
<u>Insurance</u>			
Private health insurance	55	39	72
Life insurance	34	21	49
<i>Base: Own/Buying/Renting a home</i>	<i>(n=3413)</i>	<i>(n=660)</i>	<i>(n=665)</i>
Contents insurance	74	60	88
<i>Base: Own/Buying a home</i>	<i>(n=2579)</i>	<i>(n=440)</i>	<i>(n=562)</i>
Building insurance	80	70	88
<i>Base: Own/Buying a motor vehicle</i>	<i>(n=2804)</i>	<i>(n=462)</i>	<i>(n=591)</i>
Comprehensive motor vehicle insurance	87	79	93
Third party motor vehicle insurance only	10	14	6
<i>Base: Working fulltime</i>	<i>(n=1434)</i>	<i>(n=157)</i>	<i>(n=387)</i>
Income protection insurance	30	16	35

Source: ANZ⁵⁶⁷

⁵⁶⁷ ANZ, *The ANZ Survey of Adult Financial Literacy in Australia* (2008)
http://www.anz.com/Documents/AU/Aboutanz/AN_5654_Adult_Fin_Lit_Report_08_Web_Report_full.pdf, 14.

Table 3: Financial Literacy and Behaviour

Financial Literacy and BEHAVIOUR	Total Sample %	Literacy Quintile	
		Quintile One %	Quintile Five %
<i>Steps taken to minimise everyday banking fees</i>			
<i>Base: Total Sample</i>	(n=1,176)	(n=230)	(n=226)
None /Can't say what steps are taken	19	32	9
Take some steps to minimise fees	81	68	91
<i>Comparison shopping for new financial products</i>			
<i>Shop around "at all" for the following products</i>			
<i>Base: Have arranged an everyday banking account</i>	(n=1,065)	(n=202)	(n=211)
Everyday banking account	65	49	77
<i>Base: Arranged mortgage on home/investment property</i>	(n=1,279)	(n=125)	(n=349)
Mortgage	73	59	80
<i>Base: Have arranged insurance policy</i>	(n=1,052)	(n=178)	(n=216)
Insurance	75	56	87

Source: ANZ

Common themes can be extracted from these statistics concerning the behaviour of Q1 compared to Q5. These behaviours appear to be linked with not only socio-economic status, age and ethnicity but also disposable income. This relates to socio-economic status, but it exposes a quite different feature of market participation; financial literacy is associated with, in some instances, the ability to use money to make money. Nonetheless, it does show how Australians may choose financial products by seeking financial advice, or paying a professional. The cost of financial decisions may be overwhelming on quintile one, because there was a 37 point difference in seeking the advice of a financial management/planning professional. Quintile one was 23 percentage points more likely to take *no action* to reduce bank fees, whereas quintile five was 23 percentage points more likely to take action to reduce bank fees. This also included a greater willingness of quintile five to go comparison shopping, with a difference of 28, 21 and 13 percentage points respectively to compare everyday banking accounts, mortgages and insurance.

The most popular financial products associated with Q1 were ordinary or everyday deposit or bank accounts at 98%, any superannuation fund at 98%, a credit card at 81%,

contents insurance at 88%, building insurance at 88% and comprehensive motor vehicle insurance at 93%. Any superannuation fund, credit cards and private health insurance were the products which saw the greatest disparity between Q1 and Q5, with percentage point differences of 53, 33 and 33 respectively. Superannuation is therefore a major issue concerning financial literacy. The use of credit cards is associated with high financial literacy, which could also reflect the intelligent use of credit rather than self destructive behaviour such as overspending. Credit cards can be a useful tool in reaching and maintaining financial stability.

B Mercer 2006 Financial Literacy and Retirement Readiness Study

The Mercer study⁵⁶⁸ surveyed 802 working Australians, and found generally low levels of financial literacy among that sample. Half of those sampled had considered preparing for retirement, but only a fraction of that half had in fact *prepared* or began *preparations* for retirement. Knowledge relating to superannuation funds was also minimal. The study found a positive correlation between high financial literacy and preparation for retirement. In contrast, it found a negative correlation between financial literacy and pessimism about comfort in retirement, indicating that a person's understanding of finance assists with a positive outlook relating to financial wellbeing in retirement. This is despite those recording the lowest financial literacy levels expecting a pension to make up 21% of earnings in retirement. The study found an overreliance on superannuation funding in retirement, indicating a lack of awareness among Australians about the purpose of superannuation, the differences between funds and the fact that superannuation may be insufficient on its own to provide a comfortable retirement. For example, two in five respondents did not know whether their superannuation fund was invested in conservative or aggressive strategies.

⁵⁶⁸ Mercer Human Resource Consulting, *Mercer 2006 Financial Literacy and Retirement Readiness Study* (2006)
<<https://www.mercerwealthsolutions.com.au/files/mercercwealthsolution/documents/2006101215292516176.pdf>>.

C Commonwealth Bank of Australia – Australian Financial Literacy Assessment

The Australian Financial Literacy Assessment (“AFLA”)⁵⁶⁹ began in 2005 and it focused on high school students. AFLA was repeated in 2006, testing 50,000 Year 9 and Year 10 students from over 500 schools. The schools included Catholic, Government and Independent sectors from all states and territories. The students were tested on their knowledge of financial products and concepts, their ability to make financial calculations and their claimed financial behaviour.

Respondents failed to grasp key terms in bank statements:

- 75% did not understand the term “credit” on a bank statement.

Respondents could identify simple features on financial documents, but the *ability* to calculate disposable income after tax was poor:

- 90% could identify the pay period on a payslip
- 66% could understand the progressive rate of tax
- 57% could calculate the net wage
- 32% could calculate the number of working hours required to meet income.

Generally, respondents appeared poorly placed to use financial services with sufficient understanding:

- 78% of Year 9 students understood how an ATM dispenses currency
- 75% were able to compare credit cards
- 52% could use the exchange rate to calculate a cost in Australian currency
- 48% of Year 9 students understood the term ‘debit’ on a bank statement
- 46% could calculate superannuation contributions
- 25% understood the term ‘credit’ on a bank statement (as above).

⁵⁶⁹ Commonwealth Bank of Australia, *Australian Financial Literacy Assessment* (2005) <http://about.commbank.com.au/GAC_File_Metafile/0,1687,11833%255F2006%255Fafla%255Freport,00.pdf>.

Respondents displayed a lack of readiness to enter the financial market, reflected by the noted weakness in calculating capital growth profits in shares and identifying risk in certain investments:

- 54% could calculate profit using a graph of share prices
- 50% understood the term ‘ethical investment’
- 43% understood the term ‘capital gains tax’
- 43% understood the term ‘product disclosure statement’
- 33% could calculate the average Consumer Price Index
- 22% could identify the level of risk of different types of investment.

For example, question 20 on the 2006 AFLA was:

20 Investments are often organised according to risk and return. The lower the risk of loss or failure, the lower the return received by the investor.

Which of the following investment options is usually considered to have the lowest risk?

- (A) shares
- (B) property
- (C) government bonds
- (D) superannuation funds

Source: Commonwealth Bank of Australia

Over two thirds of respondents could not assess the risk of the above investments. This is a common theme in other financial literacy surveys. No doubt levels of knowledge relating to risk can influence investment decisions, especially if it is known that government bonds typically offer low risk with low returns while shares, depending on the stock in question, can offer higher returns but at higher risk.

D Australians Understanding Money and Women Understanding Money

In 2007 and 2008 the Financial Literacy Foundation undertook a study to assess the financial literacy of Australians,⁵⁷⁰ and another to assess the financial literacy of Australian women.⁵⁷¹ The main study surveyed 7,500 Australians aged between 12 and 75. Noted differences exist between the results of the general study and the study of women. Particularly significant is the identification of 20 behaviours that relate to financial illiteracy. In identifying these behaviours, the study linked the attitudes expressed by the respondents with these behaviours, to determine which attitudes about money are likely to be undesirable.

The 20 behaviours are taken from seven money topics. Under each money topic were behaviours connected to poor financial literacy, which were linked with attitudes about money expressed in the main results. The behaviours show the incurring of unnecessary costs and fees, an inability to make an informed investment decision (considering risk and return), patterns of wasteful spending, failure to be informed, keep informed and probe finances, lack of insurance coverage or awareness, and an inability to budget, save and plan ahead particularly for the long term and for unexpected events.

The first money topic in the survey was “budgeting”. Four behaviours were produced under this money topic:

- (1) “I am not easily able to keep track of my everyday spending”
- (2) “I do not think about ways to reduce my spending”
- (3) “I have problems setting money aside for big purchases or spending”
- (4) “I do not regularly do a budget for day-to-day finances”.

The second money topic was “saving”. Three behaviors were produced under this money topic:

⁵⁷⁰ Financial Literacy Foundation, *Australians Understanding Money* (2007)
<<http://www.understandingmoney.gov.au/documents/australiansunderstandingmoneyweb.pdf>>.

⁵⁷¹ Financial Literacy Foundation, *Women Understanding Money* (2008)
<<http://www.understandingmoney.gov.au/documents/women/womenunderstandingmoney.pdf>>.

- (5) “I did not save any money in the last six months”
- (6) “I save only when I want something big or special”
- (7) “I do not save”.

The third money topic was “investing”. One behaviour was produced under this money topic:

- (8) “I would not consider risk and return when making an investment decision”.

The fourth money topic was “credit and debt”. Four behaviours were produced under this money topic:

- (9) “I tend to fall behind on loan repayments”
- (10) “I usually only pay the minimum amount owing on credit cards”
- (11) “I do not feel comfortable with my level of debt”
- (12) “I do not regularly pay the total balance owing on my credit card when it is due”.

The fifth money topic was “planning and retirement”. Three behaviours were produced under this money topic:

- (13) “I believe that financial planning is only important for those who have a lot of money”.
- (14) “I believe that retirement is too far away to think about”
- (15) “I have not thought about long-term financial plans for the future and retirement”.

The sixth money topic was “protecting money”. Two behaviours were produced under this money topic:

- (16) “I do not believe in taking out insurance to be prepared for the unexpected”
- (17) “I do not have insurance”.

The seventh, and final, money topic was “information and advice”. Three behaviours were produced under this money topic:

- (18) “I rarely or never read financial statements”
- (19) “I check only the balance on financial statements”
- (20) “I understand only some or none of the information in financial statements”.

With these 20 behaviours indicative of poor financial literacy in mind, the study linked various attitudes with the 20 behaviours. The more behaviours attributed to an attitude, the weaker the financial literacy. The attitudes and the number of respondents who agreed with that attitude, are reproduced below:

Figure 7: Attitudes to Money (Australians Understanding Money)



Source: Australians Understanding Money

One attitude was: “I (do not) spend a lot of time thinking about financial information before I make a financial decision”.

Admittedly, the issue of sufficient time spent considering a decision is subjective. A person may be financially literate enough to be able to make a decision with minimal investigation, or simply refer the matter to a financial professional. Too much time spent on a decision is inefficient. Young people were found to not even consider two vital elements of financial decisions, investment returns and risk. Returns would not be considered by 61% of young people, and risk would not be considered by 77% of young people when choosing an investment.

To compare, this attitude was held by:

- 21% of women
- 22% of the adult population
- 31% of people aged 65
- 30% of people with household incomes less than \$20,000.

A second attitude was: “I do not have the ability to understand financial language”.

This has a significant impact on the ability to make informed decisions about financial products, and it may foster procrastination or signing of agreements which a consumer may not understand.

This attitude was held by:

- 28% of the adult population
- 36% of people with household incomes less than \$20,000
- 19% of people with household incomes more than \$100,000
- 32% of women and 24% of men

A third attitude was: “Nothing I do will make a big difference to my financial situation”.

This attitude reflects a common theme throughout the studies: an aversion to long term saving. The study suggests that high short term gain acts as an incentive, whereas the

gradual accumulation of wealth over a lifetime does not provide sufficient incentive and accordingly these small incremental additions to wealth are not pursued readily. Young people appear more optimistic than people over 65, possibly due to time. However, this is not reflected in practice because while 72% of young people agree that small and regular incremental savings is the best long term strategy, 50% admit to not saving regularly. Further, 67% of young people said that retirement was too far away to think about compared with 21% of adults. 59% of young people also say that they live for today, along with 31% of adults, indicating a logic averse to savings. Almost half of people from low income households appear to find improving their financial situation to a large extent futile.

This attitude is held by:

- 21% of the adult population
- 13% of people aged 18-44
- 50% of people over 65
- 45% of people with household incomes less than \$20,000
- 9% of people with household incomes over \$100,000
- 23% of women
- 19% of men.

A fourth attitude was: “I (do not) try to stay informed about money matters and finances”.

This attitude was held by 15% of the adult population.

The study also asked whether the respondents were confident about certain financial products. In relation to credit cards, 83% of adults said that they were confident with credit cards, compared with 44% of young people.

The thought processes used to choose financial products are relevant. For example the findings below relating to investment decisions elucidate key thought processes of consumers prior to selecting a product. The following broad categories associated with

household finance were assessed: budgeting, saving, investing, credit card and debt, and planning for retirement.

In relation to budgeting:

- Only 28% of respondents strongly agreed with regular budgeting for daily finances
- 57% are able to keep track of their daily spending, while a further 25% slightly agree with their ability to keep track of daily spending
- 79% think about ways to reduce spending
- 80% believe they could get by for some time in case of a financial emergency
- 79% report having no problem setting aside money for big purchases, but, as noted, many do not save regularly. This shows that people can commit to saving for a purpose, but not as readily for long term security.

In relation to saving:

- Only 62% of respondents said they save regularly, with a further 15% saving for something big or special and 22% not saving at all.

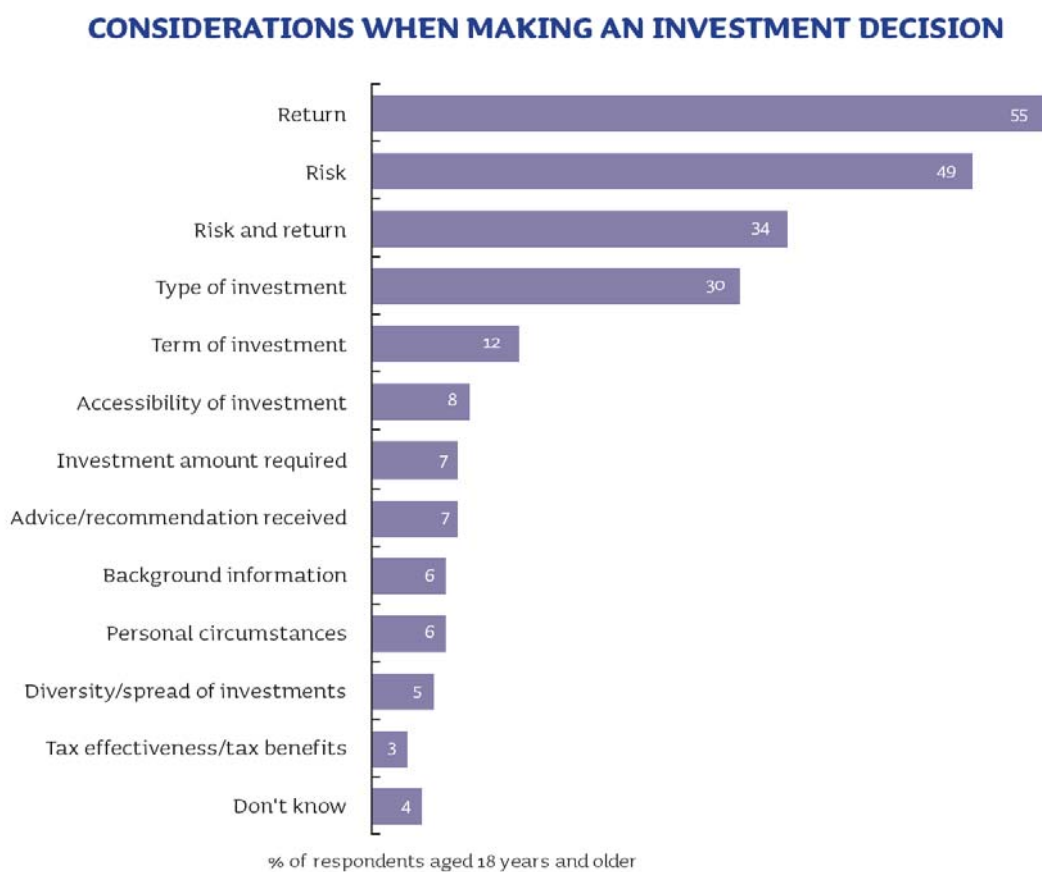
In relation to investing:

- The findings indicate that many Australians would not take into account key considerations before making an investment decision, showing that financial literacy plays a role in investment behaviour
- About 30% of the respondents said that they are not confident about investing.
- Risk and return is only considered by 34% of respondents
- Background information about the reputation of the company was considered by only 6% and diversification by 5%
- Reflecting the lack of attention paid to risk and return, and the key indicia that assist forecasting whether an investment is a good one, 67% of women and 63% of men agreed with the view that risk and returns of an investment are unpredictable

- It is stated in the study: ‘in order of importance, respondents listed return, risk and type of investment as the three main considerations for an investment decision’. For people aged over 65 and people with household incomes less than \$20,000, risk is more important than return.

The table below shows the considerations of investors before making an investment decision.

Figure 8: Considerations When Making an Investment Decision (Australians Understanding Money)



Source: Australians Understanding Money

Investments appear to increase with age, spiking at 45-65 years of age (except for savings accounts):

Table 4: Reported Investment Types By Age Group (Australians Understanding Money)

REPORTED INVESTMENT TYPES BY AGE GROUP

	All ages	18-29	30-44	45-54	55-64	65+
	%	%	%	%	%	%
Have savings account	72	80	71	71	69	66
Own home or have mortgage	62	24	67	76	81	81
Have shares, managed funds	46	24	45	56	62	60
Have investment property	18	6	21	28	24	11

Source: Australians Understanding Money

In relation to credit cards and debt:

- The study considered credit cards and loans in light of affordability, being a person’s ability to make repayments and avoid charges, fees and interest.
- Payment of the total balance payable and due on their credit cards was reported by 76% of respondents.
- 32% of respondents pay more than the minimum on loans. A further 31% pay more than the minimum and extra repayments when possible. 76% would not buy something beyond their capacity to repay.
- The vast majority of respondents, at 80%, agreed that the best way of saving money is to pay off debt early. This avoids unnecessary costs, charges and fees.

In relation to planning and retirement:

- Most people view superannuation as insufficient to fund retirement.
- ‘Reported superannuation fund membership varies with age. It is over 80% for people aged 18 to 54, peaking at 90% for people aged 30 to 44, then declines, most significantly for people aged 65 and over. Participation by household income is lowest for people with annual household incomes of less than \$20,000 and rises sharply to above 90% for people with annual household incomes of more than \$50,000’.

E Australian Securities and Investments Commission (ASIC) – Australian Investors: At A Glance

Following focus groups and interviews with 49 Australian investors in late 2006, ASIC conducted a follow up telephone survey of 1,200 investors in 2007.

The research project primarily focuses on investing. The research therefore considered the following investments:

- Shares;
- Real property;
- Managed investments;
- Self managed super funds (SMSFs);
- Direct investments, such as debentures and bonds; and
- Lower-level investments such as term deposits, voluntary superannuation contributions and high interest savings accounts.

With these investments in mind, the project surveyed investors to investigate reasons and motivations for investing, and whether investors share common traits. The findings of the project can be divided into the following categories:

- **The profile of investors**

- *Financial experience.* People identifying themselves as investors were more likely to belong to socio-demographics which have experience in finance. These include home owners (48%), people who are employed (69%), people who are married or in a defacto relationship (68%) and people aged over 50 (47%).
- *Financial inexperience.* The project found that ‘among those least likely to have investments were those whose highest level of education was

primary school (1%), single parents (5%), young couples with no children (7%) and young singles (8%)'.⁵⁷²

- *Sex.* Women were found to be at risk of underinvestment, whereas men were more prone to take risks.
- *Socio-economics.* Lower socio-economic quintiles, people experiencing unemployment, single mothers and young people were less likely to plan for the long term.

- **Investor awareness and literacy**

- *Seeking advice.* The survey found that just over one third (36%) of respondents consulted a professional as the first step in deciding about an investment.
- *Research.* The last time they invested, 16% of respondents relied solely on their own judgment.
- *Planning.* Almost half (47%) of respondents reported a long term financial goal and plan to reach it, while 37% neither had a plan or goal.
- *Review.* Investments are never reviewed by 12% of respondents. Annual review of investments was most likely, reported by 32% of respondents.
- *Knowledge.* The official interest rate could only be correctly stated by 7% of respondents. Investing seminars, training courses or software was paid for and used by 8%, 6% and 3% of respondents respectively. Many respondents did not understand diversification. 36% of respondents thought that investing 100% of their money in Government bonds was good diversification. Half of respondents correctly identified a “reasonable” fixed interest rate.
- *Consumer rights.* ASIC could be named as the “corporate watchdog” by 28% of respondents.

- **Investor decision making**

⁵⁷² Australian Securities and Investments Commission (ASIC), *Australian Investors: At A Glance* (Report 121, April 2008).

- *Information relied upon.* One third (33%) of share investors relied on newspapers as their main source of information, while 22% of debenture and bond holders relied on newspapers.
- *Diversification.* Almost half of respondents (49%) had one type of investment only (for example, shares), and did not hold other forms of investments.
- *Motivations.* Rather than being due to a proactive desire to invest, respondents often invested due to external pressures depending on their stage of life. This includes divorce, inheritance, redundancy, or retirement.
- *Market and product complexity.* The project found that ‘some investors did not read formal disclosure documents and those who did read them did not necessarily read or understand all of the material. Barriers to reading disclosure material included complexity, jargon, time required to read and document length’.⁵⁷³
- *Return and risk.* The most important factors considered by respondents when making investments were risk and return. However, “reasonable” returns, and the principle that high return usually equates with high risk was not properly understood by respondents. For example, ‘almost half of investors showed interest in a hypothetical investment advertisement offering ‘Fixed returns of 9.75% p.a. All loans are secured by registered mortgages over real property...’ and 21% of them were interested because they believe it ‘sounds safe’’.⁵⁷⁴ “Investing” was viewed as active trading, rather than saving for retirement.
- *Steps in making an investment decision.* The most common first steps cited by respondents included further research (38%), consulting a professional (36%),
- *Barriers to decision making.* Respondents felt that the following barriers to invested existed: information and choice overload, fear of uncertainty,

⁵⁷³ Australian Securities and Investments Commission (ASIC), *Australian Investors: At A Glance* (Report 121, April 2008).

⁵⁷⁴ Australian Securities and Investments Commission (ASIC), *Australian Investors: At A Glance* (Report 121, April 2008).

time pressures, affordability, not knowing enough about investing, not knowing who or what to trust, or how to evaluate that advice.

II UNITED STATES

A National Foundation for Credit Counseling – 2010 Financial Literacy Survey

This American study utilized a sample of 2,028 adults aged 18 and over.⁵⁷⁵

The key finding of this survey was the “risky” financial behaviours engaged in by adult Americans, despite a reported improvement in financial literacy generally shown by increased budgeting and non-retirement savings. It also found that certain subgroups of the population such as young adults and minorities are particularly prone to risky financial behaviour.

The key findings of the survey were that:

- Since 2007, the proportion of adults who keep close track of their spending increased from 39% to 43%, although over half at 56% still do not have a budget.
 - Budgeting is roughly similar among demographics, but those with a lower income under US\$35,000 are more likely to budget than those earning over US\$35,000 (55% versus 39%).
- 51% of adults report spending less and saving more, although 27% of that sample said that such spending patterns reflect income and changed circumstances would mean changed spending patterns.
- One third of adults at 33% do not save for retirement. While non-retirement savings has increased, 30% reported having no savings and 24% only began saving more after the economic crisis and due to the economic climate. Only 7% of adults save more than 20% of annual household income for retirement.
- 39% of Generation Y adults have no savings, and 25% of that sample would charge an emergency to a credit card and 29% would take out a loan, thereby increasing their debt. 30% of adults do not have savings.

⁵⁷⁵ National Foundation for Credit Counseling, *2010 Financial Literacy Survey* (2010), <<http://www.nfcc.org/NewsRoom/FinancialLiteracy/files2010/2010ConsumerFinancialLiteracySurveyFinalReport.pdf>>.

- Reduced savings was also common among those aged 65 and over, indicating that disposable income is a factor in accumulating savings.
- African American adults (47%) are less likely than white adults (63%) to save for retirement.
- Despite people earning less than US\$35,000 budgeting more than those with higher incomes, people with such a level of income are least likely to save for retirement, with people earning more than US\$100,000 a year likely to set aside 11-20% of income annually for retirement.
- Young adults aged 18-34 (39%), those earning less than US\$35,000 a year (55%), African American (50%) and Hispanic (38%) are more likely to not have any savings than white adults (25%).
- 28% admitted to not paying bills on time;
- 67% pay for most purchases with cash or debit card.
 - 72% state a desire to avoid high interest rates as a reason for avoiding the use of credit cards.
- 65% of adults did not order a copy of their credit report, despite the report being free. 31% did not know their credit score.
- 44% of adults had a home mortgage, but 33% of that sample said that the terms of their mortgage were unknown. These unknown terms related to:
 - The amount of monthly repayments (14%);
 - The interest rate (12%);
 - The duration of the initial rate (9%);
 - The private mortgage insurance (PMI) they had agreed to pay in addition to the monthly mortgage payment (9%); and/or
 - The new dollar amount of their mortgage after it reset (11%).
- Levels of financial literacy were self assessed, with various people giving themselves a grade of A through to F in financial literacy. There existed a recognised need for financial literacy education.

B Investor Education Foundation – Financial Capability in the United States

The study, published September 2009, also considers a behavioural economics perspective.⁵⁷⁶

The study consists of findings from three linked surveys:

- **National Survey.** A national, random-digit-dialed telephone survey of 1,488 respondents with over-sampling to enable segmentation by selected demographic variables (e.g., race, household income, education level) (released December 2009).
- **State-by-State Survey.**⁵⁷⁷ A state-by-state online survey of 28,146 respondents (released December 2010).
- **Military Survey.**⁵⁷⁸ An online survey of 800 military personnel and spouses (released 14 October 2010).

In the National Survey, financial capability is not restricted to knowledge of certain terms. It ‘encompasses multiple aspects of behavior relating to how individuals manage their resources and how they make financial decisions (including the factors they consider and the skill sets they use)’. The key financial capabilities of making ends meet, planning ahead, managing financial products, and financial knowledge and decision-making were the foundation of all three surveys.

The survey focused on four key components of financial capability:

- **(1) Making ends meet.** Almost 50% of respondents reported difficulties covering monthly bills and expenses, which shows low levels of disposable income if

⁵⁷⁶ Investor Education Foundation, *Financial Capability in the United States* (2010) <<http://www.finrafoundation.org/resources/research/index.htm>>.

⁵⁷⁷ Investor Education Foundation, *Financial Capability Study State-by-State Study* (2010) <<http://www.usfinancialcapability.org>>.

⁵⁷⁸ Investor Education Foundation, *Financial Capability Among Military Personnel* (2009) <<http://www.finrafoundation.org/web/groups/foundation/@foundation/documents/foundation/p122256.pdf>>.

mandatory expenses cannot be covered. Difficulty making ends meet was strongly correlated with lack of savings.

- **(2) Planning ahead.** The survey found that many of the surveyed do not set aside funds for emergencies or predictable life events, such as tertiary education (which is particularly expensive in the United States without financial aid) and retirement. These life events can be split into two areas:
 - **Unexpected life events.** This could be referred to as “rainy day” funds, which only 49% of respondents reported having to cover 3 months of expenses in case of sickness, job loss, economic downturn or another emergency. People aged 18-29 and those with annual incomes less than US\$25,000 were least likely to have such funds, at 31% and 26% respectively. People who lacked a “rainy day” fund were shown to be 1.5 times more likely to have experienced a large decrease in income over the past year, and were 3.8 times more likely to not have health insurance.
 - **Expected life events.** These life events include retirement and children’s education. Only 42% of respondents attempted to calculate financial needs during retirement. 41% of families with financially dependant children have set money aside for their children’s education. Those with higher incomes appeared to take advantage of tax-free and tax-deferred college savings plans, showing a correlation between income and the use of these plans.
- **(3) Managing financial products.** Few respondents, the survey found, appear to be knowledgeable about the financial products they own, while 20% reported the use of non-bank and alternative borrowing methods (such as payday loans, advances on tax refunds or pawn shops). About 68% of respondents reported having credit cards, with 27% of that sample having four credit cards.
 - Older respondents over the age of 70 appear to use credit cards appropriately, while younger people tend to incur added costs for exceeding payment deadlines or credit lines.
 - 61% of respondents reported owning a home. Among those homeowners, 61% had a mortgage and 21% had a line of credit. Home ownership and

mortgages correlate strongly with higher incomes, with 84% of those earning more than US\$75,000 owning homes compared with 34% of those with incomes less than 34%.

- Nine out of every 10 respondents had a fixed rate mortgage.
- A high aversion towards risk was noted in respondents.

- **(4) Financial knowledge and decision-making.** The survey found that respondents self assessment of their financial literacy was overstated, and this stated level of understanding does not reflect their financial behaviour. Very few compared financial products and their respective terms. Many respondents displayed lack of knowledge about the terms of their financial contracts, and a limited understanding of the requirements of their financial products generally.

- The following questions were asked of respondents to the survey:⁵⁷⁹

Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

More than \$102

Exactly \$102

Less than \$102

Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?

More than today

Exactly the same

Less than today

If interest rates rise, what will typically happen to bond prices?

They will rise

⁵⁷⁹ Investor Education Foundation, *National Financial Capability Study 2009 National Survey Questionnaire* (2009)
<<http://www.finrafoundation.org/web/groups/foundation/@foundation/documents/foundation/p120537.pdf>>.

They will fall

They will stay the same

There is no relationship between bond prices and the interest rate

A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less.

True

False

Buying a single company's stock usually provides a safer return than a stock mutual fund.

True

False

Less than 10% of respondents were able to answer all questions correctly. Less than two thirds of respondents (64%) were able to correctly identify that the money in an account earning 1% interest during a year with 2% inflation would be able to buy less than today. This question was answered correctly by:

- 58% of women;
- 43% of young adults;
- 51% of those with low household incomes;
- 56% of African-Americans;
- 42% of Hispanics;
- 46% of those without a high school diploma.

Only one in five respondents (21%) knew that if interest rates rise, bond prices will typically fall. Self perception about financial competence was usually overstated, emphasizing the dangers of basing a survey on assumptions and self assessment. For example, in relation to self-perception of financial behaviour, the following statement was made and respondents asked to either agree or disagree with the statement on a scale of 7 to 1, with 7 being the strongest possible agreement. The statement was: "I am good at dealing with day-to-day financial matters", and it was answered by respondents with credit cards and checking

accounts. Half strongly agreed at 7 on the scale, 20% at 6, 13% at 5, 9% at 4 and 9% over 1 to 3. However, a quarter of those who “strongly agreed” and 40% who agreed ‘engaged in behaviours that generated fees or high costs’.

The respondents with the lowest financial capability were those from low income households of less than US\$25,000 and those with no post secondary education.

Financial literacy levels were found to be linked with behaviours reflecting financial capability. For example, the study concludes:

Financial literacy is found to be strongly correlated with behavior that is indicative of financial capability. Specifically, those with higher literacy were more likely to plan for retirement and to have an emergency fund, and they were less likely to engage in credit card behavior that generates high interest payments and fees. Financial literacy is also highly correlated with attitudes towards risk. Those who reported being unwilling to take any risks (ratings 1 to 3) were also more likely to say they did not know the answer to the question about risk and diversification.

This theme is common among the surveys.

C Jump\$tart Coalition – 2008 survey of the Financial Literacy of Young American Adults

The Jump\$tart Coalition conducted a financial literacy survey of American high school and college students. The survey is important in understanding financial literacy as it develops from high school to college. The high school sample consisted of 12th grade (non-honours) students not studying economics or a related discipline. Three hundred and eighty eight American schools participated. The college sample was conducted in February 2008, and consisted of 1,030 full time college students. The Coalition identified four key areas of coverage: (1) income; (2) money management; (3) saving and investing; and (4) spending and credit. In addition, the college survey also measured financial behaviour, such as credit card use, incurrence of debt, cheque account balancing habits and incidence of insufficient funds and tax preparation. The status of tertiary students as

adults meant they had a history of financial behaviour. There appears to be a correlation between educational performance in SAT (college entrance exams) scores and financial literacy, although the causes of such performance other than intellect should be considered. Some results are counter-intuitive, with some high financial literacy scores actually being linked with “poorer” financial behaviour.

An important feature of the college survey is its analysis of the connection between financial literacy and certain forms of financial behaviour. The findings are counter-intuitive and a number of anomalies were found. The forms of financial behaviour considered included:

- **Credit card use.** Students with more credit cards (up to four) had higher financial literacy scores. Those who pay only the minimum balance on their credit cards scored slightly higher (63.8%) than those who pay their balance in full on a monthly basis (62.7%). Those with debts over US\$10,000 also had slightly higher financial literacy scores (64.2%) than those with a debt less than US\$1,000 (63.4%), US\$1,000 to US\$2, 499 (61.7%), \$2,500 to \$4,999 (60.7%), and moderately higher than those with debts between \$5,000 to \$9,999 (55.4%). The report confirms that ‘these findings seem to fly in the face of traditional belief, which is that more financially literate consumers tend to have better *credit card behavior*’. One view is that adults spending behaviours may be different to tertiary students, who may need any source of income available to fund their education. One main finding is that students with higher financial literacy more successfully avoided late payment fees on their credit cards, but only marginally. Those who pay credit card bills late more than twice per year scored 59.7%, only 3.8 percentage points lower than those who never pay their bill late who scored 63.5%.
- **Debt other than credit card debt.** Quite unexpectedly, those tertiary students with higher debt tended to have higher levels of financial literacy. Students who had an expected debt at graduation of over US\$50,000 scored 65% compared with 61.3% scored by students who do not expect any debt at graduation. This could again be explained by the financial demands on tertiary students, and the costs of

- tertiary education in the United States which can include extremely costly tuition and relocation costs. Those with auto loans are more financially literate than those with a home mortgage or other types of debt.
- **Saving and investment behaviour.** Higher financial literacy scores were associated with investments, such as in mutual funds or retirement accounts such as 401k plans or IRA's. Students who had retirement accounts scored 65.8%, and those with mutual funds 68.5% as opposed to stock holders who scored 60.5% and those with savings accounts who scored 62.6%. Importantly, those with retirement accounts made up 6.9% of the sample, and those with mutual funds 8.9%. Cheque account holders has significantly higher financial literacy scores (62.6%) than those without such accounts (54.6%), although 91.1% of college students had cheque accounts.
 - **Tax preparation.** Those who prepare their own taxes are more financially literate than those whose parents do their taxes.

D Bruine de Bruin et al (2010)

The survey was web based and included 613 respondents, who were surveyed between December 2007 and May 2008. This survey tested financial literacy and its impact on inflation estimates. The items of the survey were distributed as follows: five items directly measured inflation, three items measured basic numeracy, and eight items measured advanced numeracy. True/False, open ended and multiple choice formats were used. Overestimated inflation figures were recorded by women, people with low incomes, those with no tertiary education, and racial and ethnic minorities.

The authors found that financial literacy correlates with financial confidence:

Financial confidence was significantly correlated with total financial literacy scores ($r_s = .33, p < .001$), indicating that respondents who knew more also had greater confidence in their knowledge... As expected, respondents with lower financial literacy scores reported higher inflation expectations ($r_s = -.21, p < .001$) and were more likely to report expectations greater than 5% ($r_s = -.26, p < .001$). However, those reporting lower financial confidence did not report

higher inflation expectations ($rs = -.07, p = .26$) nor were they more likely to report inflation expectations greater than 5% ($rs = -.05, p = .38$)⁵⁸⁰.

E Federal Reserve Bank of Atlanta Study of Financial Literacy and Subprime Mortgage Delinquency

This survey focused on whether levels of financial literacy (in particular numerical ability) play a role in mortgage defaults. The results indicated that a link exists between low levels of financial literacy and mortgage defaults.

The survey contained four important parts.⁵⁸¹ First, the survey measured levels of financial literacy, numerical ability and basic economic literacy. This also included a general measure of cognitive ability. Second, the survey measured time and risk preferences among respondents. Third, the survey assessed knowledge about details of mortgage contracts and the general experience of shopping for a mortgage. Fourth, the survey was mindful of socio-demographic characteristics and trends in the mortgage market connected with particular demographics.

⁵⁸⁰ Wandi Bruine de Bruin, Wilbert Vanderklaauw, Julie Downs, Baruch Fischhoff, Giorgio Topa and Oliver Armantier, 'Expectations of Inflation: The Role of Demographic Variables, Expectation Formation, and Financial Literacy' (2010) 44 *The Journal of Consumer Affairs* 381, 393.

⁵⁸¹ Kristopher Gerardi, Lorenz Goette, and Stephan Meier, 'Financial Literacy and Subprime Mortgage Delinquency: Evidence from a Survey Matched to Administrative Data' (Working Paper No 2010-10, 2010, Federal Reserve Bank of Atlanta) <<http://www.frbatlanta.org/documents/pubs/wp/wp1010.pdf>>.

III UNITED KINGDOM

A Financial Services Authority - Levels of Financial Capability in the UK

The results of this survey were published in March 2006.⁵⁸² The full national survey was conducted between June and September 2005, and consisted of 5,328 people being interviewed. The survey was not in the form of a test. Rather, it was based on assessing patterns of behaviour and attitudes, with no right or wrong answers. However, the answers are weighted according to forms of behaviour most appropriately relating to sensible and financially literate behaviour.

The survey also included a “money quiz”, which tested financial literacy and product knowledge in a similar fashion to other surveys. Almost all of the questions in the quiz were answered correctly by 21% of respondents, and 66% scored 75% or more on the quiz. This quiz yielded different results to the survey results, which were based on an entirely different method of testing financial capability.

The survey represented financial capability as encompassed by four different areas, or “domains”. These domains were: managing money, planning ahead, making choices (choosing products) and getting help (staying informed). Particular attention will be paid to the findings on choosing products.

Managing money: While conceding that higher earnings can cause people to make ends meet without money management skills, the survey produces two key findings relating to the management of money. While a large proportion of respondents lived within their means, people did not keep track of finances in the same diligent manner.

Planning ahead: Planning for expected and unexpected events is an important indicator of financial literacy and capability. While some respondents made considerable efforts to

⁵⁸² Financial Services Authority, *Levels of Financial Capability in the UK* (2006)
<<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>.

plan ahead, it was equally common for some to display little or no evidence of such planning. That government funding would be insufficient to maintain a hoped for standard of living in retirement was understood by 81% of respondents. While some may have good intentions relating to saving for retirement, efforts may be thwarted by lack of money.

Choosing products: A key area of investigation related to choice and purchase of financial products. The survey was designed to assess *knowledge* about financial products, attitudes to risk, and the behaviour and confidence of the respondents in selecting financial products which they perceived as appropriate for their needs. Respondents were only asked about the two most complex products they actually purchased in the last five years.

A significant group achieved relatively low scores. ‘Few scored at the higher extreme; instead most people clustered around the bottom range of scores for choosing products’. The perception held by respondents was that professional advice would be more desirable than keeping informed through ones own research. The vast majority, at 79%, simply rely on product information or non-independent advice.

The survey assessed financial capability and people’s purchasing habits. The most commonly held product was a current account (89%) followed by a savings account (61%), home contents insurance (66%), motor insurance (61%), building insurance (56%), a credit card (56%), life insurance (47%), a mortgage (33%) and cash, stocks, shares and life assurance (28%). Products were held for a considerable period of time, indicating ‘considerable *inertia* despite a highly competitive market’.⁵⁸³

The following financial products were considered:

- Mortgages. Repayment mortgages were held by 62% of respondents. A sizeable portion of respondents (43%) said that they were not willing to take any risks in

⁵⁸³ Financial Services Authority, *Levels of Financial Capability in the UK* (2006) <<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>, 88.

relation to repaying mortgages. Mortgage repayments were made by 83% of respondents without difficulty, 12% struggled but made repayments while 4% were assisted by the state and 1% reported falling behind with payments. In relation to choosing mortgages, 36% chose it on their own while 39% relied on a product recommended by a professional advisor.

- Life and income protection insurance. Almost one in five (18%) respondents held a form of income protection insurance. There are some aspects of waste, and a failure to find the most appropriate product. Among the respondents who were single and without dependants, 7% had life insurance. The study found that the terms of insurance coverage were not widely known, with 18% of those with income protection insurance not knowing whether the policy would pay out immediately and 35% did not check whether their policy continued to provide adequate cover. Almost half did not check the adequacy of critical illness and life insurance. The purchase of a form of protection insurance was decided by 39% of respondents on their own, while 31% relied on a professional advisor. Choices were influenced by the cost of premiums (35%) and the level of cover (39%), although other policies were not considered by 6% of respondents.
- Other insurance. Over half of respondents personally collected information before making a choice about general insurance (61%), and five or more quotes were collected by 23%. A third (33%) only sought one quote for the product they chose. The costs of premiums was the main reason for selecting the particular policy (65%), while less than half of that number based their decision on the level of cover (32%). People appeared to be confused about financial products, and some held unnecessary policies while others did not have an insurance policy that, judging from their housing circumstances, would be appropriate.
- Saving accounts and investments. The investment included anything other than Premium Bonds. Almost half (44%) did not collect information from more than one company about different savings accounts. Two thirds (66%) had made the decision themselves, showing low levels of shopping around. A quarter did not base their decision on the product at all, claiming to have chosen the product because of the location of the branch or cash machine, or previous experience

with the provider. While 37% based their decision on interest payable, about half could not state the level of interest on their account. A quarter never monitored their investment. As to level of risk and investment:

- Shares. Respondents to the survey displayed an inability to accurately identify which products carry an element of risk. For example, 18% think that shares have no risk.
- Credit cards and loans. Over half of respondents had a credit card, and 21% did pay outstanding monthly balances in full. Almost one in five said that their choice of credit card was influenced by another person. A quarter chose their particular card because it offered zero percent interest, and the same number relied on the interest when choosing the product. Just over one in ten (11%) had their card because it came with their current account. As to loans over a quarter (27%) relied on interest rates when choosing a product.
- Current accounts. A large number of respondents (31%) chose an account on recommendation rather than research, 23% chose the account because of prior experience with the bank and a further 23% because of the convenient location of the branch.

Making an informed choice is central to the idea of financial capability. The choosing products domain of this survey is made up of six derived variables: (1) information and advice, including (i) whether any information was collected (54% of respondents responded in the affirmative), and (ii) the main source of information for active product purchase (product information was the primary source of advice for 42% of respondents, while 21% did not get advice); (2) whether the consumer checked their advisor was authorised; (3) how respondents chose products (79% relied on product information or non-independent advice and 12% relied on well informed personal choice); (4) why respondents chose a particular product (34% of respondents cited product features, 21% cited price, 20% said they chose the product because of the provider only or because the transaction was easy); and (5) whether the consumer read terms and conditions. The

results noted that: ‘just over half had read the terms and conditions in detail, whilst almost one in ten had neither read them nor asked anyone else to do so on their behalf’.⁵⁸⁴

Several points can be made about this study, and its findings about the selection of financial products:

- Respondents to the survey were generally poor at choosing financial products. They did not shop around or consider alternatives. Also, many respondents did not read the terms and conditions of products carefully.
- One in five (20%) of respondents made a decision without seeking any advice or information from anywhere. One in ten (10%) of respondents had not read terms and conditions. One in two had collected information and read terms and conditions in detail.
- Some respondents paid for products they do not need.
- Some respondents misunderstood the level of risk associated with particular products.
- Experience is linked with better financial capability, as people who had more experience with money recorded higher financial capability scores. That being said, people aged 60 and over have decreasing financial capability, reflecting a possible inflexibility to adapt to modern market demands in their aged years.
- Men performed better than women, and those from wealthy areas better than those from less wealthy areas.

Staying informed: This related to keeping abreast of economic changes, the development of new financial products and changes to existing products, and knowing where to get help and advice. The majority of respondents clustered on ‘the lower end of the financial capability scale in this domain’.

The identities of key cluster groups, and some of their demographic characteristics, are reproduced in Table 5. As expected, a clear relation between perceived financial

⁵⁸⁴ Financial Services Authority, *Levels of Financial Capability in the UK* (2006) <<http://www.fsa.gov.uk/pubs/consumer-research/crpr47.pdf>>, 111.

incapability and low income exists, with a key skill distinguishing high financial capability from low financial capability being the ability to organise finances. Table 5 explains the spectrum that exists from poor to high financial literacy, and the attributes associated with that spectrum. The table therefore breaks up the attributes into clusters, Ai to Fi, and in doing so links those clusters with a level of financial capability and the attributes prevalent within those clusters.

Table 5: Cluster Groups by Financial Literacy Score (Financial Services Authority)

Number of weak areas	Cluster	Per cent of sample	Weighted base	Description (typical examples)
0	Ai	36	1929	Very capable, well-off, older couples, many financial products.
1	Bi	13	692	Older, lower income, good at money management generally, fairly capable given their circumstances.
	Bii	9	455	Not organised, middle-aged couples.
2	Ci	4	218	High-income, younger couples, living beyond their means.
	Cii	4	209	Young, well-organised, middle incomes, 'living for the day'.
3	Di	3	151	Older, lower income, less good at keeping track of money.
	Dii	3	163	Middle aged, very low-income group, reasonable at making ends meet, fairly capable given their circumstances.
	Diii	7	373	Young singles with some financial engagement.
4	Ei	16	854	Low-income, younger, single people, few products.
	Eii	2	108	Early middle-aged, few products, some planning.
5	Fi	3	175	Younger, with children, struggling on low incomes, disorganised.
Total		100	5328	

Source: Financial Services Authority

B *Spring 2010 NS&I Savings Survey*

Launched in December 2004, the NS&I Survey is published each quarter and monitors trends in the saving behaviour of people living in the UK.⁵⁸⁵ Approximately 1,000 Britons aged 16 and over were surveyed. This survey tests savings behaviour, which forms a significant part of financial literacy.

The survey is important for understanding saving patterns and behaviour. Particularly relevant is the finding that that 54% of respondents believe that saving is contingent on affordability, or having sufficient funds to save.

Average figures show that financial behaviour corresponded with changes in the markets. For example, reduced income has resulted in revised savings targets among UK households. Spring 2010 is marked by an increase in saving (6.90%), but only marginally compared with Spring 2009 (6.83%). The number of people saving regularly has increased to 50% in Spring 2010, compared with 44% in the winter of 2009/10. However, the average saved by regular savers has dropped (from Spring 2009, GBP209 to GBP179).

⁵⁸⁵ NS&I, *NS&I Savings Survey* (2010) <<http://www.nsandi.com/press-room/savingsurvey>>.

IV SINGAPORE

A *Monetary Authority of Singapore – National Financial Literacy Survey*

The survey was conducted between March and April 2005. It covered 2,023 Singaporeans aged between 18 and 60. The survey assessed the 2003 “MoneySENSE” national education program, which sought to equip Singaporeans with the financial skills necessary for good financial planning, investing and retirement planning. As ‘most Singaporeans regard their financial decisions as personal matters, the survey questions were kept broad based’.

The survey aimed to measure levels of financial literacy in Singapore among different segments of the population. Financial literacy was measured by assessing the actions taken by Singaporeans in relation to financial matters, and their knowledge and understanding of common financial products and services. It also sought to gain an understanding of attitudes towards financial matters, and identify gaps in financial knowledge and actions. In doing so, it aimed to consider in what areas further consumer education is needed.

The survey found that the majority of Singaporeans save, budget, monitor spending and investments and are responsible with credit. Risk was considered by the majority who invested, reflecting a culture aware of the importance of financial planning. However, many were not certain of their retirement needs and had insufficient cash savings for an emergency. Importantly, the majority were unaware of the key features of ‘common financial products such as life insurance policies and unit trusts’.⁵⁸⁶

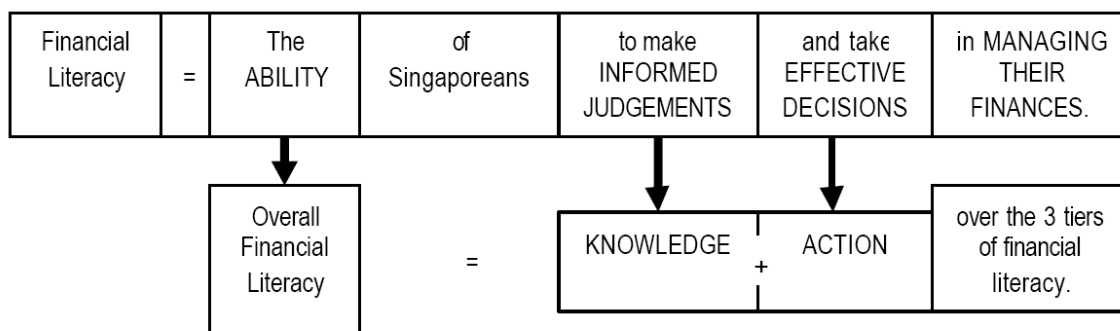
⁵⁸⁶ Monetary Authority of Singapore, *First National Financial Literacy Survey Reveals Encouraging Findings About Singaporeans Approach to Money Matters* (2005)
<http://www.mas.gov.sg/news_room/press_releases/2005/First_National_Financial_Literacy_Survey_2005.html>.

The following three areas were covered when measuring financial literacy:

- Tier 1 – Basic Money Management (budgeting, spending, saving, loans and credit facilities);
- Tier 2 – Financial Planning and Retirement Planning.
- Tier 3 – Investment Know-How.

The Monetary Authority of Singapore defined financial literacy as follows:

Figure 9: The Definition of Financial Literacy (Monetary Authority of Singapore)



Source: Monetary Authority of Singapore

In relation to choosing financial products and investing:

- 67% of respondents indicated that they did not have any investments. 21% clarified that this was because they did not know enough about investing, while 23% thought investing is too risky and a further 60% said that not having investments was due to lack of funds.
- Of the 33% who were investors, 21% of respondents had stocks/bonds, 19% had unit trusts, 4% had property investments and another 4% had structured deposits.
- 73% of respondents who were also investors considered risks prior to making the investment.
- 61% of respondents who were investors monitored their investments.
- 87% of respondents who were investors understood that the promise of higher returns usually means higher risk.

- 86% of respondents who were investors understood the benefits of diversification to spread the risk over different assets or industries.
- Terms and conditions of financial products were often misunderstood, ignored and too complex. In particular:
 - Insurance policies were misunderstood. Almost half (48%) did not know that they were entitled to cancel their policy within 14 days of joining, 48% thought all bonuses on insurance policies were guaranteed, and 70% did not know that when a term life insurance policy ends they will not get any money back.
 - Unit trust investment terms and conditions were misunderstood. Two thirds (66%) did not know that a unit trust carried a cancellation period within 7 days of purchase. Almost half (44%) did not know returns on their investment would be affected by fees and charges, and 43% did not know that withdrawing their structured deposit early could cause them to not get their full deposit back.

In relation to saving and retirement:

- Only 32% of respondents had cash savings three times their monthly income.
- Only 24% of respondents calculated their retirement needs.
- Only 30% of respondents accurately estimated the amount needed for a comfortable retirement, which, according to the survey, is two thirds or more of last drawn monthly pay.
- Only 28% of respondents understood how much retirement funds they would have when reaching the age of 55.
- 42% of respondents misunderstood their retirement saving needs and believed that their retirement savings will provide income equivalent to their monthly salary.

In relation to socio-demographic characteristics, there was a link between unemployment, sex, wealth, and education, and financial literacy scores. Students, women categorised as housewives, people experiencing unemployment and people who are retired were more likely to score poorly in financial literacy.

V THE NETHERLANDS

a) *van Rooij, Lusardi and Alessie (2008) – National Bureau of Economic Research*

van Rooij, Lusardi and Alessie conducted a survey in The Netherlands, publishing their findings in 2008.⁵⁸⁷ The survey was conducted in September 2005, testing 1,508 Dutch households in the first week, then 1,373 in the second week over the internet. It tested adults aged 22 to 90 years of age. The survey and study sought to identify the link between financial literacy and stock market participation. The results were that people with low levels of financial literacy tend to have lower stock ownership.

The survey was broken up into two parts. First, a set of questions aimed to assess basic financial literacy. These questions tested the ability of respondents to make calculations about interest, compound interest, the effect of inflation, discounting etc. Second, a set of questions aimed to test more advanced financial knowledge such as the difference between stocks and bonds, risk diversification and how it works, and the relationship between bond prices and interest rates.

Only 40.2% of respondents answered all the basic financial literacy questions correctly. The basic financial literacy questions took the following form:

1) The first question tested numeracy:

Suppose you had €100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

- (i) More than €102; (ii) Exactly €102; (iii) Less than €102; (iv) Do not know; (v) Refusal.⁵⁸⁸

⁵⁸⁷ Maarten van Rooij, Annamaria Lusardi and Rob Alessie, 'Financial Literacy and Stock Market Participation' (Working Paper No 13565, National Bureau of Economic Research, 2007) <<http://www.nber.org/papers/w13565>>.

⁵⁸⁸ Ibid.

90.8% of respondents answered this question correctly.

2) The second question tested compounding interest:

Suppose you had €100 in a savings account and the interest rate is 20% per year and you never withdraw money or interest payments. After 5 years, how much would you have on this account in total?

- (i) More than €200; (ii) Exactly €200; (iii) Less than €200; (iv) Do not know; (v) Refusal.⁵⁸⁹

76.2% of respondents answered this question correctly.

3) The third question tested inflation

Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?

- (i) More than today; (ii) Exactly the same; (iii) Less than today; (iv) Do not know; (v) Refusal.⁵⁹⁰

82.6% of respondents answered this question correctly.

4) The fourth question tested the understanding of the value of money over time

Assume a friend inherits €10,000 today and his sibling inherits €10,000 3 years from now. Who is richer because of the inheritance?

- (i) My friend; (ii) His sibling; (iii) They are equally rich; (iv) Do not know; (v) Refusal.⁵⁹¹

72.3% of respondents answered this question correctly.

5) The fifth question tested “money illusion”, or a hypothetical situation which tests simply financial literacy:

⁵⁸⁹ Ibid.

⁵⁹⁰ Ibid.

⁵⁹¹ Ibid.

Suppose that in the year 2010, your income has doubled and prices of all goods have doubled too. In 2010, how much will you be able to buy with your income?

- (i) More than today; (ii) The same; (iii) Less than today; (iv) Do not know; (v) Refusal.⁵⁹²

71.8% of respondents answered this question correctly.

The advanced financial literacy questions took the following form:

1) Which of the following statements describes the main function of the stock market?

- (i) The stock market helps to predict stock earnings; (ii) The stock market results in an increase in the price of stocks; (iii) The stock market brings people who want to buy stocks together with those who want to sell stocks; (iv) None of the above; (v) Do not know; (vi) Refusal.⁵⁹³

67.0% answered this question correctly.

2) Which of the following statements is correct? If somebody buys the stock of firm B in the stock market:

- (i) He owns a part of firm B; (ii) He has lent money to firm B; (iii) He is liable for firm B's debts; (iv) None of the above; (v) Do not know; (vi) Refusal.⁵⁹⁴

62.2% of respondents answered this question correctly.

3) Which of the following statements is correct?

- (i) Once one invests in a mutual fund, one cannot withdraw the money in the first year; (ii) Mutual funds can invest in several assets, for example invest in both stocks and bonds; (iii) Mutual funds pay a guaranteed rate of return

⁵⁹² Ibid.

⁵⁹³ Ibid.

⁵⁹⁴ Ibid.

which depends on their past performance; (iv) None of the above; (v) Do not know; (vi) Refusal.⁵⁹⁵

66.7% of respondents answered this question correctly.

4) Which of the following statements is correct? If somebody buys a bond of firm B:

(i) He owns a part of firm B; (ii) He has lent money to firm B; (iii) He is liable for firm B's debts; (iv) None of the above; (v) Do not know; (vi) Refusal.⁵⁹⁶

55.6% of respondents answered this question correctly.

5) Considering a long time period (for example 10 or 20 years), which asset normally gives the highest return?

(i) Savings accounts; (ii) Bonds; (iii) Stocks; (iv) Do not know; (vi) Refusal.⁵⁹⁷

47.2% of respondents answered this question correctly.

6) Normally, which asset displays the highest fluctuations over time?

(i) Savings accounts; (ii) Bonds; (iii) Stocks; (iv) Do not know; (v) Refusal.⁵⁹⁸

68.5% of respondents answered this question correctly.

7) When an investor spreads his money among different assets, does the risk of losing money:

(i) Increase; (ii) Decrease; (iii) Stay the same; (iv) Do not know; (v) Refusal.⁵⁹⁹

⁵⁹⁵ Ibid.

⁵⁹⁶ Ibid.

⁵⁹⁷ Ibid.

⁵⁹⁸ Ibid.

⁵⁹⁹ Ibid.

63.3% of respondents answered this question correctly.

8) *If you buy a 10-year bond, it means you cannot sell it after 5 years without incurring a major penalty. True or false?*

(i) True; (ii) False; (iii) Do not know; (iv) Refusal.⁶⁰⁰

30.0% of respondents answered this question correctly.

9) *Stocks are normally riskier than bonds. True or false?*

(i) True; (ii) False; (iii) Do not know; (iv) Refusal.⁶⁰¹

60.2% of respondents answered this question correctly.

10) *Buying a company stock usually provides a safer return than a stock mutual fund. True or false?*

(i) True; (ii) False; (iii) Do not know; (iv) Refusal.⁶⁰²

48.2% of respondents answered this question correctly.

11) *If the interest rate falls, what should happen to bond prices?*

(i) Rise; (ii) Fall; (iii) Stay the same; (iv) None of the above; (v) Do not know; (vi) Refusal.⁶⁰³

24.6% of respondents answered this question correctly.

The advanced financial literacy questions were designed to test the knowledge of financial assets, such as stocks, bonds and mutual funds, the returns and riskiness of different assets, and the workings of the stock market. Also, financial strategies (such as risk diversification) were assessed.

⁶⁰⁰ Ibid

⁶⁰¹ Ibid.

⁶⁰² Ibid.

⁶⁰³ Ibid.

The purpose of the survey was to link financial literacy with behaviour, and this link was found between financial literacy and the use of financial information and stock market participation. People scoring higher in financial literacy tended to make efforts to learn more about financial products, and enter the stock market.

VI ITALY

A Bank of Italy - Survey on Household Income and Wealth (SHIW)

This survey takes a representative sample of the Italian population, and 19,551 individuals in 7,768 households were surveyed.⁶⁰⁴ Half the sample, consisting 3,992 households, were given an extra module on financial literacy to be completed by the member of the household responsible for the household budget. Importantly, a “do not know” option was included in the survey, to prevent forced answers and guessing. The survey was quite short, consisting of only six questions. Question 1 related to reading a bank account statement, which 50% answered correctly. Question 2 related to calculating the impact of inflation on interest bearing savings. Just under two thirds, at 60%, answered this question correctly. Question 4 related to calculating interest to be accumulated in a savings account, which only 39% answered correctly. Question 5 assessed knowledge of whether a stock market price fall would disadvantage equity

⁶⁰⁴ Banca d'Italia, *I bilanci delle famiglie italiane nell'anno 2006* (2008)
<http://www.bancaditalia.it/statistiche/indcamp/bilfait/boll_stat/suppl_07_08.pdf>.

holders. About half, at 51%, answered this question correctly. Question 6 related to mortgages, and their attributes, which was answered correctly by 47% of respondents. Only 27% of respondents answered question 3 correctly. Question 3 reads:

This figure shows the value of two different investment funds over the last four years. Which fund do you think produced the largest return in that period?⁶⁰⁵

The figure shows a line graph, with two investments. The first line peaked high and ended at a particular point. The other remained low but gradually rose to end at the same point as the first line. Respondents did not understand that the end of the line indicated the final sum.

VII AUSTRIA

A Oesterreichische Nationalbank – Financial Capability of Austrian Households

Based on a survey conducted in 2004, the study assessed the financial capability of Austrians in four areas:⁶⁰⁶ (1) managing money; (2) planning ahead financially; (3) making financial choices; and (4) staying informed.

In relation to managing money, four distinct areas were tested: knowledge about household finances, payment behaviour, account management, and, saving behaviour.

The findings were as follows:

- 90% of respondents meticulously kept track of finances;
- 45% of households keep records of their finances;
- 66% of respondents read product information from banks;

⁶⁰⁵ Ibid.

⁶⁰⁶ Pirmin Fessler, Martin Schürz, Karin Wagner and Beat Weber, 'Financial Capability of Austrian Households' (2007) *Monetary Policy and the Economy* 50
<http://oenb.at/en/img/mop_2007_3_fessler_tcm16-69087.pdf>.

- 80% of respondents usually pay bills immediately;
- 15% of respondents tend to overdraw their accounts; and
- 43% of respondents save regularly.

The study also found that:

- Most households save for emergencies; and
- The majority of respondents are convinced that private savings for retirement are necessary.

In relation to making financial choices and choosing products, the ‘survey collected information on households’ decision making behavior with respect to saving instruments chosen, risk orientation, factors which influence investment decisions, and whether they shop around for financial products’. The survey found that:

- Approximately 90% of respondents prefer low-risk saving instruments;
- Risk of stock ownership, affordability and lack of information act as a disincentive to invest; and
- Half of the respondents did not shop around for financial services.

In relation to getting help and staying informed, emphasis was placed on the sources of information used and the consumer’s needs. The survey found that 69% of respondents gained information from their own bank, while 12% used a financial advisor.

VIII JAPAN

A Bank of Japan - Central Council for Savings Information (Shiruporuto)

Shiruporuto has conducted two surveys relating to the financial literacy and financial behaviour of people living in Japan. The first of these surveys is the Public Opinion Survey on Household Financial Assets and Liabilities.⁶⁰⁷ The second of these surveys is the Consumer Survey on Finance.⁶⁰⁸

1 Public Opinion Survey on Household Financial Assets and Liabilities (2002)

⁶⁰⁷ Bank of Japan, *Public Opinion Survey on Household Financial Assets and Liabilities* (2002) <<http://www.shiruporuto.jp/e/survey/yoron2002/index.html>>.

⁶⁰⁸ Bank of Japan, *Consumer Survey on Finance* (2001) <<http://www.shiruporuto.jp/e/consumer/pdf/sisin02.pdf>>.

The Public Opinion Survey on Household Financial Assets and Liabilities was conducted from 21 June to 1 July 2002. The survey recorded 4,149 responses from Japanese households with at least two members.

The survey focused on the following issues: (1) the types of financial assets held by Japanese households; (2) the selection of financial products; (3) the understanding of financial institutions; and (4) retirement and pensions. The last three issues will be elaborated upon.

- **The selection of financial products.** This included assessing (i) the criteria for selecting financial products, and (ii) how Japanese households select financial products. In relation to the criteria for selecting financial products, the survey revealed that safety, liquidity and profitability were the most important to respondents. Safety was revealed to be the most important criterion. In relation to how Japanese households select financial products, diversification strategies and the perception of “self responsibility” were important to respondents. Respondents used diversification strategies to make investments safer, with 30% of households reporting that some form of action was pursued to increase the safety of their investments. The perception of “self responsibility” when purchasing financial assets was relevant to this “safety” ideal in Japan, which prompts the purchase of particular products to balance a portfolio. The more complex and riskier the financial product, the more Japanese households were willing to take responsibility for their selection. For example, a greater percentage of respondents were willing to take responsibility for derivatives, stocks or foreign deposits than for deposits.
- **Appreciation of the condition of financial institutions.** Over half of Japanese households want to check the financial health of institutions, but do not know how to do so. Less than 10% check the financial health of institutions.

- **Retirement and pensions.** 80% of households were found to be worried about retirement. Of those households, 70% were worried because of insufficient savings, and because pensions are not enough to fund retirement.

2 Consumer Survey on Finance (2001)

The survey was conducted in August 2001, with 2,638 people aged 20 years and older responding. The questions were in the form of a self assessment, gathering data about the following professed areas of knowledge:

- Mechanisms of the economy and financial institutions;
- Financial products; including
 - Savings and deposits;
 - Stocks and bonds; and
 - Insurance;
- Pensions;
- Tax;
- Risk and return in investing;
- Knowledge of consumer rights; and
- Sources of financial information.

The survey also clarified what steps Japanese consumers take when they are not happy with a financial product. In response to these questions, the majority explained that they sought advice and complained to the financial institution directly. However, a large portion of respondents did not complain about products purchased online, because they did not know how to go about complaining, or because they perceived the complaints process to be too troublesome.

IX IRELAND

A Financial Capability in Ireland Questionnaire

The study surveyed 1,529 people aged between 18 and 75 years from October 2007 to January 2008.⁶⁰⁹

The Financial Regulator of Ireland tested the following areas: (1) money management; (2) planning ahead; (3) making choices; and (4) getting help and staying informed. These areas will be discussed in turn.

⁶⁰⁹ Financial Regulator of Ireland, *Financial Capability in Ireland Questionnaire* (2008) <<http://www.financialcapability.ie/files/Financial%20Capability%20Questionnaire.pdf>>.

• **Money management.** Managing money included making ends meet and keeping track of finances. Just under two thirds of respondents said they kept up with bills and financial commitments, and 28% had no savings while 60% had no borrowings (excluding mortgages). About one in ten owed at least three times their monthly income. Over two thirds of respondents did not keep track of daily expenditures, and less than half keep track of credit card charges. The following questions or attributes emerged as important determinants of financial incapability:

- Impulsive purchasing;
- Living beyond means;
- Spending more than saving;
- Whether current account is usually overdrawn;
- Disorganised when managing money;
- Having no money at end of a period, such as a week;
- Cannot keep up with bills;
- Do not check credit card statements;
- Do not know how much disposable income is available; and
- Not checking balance of savings account before making a purchase or withdrawing cash.

• **Planning ahead.** Planning ahead included reviewing responses and plans to unexpected and expected drops in income, major expenses, and retirement. A key attitude, “living for today”, was used to test an incompetent planning outlook. Just under half, (43%), agreed with the statement that they live for today. Of those expecting a major expense, 60% had not made provision for this expense. The following questions and attributes emerged as important determinants of financial incapability:

- Not holding protection insurance;
- Insufficient provision for unexpected loss of income;
- No provision for retirement; and

- The length of time they could make ends meet if income suddenly stopped.
-
- **Making choices.** Choosing financial products related to the capacity of the consumer to research, review and assess different products in the market, compare costs, risks and return and keep informed of terms and conditions of the products. The survey also tested existing knowledge about products and whether respondents sought professional advice before purchasing a financial product. The following questions and attributes emerged as important determinants of financial incapability:
 - Not checking whether a financial advisor is authorised;
 - Choosing financial products without regard to risk;
 - Not reading or not understanding the terms and conditions of contracts and products (the results of the survey show that 1 in 5 respondents did not read the terms and conditions at all);
 - Not collecting information about a product;
 - Not seeking independent advice; and
 - Not shopping around for the best deal (the results of the survey show that only 1 in 5 respondents did comparison shopping).
-
- **Keeping informed.** Keeping informed about financial matters includes staying abreast of economic and financial indicators such as interest rates, inflation, the housing market, tax, pensions, and the share market. This also includes the information sources consumers used to keep informed. The following questions and attributes emerged as important determinants of financial incapability:
 - Infrequent monitoring of financial indicators;
 - A lack of understanding about how specific investments can be impacted by changes in the markets and the share market;
 - Positive attitudes about, and importance the respondent attaches to, keeping informed; and

- Not knowing how to make a complaint against a financial institutions (the results show 27% of respondents did not know how to make such a complaint)

X SCOTLAND

A August 2010 Scottish Household Survey – Finance

The “Finance” chapter of the Scottish Household Survey aims to answer one question: how are Scottish households managing financially?⁶¹⁰

The survey provides a cluster analysis of the reported financial management of Scottish households, breaking up the population by income, age, and other variables. This survey

⁶¹⁰ The Scottish Government, *The 2009 Scottish Household Survey: Finance* (2009) <<http://www.scotland.gov.uk/Publications/2010/08/25092046/7>>.

does not specifically measure financial literacy, but it does show a link between financial well being, behaviour that would be perceived as financially literate, and, particular socio-demographics.

The trends found by the survey were:

- As household net income rises, so too does financial stability;
- Single parents are the most likely to say they do not manage well financially;
- In relation to household tenure, mortgagees and owner occupiers claim to manage well, with a smaller percentage of renters claiming to manage well;
- Men manage financially better than women;
- Financial stability increases with age;
- People from the 15% of the most socially deprived in Scotland are financially worse off than the rest of Scotland;
- Savings increased as net household annual income increased;
- Mortgagees or owner occupiers of houses have much more savings than renters;
- Men have more savings than women;
- Saving increase with age, but then declines after 75 years of age;
- Credit card debt increases as income increases;
- Personal loans increase as household income increases;
- 82% of the 15% of the most deprived in Scotland have a bank account, compared with a 91% average; and
- The prevalence of building society accounts increases as household income increases.

XI RUSSIA

A The State University, Moscow – The Level of Financial Literacy of Russians

The study by Kuzina, presented to the 30th CIRET Conference in New York during October 2010, seeks to define and measure the concept of “financial literacy” in all Russian surveys.⁶¹¹ Bringing together the surveys and analysing them is an important exercise that sheds light on the financial issues that are important for financial capability in Russia.

⁶¹¹ Olga Kuzina, ‘The Level of Financial Literacy of Russians: Before and During the Crisis of 2008-2009’ (Paper presented at the 30th CIRET Conference, New York, October 2010).

Poor financial practices by Russians included lack of budgeting, understanding the terms of contracts before signing them and failing to shop around and compare financial products. Poor knowledge by Russians included an inability to identify a fraudulent investment option, as opposed to a legitimate investment option. Most respondents were pessimistic about challenging a bank or financial institution and reaching a fair outcome. Many of the Russian respondents, like many of the Australian, American, British, and Italian respondents in the above surveys, all overestimate their abilities in subjective self-assessment questions, while scoring poorly on objective financial literacy questions. Kuzina points to consumers being bombarded with information as the cause of this optimism, and thus perceiving themselves as being more financial knowledgeable.⁶¹²

In relation to financial matters in which the Russian respondents feel education is required, the majority did not want information about investing and specific financial products. First, the Russian respondents wanted more information about consumer rights protection. Second, they wanted assistance reading and understanding contracts. Information about saving for retirement took third place.

B World Bank Survey – Financial Literacy Program

This survey was implemented in Russia in June 2008. It was designed by the World Bank in preparation for the Financial Literacy Program.

Particularly relevant to this survey is the composition of the questionnaire (no results to the questionnaire have been able to be located).⁶¹³ The questionnaire covers the following issues:

⁶¹² Ibid, 10.

⁶¹³ World Bank, *Financial Literacy Survey Questionnaire* (2008)

<http://siteresources.worldbank.org/INTECAREGTOPPRVSECDEV/Resources/RU-WB_Financial_Literacy_Questionnaire.pdf>.

- Numeracy and money management:
 - Calculating simple and compounding interest payments from a deposit in a bank account (questions 24 and 25)
 - The impact of inflation on investments and the value of money (questions 26 and 27)
 - Calculating percentage discounts (question 28)
 - Calculating interest rates (question 29)
- Budgeting:
 - Whether households keep records of income and expenditure (question 1)
 - Whether households ran out of money before their next payment of income (questions 4)
 - Reasons for unexpected reductions in income (questions 6)
- Saving:
 - Whether households had any unspent income and savings when income arrived (questions 2 and 35)
 - Reasons for (not) saving (questions 36 and 37)
- Selecting financial products:
 - Whether consumers select financial products based on cost, or other factors (question 30)
 - Whether consumers compare products and terms and conditions (question 41)
- Spending habits:
 - Whether households spend on consumer goods, save or invest in products that may retain saleable value, or increase in value (questions 3, 34 and 35)
- Debt literacy:
 - Household responses to debt and having no money, such as using savings, reducing expenses, using credit, loans etc (questions 5, 7, 8, 9 and 10)

- Opinions about the financial failures of others, and whether the difficulties were due to unexpected events or poor planning and management (question 11)
- Testing in what situations credit is justified (question 31)
- Regulatory knowledge:
 - Whether a deposit is recoverable from a bankrupt bank, and how many roubles are recoverable (question 12)
 - Level of losses insured by the government for losses caused by reductions in the value of unit fund shares (question 13)
 - Whether consumers understood the grievance process to a regulatory body (questions 21 and 22)
- Consumer opinions:
 - Whether government should compensate consumers for losses in the financial markets (question 14)
 - Whether banks should charge uniform interest rates among similar financial products (question 15)
- Insurance:
 - Whether consumers have life insurance (question 16)
- Investing:
 - Whether investors follow market trends (questions 17)
 - Where investors source financial or product information (question 18 and 42)
 - Whether investors regretted investing in a particular financial product (question 19 and 20)
 - Reactions to financial products and services which did not meet expectations (question 21)
 - Reasons for investing (question 36)
- Self evaluation:
 - Respondents were asked to assess their level of financial literacy, on a scale from 1 to 5 (question 23)
 - Household financial health (questions 50 and 51).

The questionnaire requested people specify their:

- Sex;
- Age;
- Education level;
- Occupation;
- Income level;
- Household income; and
- Household size.